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Ashland Inc.

Construction Completion Report

Rensselaer, New York

September 2010

ARCADIS

George Thomas
Principal Geologist

Katherine Potter
Staff Geologist

Construction Completion Report

Rensselaer, New York

Prepared for:
Ashland Inc.

Prepared by:
ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse
New York, 13214-0066
Tel 315.446.9120
Fax 315.446.8053

Our Ref.:
OH003000.NY41

Date:
September 2010

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1. Introduction

1.1 Purpose

This *Construction Completion Report* (CCR) describes the activities performed to implement the corrective measure for the Ashland Inc. property (the "Site") located at 130 South Street, Rensselaer, New York. A site plan is provided as Figure 1. The CCR has been prepared by ARCADIS on behalf of Ashland Inc. (Ashland) in accordance with *Administrative Order on Consent, Docket No. II* RCRA-92-3008(h)-0201, between Ashland and the United States Environmental Protection Agency (USEPA) Region 2, and according to the March 2010 Corrective Measures Implementation Work Plan (CMI WP) approved by USEPA in a letter dated March 16, 2010.

Listed below are the activities that comprise the scope of the selected remedy for the Site.

- Installing and operating an enhanced bioattenuation remediation system.
- Monitoring performance of enhanced bioattenuation remediation system.
- Monitoring concentrations of benzene, toluene, ethyl benzene, and xylene (BTEX) in groundwater adjacent to the temporary monitoring well location PDI-11 for a period of 2 years.
- Monitoring groundwater quality and if necessary, evaluating the potential for additional vapor monitoring, at the former Volvo Service Center.
- Providing institutional and engineering controls.
- Removing the groundwater collection and treatment system.

This report documents construction activities related to the installation of injection and monitoring wells at the site which will be used to inject and/or monitor the remediation.

1.2 Site Background

1.2.1 Site Location and Physical Setting

The Ashland site is located at 130 South Street in the City of Rensselaer, Rensselaer County, New York, north of the intersection of South Street with U.S. Routes 9 and 20 (Columbia Turnpike). The main portion of the site, located on the west side of South Street, has an areal extent of approximately 4.8 acres and is enclosed by a six-foot high chain-link fence (see Figure 1). The site has most recently been used by Ashland for a chemical distribution facility; however, these operations were discontinued in late 2001 and the site is now vacant. All related buildings and other structures have been removed from the site. A small parcel of land associated with the site and formerly used as a parking lot is located on the east side of South Street. A further discussion of site history and site use is provided below.

Land use in the areas surrounding the site is predominantly residential, commercial, and light industrial. The main site area is bordered by CSX Transportation, Inc. (CSXT) property and rail lines to the west, undeveloped land to the north, South Street to the east, and Columbia Turnpike to the south. Commercial and light industrial properties are located west of the CSXT rail lines and residential properties are present along South Street east of the site.

The site is located on the edge of the Hudson River floodplain. The Hudson River is located approximately 1,650 feet northwest of the site. The northeast end of the site is located within the 100-year floodplain. A small unnamed creek enters the east central part of the site, crosses the site from east to northwest in a buried culvert then drains northward (still in the culvert) along the western side of the site and discharges into an open ditch at a headwall just inside the northern site boundary. Most surface water drains via overland flow to storm drains which discharge from the site into the creek. A small amount of surface water drains via overland flow to a drainage structure along the east side of the CSXT railroad tracks.

1.2.2 Geology

The site is within the Great Valley physiographic province (NYSGS, 1990). The regional topography consists of gently to steeply sloping lowlands which are underlain by metamorphosed sandstone and shale. The site itself is underlain by Normanskill Shale. This unit is Ordovician in age and consists predominately of shale with minor

sandstone and mudstone. Bedrock or drilling refusal was encountered in 20 borings across the site at depths of approximately 22 to 36 feet below ground surface (bgs).

The overburden materials above the bedrock at the site are mapped on the 1986 New York State Geological Survey map (Fakundiny, 1986) as lacustrine silt and clay deposited in proglacial lakes, with variable thickness. The unconsolidated material generally consists of approximately 3 to 6 feet of fill material (locally up to 10 feet in thickness) underlain by up to 20 or more feet of sand with variable amounts of silt, clay and fine gravel. This sandy material is locally interbedded with variable-sized materials, which in some areas is a sand and gravel in a till-like setting, sand, or silty sand. The more conductive coarser-grained beds do not appear to be laterally continuous and therefore do not comprise a laterally continuous highly conductive water bearing unit.

1.2.3 Hydrogeology

Based on current and historical groundwater investigation data, groundwater occurs at depths ranging between 3 and 9 feet bgs. Groundwater generally flows to the northwest with a horizontal hydraulic gradient of approximately 0.01 to 0.02. Prior to system shutdown July 2008, pumping from the groundwater treatment system sump in the center of the site provided localized drawdown and hydraulic control of affected groundwater in the central and northern portions of the site. Since the system was shut down in July 2008, the groundwater flow is no longer influenced by pumping at the site. A detailed discussion of groundwater, surface water, and the interaction between the two, was provided in the 2009 Revised Draft RFI Report.

1.2.4 Site History

From 1892 to approximately 1915, the southern portion of the site was occupied by the Fred Schwartz Slaughter House. Between 1909 and 1925, ownership of the site was transferred to Empire Size and Chemical Corporation (Empire). Empire utilized the southern portion of the site until approximately 1935. The exact nature of operations conducted by Empire is not known; however, a Sanborn Fire Insurance Map indicated that the area was used for the manufacture of “Rosin Size Paste”.

From approximately 1935 to 1944, Hercules Powder Company (Hercules) operated in the southern portion of the site. As a wholesale chemical distributor, Hercules transferred, drummed, and stored solvents in the southern portion of the site. A vehicle repair shed in the southern portion of the site was also used for product storage during the winter.

Ownership of the southern portion of the site was transferred from Hercules to Eastern Chemicals, Inc. (Eastern) in approximately 1944. Eastern retained the wholesale chemical distribution activities from Hercules and expanded the operations area. Interviews with long-term employees indicated that Eastern handled solvents and corrosives (similar to the former Ashland inventory) in bulk quantities. In addition, bulk linseed oil, turpentine, antifreeze, and sodium silicate was also transferred, drummed, and stored in the central portion of the site.

Ashland purchased the site in 1969 and continued chemical distribution operations. By 1975, several building additions were completed. In 1987, an aboveground solvent storage tank (AST) farm, which included a catastrophic release collection system, was relocated to the northern portion of the site. As part of the new AST farm construction, 6,000 cubic yards of soil were removed and subsequently placed and treated in an engineered secured stockpile located in the northern portion of the site. This work was conducted pursuant to a Consent Agreement/Consent Order issued by the USEPA in 1984 (Docket No. II RCRA-83-0253). In 1990, the acid tank farm neutralization unit was replaced and containment dikes were installed at truck transfer locations. Ashland discontinued operations at the site in December 2001. Subsequent to the shutdown, Ashland emptied and decontaminated the tanks and associated pipelines at the site.

From September 2003 to December 2006 the site was leased to a company for the storage and distribution of advertising inserts for newspapers. The lessee utilized the warehouses, office buildings, and parking lot on the southern portion of the site. The central portion of the site was used for the lessee's truck parking/loading.

Since December 2006, the site has been unoccupied with the exception of occasional visits by personnel conducting maintenance and monitoring activities on the groundwater treatment system located in the northern portion of the site In October 2007, Ashland implemented a limited decommissioning program at the site. During this program, all above ground tanks, piping, and associated support structures were removed/recycled.

1.2.5 Previous Investigations

The March 2009 Revised Draft RFI Report was prepared to summarize the results of environmental investigations completed at and near the site updating the previous draft RFI submitted in 2006, and to address a few data gaps in the 2002 Draft RFI Report. The information presented in the Revised Draft RFI Report was used in the development of the RCRA Corrective Measures Study (CMS) and both documents

were submitted simultaneously setting the basis for selection of the appropriate remedial alternative for the site.

A previous Draft RFI Report was submitted to USEPA in October 2002. That report summarized all data collected at the site since the initial 1981 USEPA RCRA inspection, concluding that VOC-affected groundwater was delineated and restricted to Ashland and CSXT property immediately downgradient of the site and suggesting no further groundwater investigation was necessary. In a November 7, 2002 letter to Ashland the USEPA provided comments and required that VOCs in the southwest corner of the site be addressed by the CMS and pointed out several other data gaps to be addressed before final approval would be provided. The data gaps were largely addressed in a subsequent resubmittal of the Draft RFI on December 19, 2002 which committed to addressing affected groundwater in the southern and central portions of the site in addition to other areas on and off the Rensselaer site. In a January 15, 2003 letter, USEPA approved the Draft RFI Report on the condition that Ashland address the offsite groundwater issues in the remedy proposed in the CMS. The remainder of the information requested in USEPA's January 2003 conditional approval was provided in the First Quarter Progress Report submitted to USEPA on March 14, 2003.

A CMS Work Plan was subsequently developed and, in accordance with that Work Plan, a Draft CMS was submitted to USEPA in November 2006. As part of, and in parallel with development of the CMS, additional work was conducted culminating in the submittal of , a Groundwater Natural Attenuation Study in January 2004, and a Human Health Risk Assessment (HHRA) in September 2005. The HHRA identified soil vapor as the most likely potential threat to human health and the environment. In 2007 and 2008, a series of soil vapor investigations were performed that were summarized in the May 17, 2007 Off-site Indoor Air Sampling Summary, the June 1, 2007 Off-site Soil Vapor Sampling Summary, and the June 26, 2008 Final Residential Indoor Air Report.

In response to a request from USEPA, Ashland collected subslab soil vapor and indoor air from the two houses on South Street. Data collected from the houses fell in the no further action category according to the 2006 New York State Department of Health Guidance for Soil Vapor Intrusion and USEPA agreed that further investigation was unwarranted.

In August 2007, a letter was submitted summarizing current site conditions and proposing a revision to the remedial approach that more effectively addressed site conditions. USEPA approved the proposed revised remedial approach in a letter dated

September 27, 2007. The Revised Draft CMS was submitted in January 2008, with the revised remedial approach as discussed in the following section of this report. USEPA provided conditional approval of the Revised Draft CMS on March 13, 2008 requesting that over the next six months public documents be drafted and a final RFI be submitted with the final CMS. The Revised Draft CMS was resubmitted with the final RFI on March 13, 2009.

USEPA approval of the RFI and the CMS was provided on September 2, 2009 after all public documents (Statement of Basis, Public Participation Plan, and a Fact Sheet) were finalized to accompany the release of the RFI and the CMS for a public comment period as required by the AOC. The CMI WP was submitted on January 15, 2010 and approved without comment by USEPA on March 16, 2010. The selected remedy is described below.

1.2.6 Selected Remedy

The USEPA-approved remedy for the site is Enhanced Reductive Dechlorination (ERD) in-situ reactive zone (IRZ). ERD, a commonly used remedial technology for addressing chlorinated volatile organic compounds (VOCs) like those observed at the site, employs native soil bacteria to convert the constituents of interest (COIs) to innocuous end products. The dechlorinating capacity of the native soil bacteria is stimulated through injection of a carbon substrate to support bacterial growth and respiration of electron acceptors, including chlorinated compounds. A number of carbon substrates can be used in ERD systems, including molasses, corn syrup, lactate, whey, and vegetable oils. These food-grade substances are typically introduced into the subsurface via injection wells to create a biologically active zone where dechlorinating microorganisms thrive.

The onsite enhanced bioattenuation remedy consists of an ERD IRZ configured as a barrier to offsite migration of chlorinated VOCs. A soluble carbohydrate such as molasses will be used as a carbon substrate to create the IRZ. The barrier was installed where COIs have been observed near the downgradient site property boundary in the central and southern portions of the facility. Use of a soluble substrate will promote enhanced bioattenuation downgradient of the barrier due to groundwater transport of the substrate. The approved CMI WP provided the basis for the implementation of the remedy discussed in this report.

1.3 Organization of CCR

The CCR has been organized into the following sections:

Section	Purpose
Section 1 – Introduction	Provides a brief overview of the CCR activities, site background and organization.
Section 2 – Summary of Remedial Construction Activities	Presents the monitoring and injection well installation activities.
Section 3 – Schedule for Remaining Activities	Presents schedules for injection, monitoring, and reporting.

2. Summary of Remedial Construction Activities

The specific activities related to construction of the Corrective Measure are discussed in detail in this section and include: site preparation, monitoring well installation, and injection well installation.

2.1 Site Preparation Activities

The pre-CMI Observation was completed by Ashland, the Engineer, and the Contractor to verify existing site conditions, locate onsite utilities, and mark injection/ monitoring well locations. Documentation of the existing site conditions was recorded via photographic log and a written logbook. See Appendix A for photographic logs and Appendix B for field notes.

The following CMI activities were conducted by Thew Associates (for utility clearance), Parrott-Wolff, Inc. (for drilling), or ARCADIS.

- ARCADIS obtained the necessary access approvals and permits from the New York State Department of Transportation (NYSDOT) to allow installation of monitoring well location MW-21 in the NYSDOT right-of-way (ROW) west of CSXT property line and the Site. ARCADIS prepared a letter requesting access to NYSDOT property and provided fees to acquire permits for drilling activities in the ROW. The owner of Pratt & Sons, who owns land adjacent to the NYSDOT property, was contacted and an access agreement was signed prior to installation of MW-21 as the driller had to cross Pratt & Sons property to install MW-21.

- ARCADIS and Parrott-Wolff, Inc. (PW) determined the injection and monitoring well locations by measuring the distance from each well to existing structures/features on March 18, 2010. Flagged wooden stakes, flagged metal pins, and/or spray paint, as appropriate, were used to mark the injection and monitoring well locations (see Appendix A for a photographic log of location mark outs).

- There are no existing facility drawings to review for this site. However, ARCADIS used past drilling knowledge to identify potential target areas for utility clearance issues.

- PW contacted Dig Safely New York for utility clearance a minimum of three working days prior to the start of the CMI field activities.

- An onsite utility stake out near each proposed location was conducted by Thew Associates on March 29, 2010 based on the temporary stake out performed by PW and ARCADIS. Appendix A presents a photographic log related to the utility stake out using ground penetrating radar (GPR).

- PW hand-cleared utilities to a depth of at least four feet below ground surface (bgs) at each proposed boring location with ARCADIS oversight beginning March 29, 2010. See Appendix A for a photographic log documenting hand clearing activities.

- PW mobilized 55-gallon drums for storage of water and soil cuttings generated by the CMI activities, including soil cuttings from the well installations, well development and decontamination water.

- PW constructed an onsite equipment decontamination pad outside of the drilling area. The decontamination pad was constructed such that water could be collected within a lined polyethylene material sloped to a collection sump which pumped decontamination fluids into a 55-gallon drum for appropriate offsite disposal by Ashland.

2.1.1 Air Monitoring

Air monitoring for total organic vapors (TOV) was performed utilizing a portable photo-ionization detector (PID) during well drilling activities in accordance with the existing Health and Safety Plan. Results of the PID readings and community air monitoring plan are provided in Appendix B. No air monitoring thresholds were exceeded during any phase of the field activities.

2.2 Monitoring Well Installation

Two additional groundwater well locations (MW-20 and MW-21) were installed as part of this remedial construction. Table 1 presents the well construction details of all wells installed during drilling activities pertaining to the CMI. Monitoring well MW-20 was installed to monitor the location where benzene, toluene, ethylbenzene, and xylene were found in shallow soil north of MW-15 during the pre-design investigation conducted in March 2009 and reported in Appendix A of the CMS WP. The well was installed using a tripod with driven steel casing due to the inaccessible nature of the location between the railroad tracks and the property fence line. The total depth of the boring was 13’ bgs and the screen was installed from 2 to 12’ bgs using 2” schedule 40 poly vinyl chloride (PVC) pipe with a ten-foot 0.010-inch slot screen and a solid riser

completed with a stickup protective steel casing. MW-20 will be sampled on a semi-annual basis for VOCs only.

MW-21 was installed southwest of the Southern IRZ Area to allow for performance monitoring approximately 80 feet downgradient from the IRZ. The well was installed using a hollow stem auger rig. The well was intended to be installed such that the screen interval straddled the water table at that location. The water table was found at approximately 6.4 feet bgs, therefore, this performance monitoring well was installed to a depth of 13 feet bgs. This monitoring well was constructed of 2-inch diameter schedule 40 PVC pipe with 10 feet of 0.010 inch slot screen and solid PVC riser completed with a stickup protective steel casing. Well construction details for the monitoring wells at the Site are presented on Table 1. Drilling and installation is documented in Appendix A with a photographic log and field notes are provided in Appendix B. Boring logs and well construction diagrams are provided in Appendix C.

2.3 Injection Well Installation

As stated previously, the USEPA-approved Final CMI Work Plan proposed a remedy of enhanced reductive dechlorination to be administered through two IRZs located in the central and southern portions of the site. The construction of the IRZs began on March 29, 2010 and was completed in two phases. The installation of the IRZ injection wells is discussed in detail in this section. Figure 2 shows the proposed injection well locations. Figure 3 presents the final surveyed locations of injection wells in both the Southern and Northern IRZs. Table 1 presents the well construction details. Appendix A contains a photographic log and Appendix B provides field notes from the well drilling and installation activities. Boring logs and well construction diagrams are provided in Appendix C.

2.3.1 Phase 1 Drilling Activities

The CMI WP proposed to install 6 new injection wells (injection well locations IW-A2, IW-A3, IW-A4, IW-A5, IW-A6, and IW-A7) along the Southern IRZ Area and 4 injection wells (injection well locations IW-B2, IW-B3, IW-B4, and IW-B5) along the Northern IRZ Area, which, along with the pre-existing injection well IW-B1, completed the barrier in that area of the site. Injection well IW-A4 in the Southern IRZ was not installed due to a subsurface obstruction that will be discussed in detail below.

Each boring was drilled using a hollow stem auger rig either track or truck-mounted, depending on accessibility. Continuous two-foot split spoon samples were collected to

the end of each boring and each split spoon was then visually-characterized for color, texture, and moisture content and headspace screened using a photoionization detector (PID).

Previous investigation results had revealed that COIs were being transmitted in the shallow saturated zone (i.e., less than 20 feet bgs). Additionally, during the 2009 Pre-design investigation (PDI), a gray silty clay/clay/clayey silt layer was found in each of the thirteen PDI locations ranging in thickness from five to 16 feet thick. Therefore, the CMI WP planned to install the injection well screens above this layer with a two-foot sump set into the gray clay-rich layer. While drilling the injection wells, the existence of the clay-rich layer was much more variable than what was found during the PDI. Therefore, the targeted depths for well screen placement were adjusted such that the more conductive layers in the saturated zone in each boring would be maximized. The ten-foot by two-inch stainless steel wire mesh well screens were installed with #0 Morie sand pack to approximately one foot above the screen and two feet below the screen in the annular space around the 2-inch Schedule 40 PVC sump. A bentonite seal at least one foot thick was placed above the sand pack to one foot below ground surface. A stickup 2-inch black steel riser with a protective steel outer casing and lockable cover completed the injection wells at the surface.

Drilling activities took place in Phase I between March 29 and April 9, 2010. During drilling in the Southern IRZ in Phase I, shallow refusal at approximately 3.5 feet bgs was observed at IW-A4, IW-A5, and IW-A6. Phase I drilling was suspended on April 9, 2010 due to this subsurface obstruction that was later confirmed to lay directly under four of the five remaining southern IRZ injection well locations. Only injection well IW-A7 was installed in the southern IRZ during Phase I activities. At this point, a plan was developed to investigate the nature and extent of the obstruction and determine how best to approach the installation of the remaining injection wells as the impact of the obstruction on groundwater flow and the performance of the remedy in that area was in question. The plan called for use of test pit excavations to define the boundaries of the obstruction, and if possible, to determine the thickness and extent of the inferred concrete slab in the area of the Southern IRZ.

2.3.1.1. Test Pitting Activities

On May 14, 2010, Thew Associates remobilized to clear for utilities with GPR in the new area proposed for test pitting which also covered the area proposed for installation of the remaining five injection wells. Test pits were excavated by PW using a mini-excavator on June 2, 2010 to determine the extent of the subsurface obstruction. A

photographic log is provided in Appendix A and field notes, data interpretation via map sketches, and notated figures with field observations are provided in Appendix B. It was determined that the obstruction was a concrete slab which ranged in thickness from approximately 1.5 to 5 feet thick and was approximately 10 feet wide, running from just north of IW-A7 to beneath the former warehouse footers somewhere south of IW-A3. In reviewing the data collected during test pitting, it was determined the best approach to installing the remaining five injection locations would be to offset them to the east beyond the known boundary of the concrete. Figure 3 shows the final placement of injection wells for both the Southern and Northern IRZs.

2.3.2 Phase II Drilling Activities

Phase II of the drilling to complete installation of the remaining five injection wells commenced June 29, 2010. The area had been cleared for utilities by Thew Associates before test pitting began, and ARCADIS marked out the offset locations preparatory to drilling activities. All locations were drilled as marked along the new line except one injection well location (IW-A4) which was not installed after four attempts to drill through or beyond the concrete obstruction were unsuccessful. Given that the thickness of the obstruction at IW-A4 was approximately 6 to 11.5 feet bgs, it was proposed that groundwater flow was being directed to either side of the area proposed for installation of IW-A4 by the obstruction and would potentially be treated by molasses injected into IW-A5 and IW-A3. The performance monitoring will be used to confirm the effectiveness of this approach. Therefore, following discussions with USEPA, it was agreed to not install this injection point.

Observations during drilling at IW-A2 and IW-A3 revealed that there was no clay-rich layer in this area, so the crew was instructed to continue drilling until refusal on bedrock at IW-A2 and to a similar depth at IW-A3. The well screens at these two locations were placed in material that was judged to be the most conductive ten-foot interval based on visual observations of the recovered soil samples within each boring (approximately 9 to 19 feet bgs). Installation and well development of the balance of injection wells and monitoring wells were completed on July 2, 2010.

2.3.3 Well Development

The injection and monitoring wells were developed within 24-hours of installation by PW using a whale pump to evacuate water from each well. Pumping continued until stable water quality parameters (pH, temperature, oxidation reduction potential,

dissolved oxygen, and specific conductivity) were obtained and/or ten well volumes were removed.

2.3.4 Decontamination Procedures and IDW

PW decontaminated the drill rig prior to the start of drilling activities and before leaving the site. All down-hole equipment was decontaminated between each boring.

Down-hole equipment decontamination was conducted using a high-pressure, low-volume hot-water/steam wash. The split-spoon sampler used to collect soil characterization samples was washed with soap (i.e., Alconox) and water in a five-gallon bucket using a scrub brush after installation of each well. Decontamination activities were performed until no visible soils or other debris was present on the equipment surfaces.

The following waste streams were generated as a result of the corrective measure activities:

- Soil cutting from well installation activities.
- Materials used to construct decontamination areas.
- Decontamination liquids.
- Disposable sampling equipment.
- Personnel protective equipment.
- Well development/purge liquids.

The approach for handling the waste streams generated by the CMI activities are summarized below.

The soil cuttings and other solid wastes generated as a result of installing the injection wells and monitoring wells were containerized into DOT-approved steel 55-gallon drums for subsequent characterization, offsite transportation, and Ashland retrieved and appropriately disposed of the drums offsite within a few weeks of the end of drilling activities during each phase.

The waters generated from equipment decontamination wash waters and well development, were containerized within a DOT-approved steel 55-gallon drums for offsite transportation and disposal by Ashland. All waste generated was staged onsite in a secure location prior to pickup by Ashland.

Waste characterization from previous sampling events was used to profile the waste stream from both Phase I and II activities, as no new materials were being disposed of during this field program.

2.4 Schedule for Remaining Activities

The first injection is expected to occur in September or October 2010 with monthly injections to follow. A round of performance monitoring will be conducted approximately three months after the initial injection according to the sampling plan provided in Table 2.

An annual report will be provided approximately 12 months following the first injection to report on the injection activities and provide performance monitoring data to USEPA according to the proposed documentation requirements presented in the CMI WP.

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TABLES

Table 1. Well Construction Table, Construction Completion Report, Ashland Inc., Rensselaer, New York

Well ID	Date Installed	Method	Elevation (ground ft. amsl)	Elevation (TOC ft. amsl)	Total Depth of Boring (ft. bgs)	Total Installed Depth of Well* (bgs)	Screen Interval (ft. bgs)	Screen Length	Screen Top Elevation (ft. amsl)	Screen Bottom Elevation (ft. amsl)	Material & Diameter/ Slot Size	Surface Completion	Drilling Contractor	Comment
IW-B1	10/02/07	HSA	25.2	25.03	20	20	10-20	10	15.2	5.2	SS/2"/0.010**	Flushmount	Parratt-Wolff	Installed as part of the PDI Northern IRZ
IW-B2	04/05/10	HSA	24.3	25.99	13	12	2-12	10	14.3	4.3	SS/2"/0.010**	Stickup	Parratt-Wolff	Northern IRZ
IW-B3	04/06/10	HSA	23.9	25.6	13	12	2-12	10	13.9	3.9	SS/2"/0.010**	Stickup	Parratt-Wolff	Northern IRZ
IW-B4	04/05/10	HSA	24	25.76	13	12	2-12	10	14	4	SS/2"/0.010**	Stickup	Parratt-Wolff	Northern IRZ
IW-B5	04/07/10	HSA	28.6	30.75	17	14.6	4.6-14.6	10	18.6	8.6	SS/2"/0.010**	Stickup	Parratt-Wolff	Northern IRZ
IW-A2	06/29/10	HSA	29.2	32.3	24.2	19	9-19	10	19.2	9.2	SS/2"/0.010**	Stickup	Parratt-Wolff	Refusal on bedrock Southern IRZ
IW-A3	06/30/10	HSA	28.9	31.57	23	19.5	9.5-19.5	10	18.9	8.9	SS/2"/0.010**	Stickup	Parratt-Wolff	Southern IRZ
IW-A4	06/30/10	HSA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Parratt-Wolff	Abandoned location after four attempts hit concrete subsurface obstruction
IW-A5	06/28/10	HSA	26.9	29.2	19	15.5	5.5-15.5	10	16.9	6.9	SS/2"/0.010**	Stickup	Parratt-Wolff	Southern IRZ
IW-A6	06/28/10	HSA	26.7	28.85	15.6	13.6	3.6-13.6	10	16.7	6.7	SS/2"/0.010**	Stickup	Parratt-Wolff	Southern IRZ
IW-A7	04/06/10	HSA	28.7	31.13	17	14.6	4.6-14.6	10	18.7	8.7	SS/2"/0.010**	Stickup	Parratt-Wolff	Southern IRZ
MW-20	04/01/10	Driven Casing	25.6	25.36	13	12	2-12	10	15.6	5.6	PVC/2"/0.010	Stickup	Parratt-Wolff	BTEX Monitoring Well
MW-21	04/01/10	HSA	26.4	27.97	13	13	3-13	10	16.4	6.4	PVC/2"/0.010	Stickup	Parratt-Wolff	Performance Monitoring Well

Notes:

* = Does not include sump on injection wells.
** = 2" X 10' wire mesh stainless steel (SS) screen with black steel riser.
HSA = Hollow Stem Auger.
NA = Not Available/Applicable.
PVC = polyvinyl chloride
IRZ = In-situ Reactive Zone

Table 2. IRZ Performance and BTEX Monitoring Analytical Parameters, Construction Completion Report, Ashland Inc., Rensselaer, New York

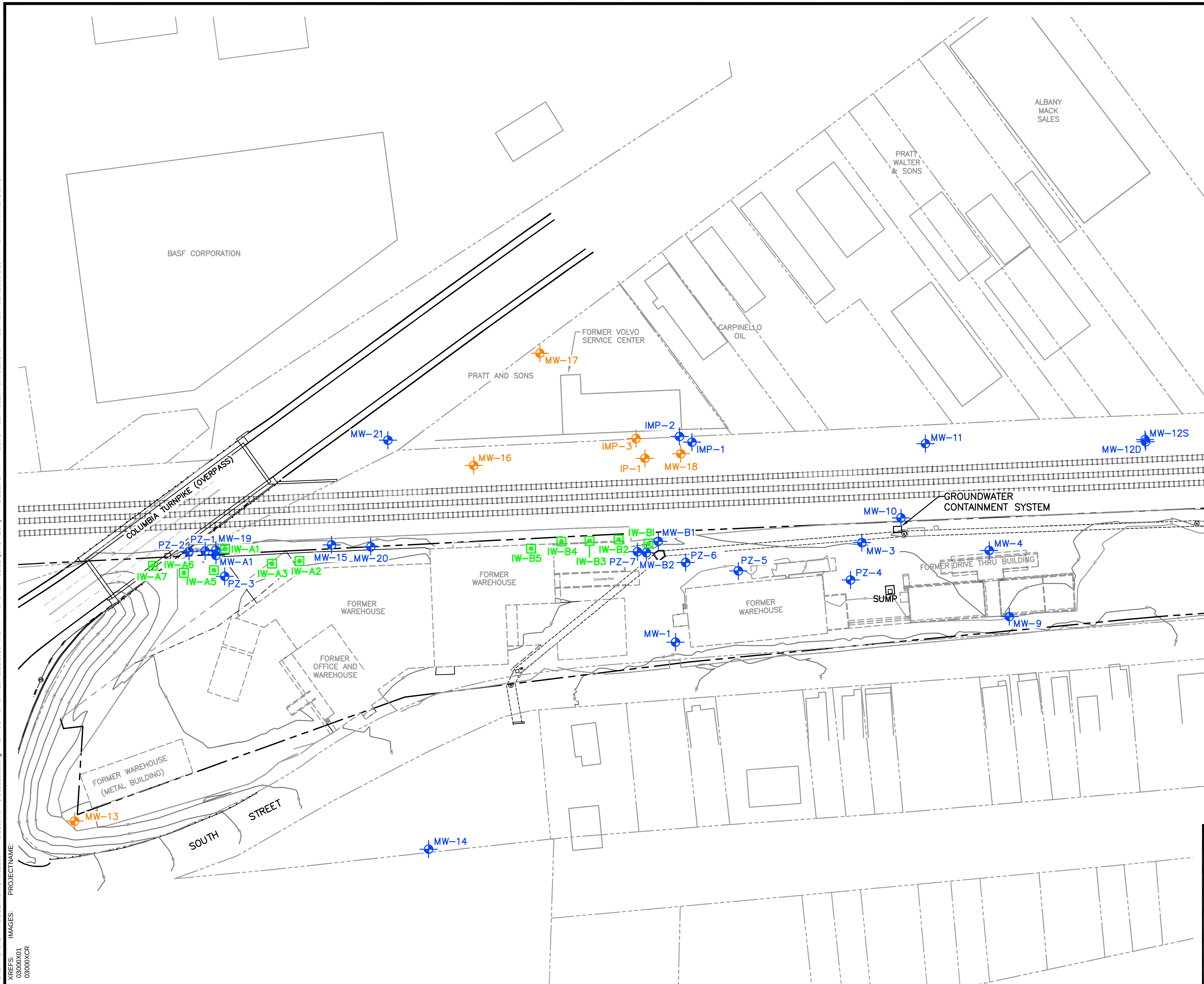
Analyte / Parameter	pH	VOCs	Total Organic Carbon	Ethene	Ethane	Methane	Nitrate	Sulfate	Total iron	Dissolved Iron	Total Manganese	Dissolved Manganese
Analytical Method / Instrument	**YSI - Field**	**EPA 8260**	**EPA 415.1**	**RSK 175 SOP**	**RSK 175 SOP**	**RSK 175 SOP**	**EPA 300.0**	**EPA 300.0**	**EPA 6020**	**EPA 6020**	**EPA 6020**	**EPA 6020**
IP-1	X	X	X	X	X	X	X	X	X	X	X	X
IMP-3	X	X	X	X	X	X	X	X	X	X	X	X
MW-13	X	X	X	X	X	X	X	X	X	X	X	X
MW-16	X	X	X	X	X	X	X	X	X	X	X	X
MW-17	X	X	X	X	X	X	X	X	X	X	X	X
MW-18	X	X	X	X	X	X	X	X	X	X	X	X
MW-20	-	X*	-	-	-	-	-	-	-	-	-	-
MW-21	X	X	X	X	X	X	X	X	X	X	X	X
# Samples/Event	8	10	8	8	8	8	8	8	8	8	8	8
Subtotal # of samples Annually	32	40	32	32	32	32	8	8	8	8	8	8
Duplicate	-	4	4	4	4	4	2	2	2	2	2	2
MS/MSD	-	4	4	4	4	4	2	2	2	2	2	2
Trip blank	-	4	4	4	4	4	2	2	2	2	2	2
Total QA/QC samples	-	12	12	12	12	12	6	6	6	6	6	6
Total Samples Annually	32	52	44	44	44	44	14	14	14	14	14	14

Notes:

1. Samples will be analyzed by Test America (TA) located in Burlington, Vermont.
2. X indicates sample to be collected.
3. No shading indicates analytes/parameters to be sampled quarterly (4 times/year).
4. Shading indicates analytes/parameters to be sampled annually.
5. Quality assurance/Quality control (QAQC) samples include duplicate, matrix spike, matrix spike duplicate, and trip blank samples to be collected once per 20 samples for each parameter.
6. MS/MSD = matrix spike and matrix spike duplicate.
7. VOC=volatile organic compounds.
8. pH to be recorded in the field.
9. * = semi-annual sampling (spring/fall) to monitor BTEX concentrations at MW-20.
10. BTEX = benzene, toluene, ethylbenzene, and xylenes.

ARCADIS

FIGURES



LEGEND:

IMP-1/MW-1/MW-A1/PZ-1 GROUNDWATER GAUGING WELL

IP-1/IMP-3/MW-16 PERFORMANCE MONITORING GROUNDWATER SAMPLING LOCATIONS

IW-B1 INJECTION WELL LOCATION

SURFACE CONTOUR

RAILROAD TRACK

CULVERTED STREAM PIPE

PROPERTY LINE

FORMER BUILDINGS AND STRUCTURES

NOTES:

1. LOCATIONS AND TOPOGRAPHY EAST OF CSX RAILROAD PROPERTY AND WEST OF AND INCLUDING SOUTH STREET, SURVEYED BY THEW ASSOCIATES PE-LS, PLLC (OCTOBER 2008). TWO NEW MONITORING WELLS, MW-20 & MW-21, AND TEN NEW INJECTION WELLS, IW-A2 THRU IW-A7 & IW-B2 THRU IW-B5, WERE SURVEYED ON JULY 2, 2010 BY THEW ASSOCIATES. REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND PROJECTED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (EAST ZONE). VERTICAL REFERENCE TO NGVD 1929. ASHLAND PROPERTY BOUNDARY ESTABLISHED BY THEW ASSOCIATES SURVEY AND DEED RESEARCH (OCTOBER 2008). OTHER PROPERTY LINES AND MAP FEATURES ARE FROM RENSSELAER COUNTY TAX MAPPING AND NEW YORK STATE CLEARING-HOUSE AERIAL PHOTOGRAPHY.

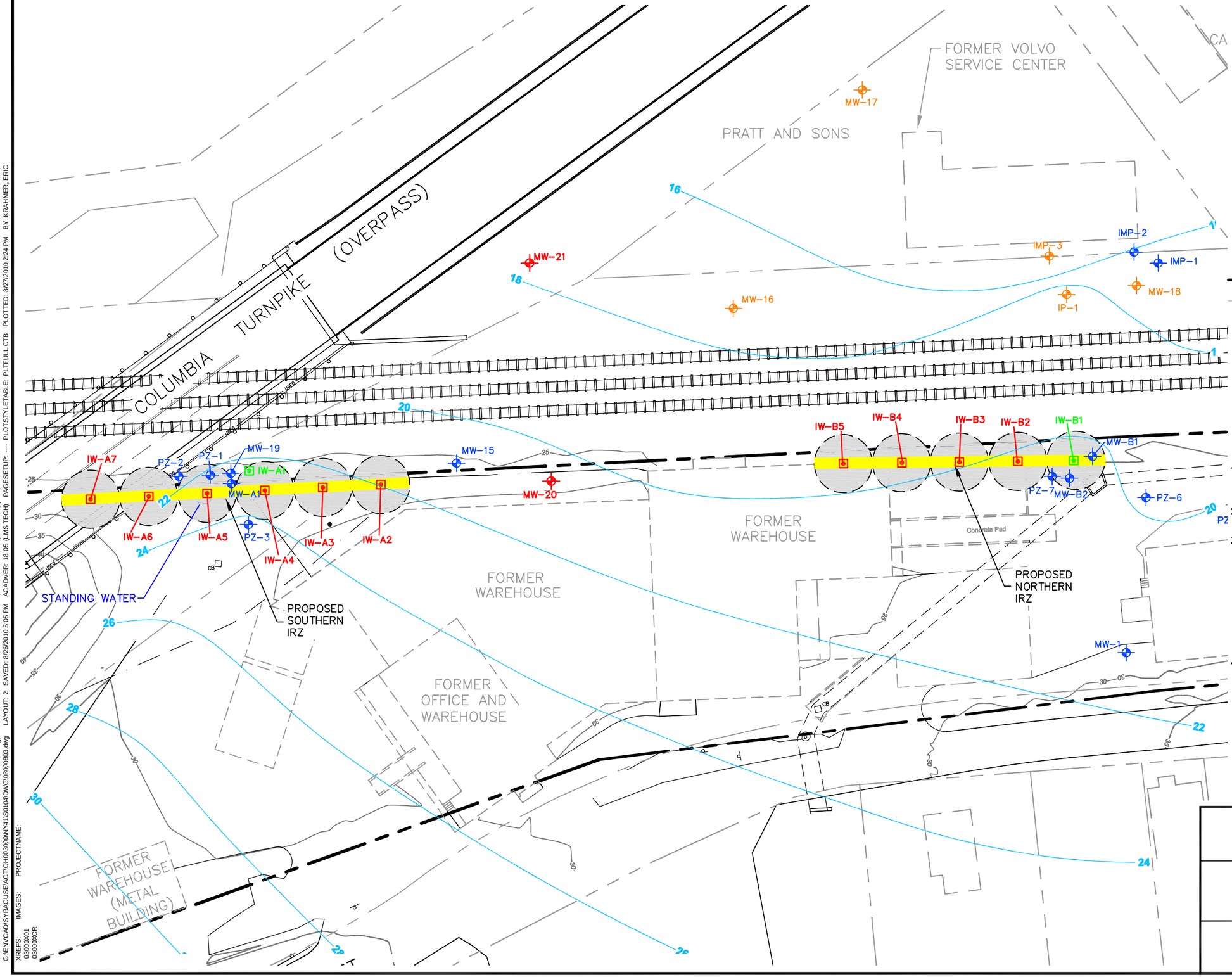
0 100' 200'
GRAPHIC SCALE

ASHLAND INC.
RENSSELAER, NEW YORK
CONSTRUCTION COMPLETION REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1



LEGEND:

- IMP-1/MW-1/MW-A1/PZ-1 — GROUNDWATER GAUGING WELL
- IP-1/IMP-3/MW-16 — PERFORMANCE MONITORING GROUNDWATER SAMPLING LOCATIONS
- PROPOSED GROUNDWATER SAMPLING LOCATION
- IW-B1 — INJECTION WELL LOCATION
- PROPOSED CMI INJECTION WELL LOCATION
- ASHLAND PROPERTY BOUNDARY
- OTHER PROPERTY LINE
- FORMER BUILDINGS AND STRUCTURES
- PROPOSED EXTENT OF IN-SITU REACTIVE ZONE (IRZ)
- LATERAL EXTENT OF INFLUENCE (30 FEET)
- 20 — GROUNDWATER ELEVATION CONTOURS FROM SEPTEMBER 23, 2009

NOTES:

1. PDI LOCATIONS 1 THROUGH 13 WERE FIELD LOCATED WITH MULTIPLE TIE-OFFS TO EXISTING POINTS (WELLS, STRUCTURES, ETC.).
2. PROPOSED IRZ LOCATIONS IW-A6 AND IW-A7 WILL BE INSTALLED UNDER THE COLUMBIA TURNPIKE OVERPASS.
3. LOCATIONS AND TOPOGRAPHY EAST OF CSX RAILROAD PROPERTY AND WEST OF AND INCLUDING SOUTH STREET, SURVEYED BY THEW ASSOCIATES PE-LS, PLLC (OCTOBER 2008). REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND PROJECTED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (EAST ZONE). VERTICAL REFERENCE TO NGVD 1929. ASHLAND PROPERTY BOUNDARY ESTABLISHED BY THEW ASSOCIATES SURVEY AND DEED RESEARCH (OCTOBER 2008). OTHER PROPERTY LINES AND MAP FEATURES ARE FROM RENSSELAER COUNTY TAX MAPPING AND NEW YORK STATE CLEARING-HOUSE AERIAL PHOTOGRAPHY.
4. GROUNDWATER ELEVATION CONTOURS FROM THE FOURTH QUARTER PROGRESS REPORT SUBMITTED 11/10/09.

0 50' 100'

GRAPHIC SCALE

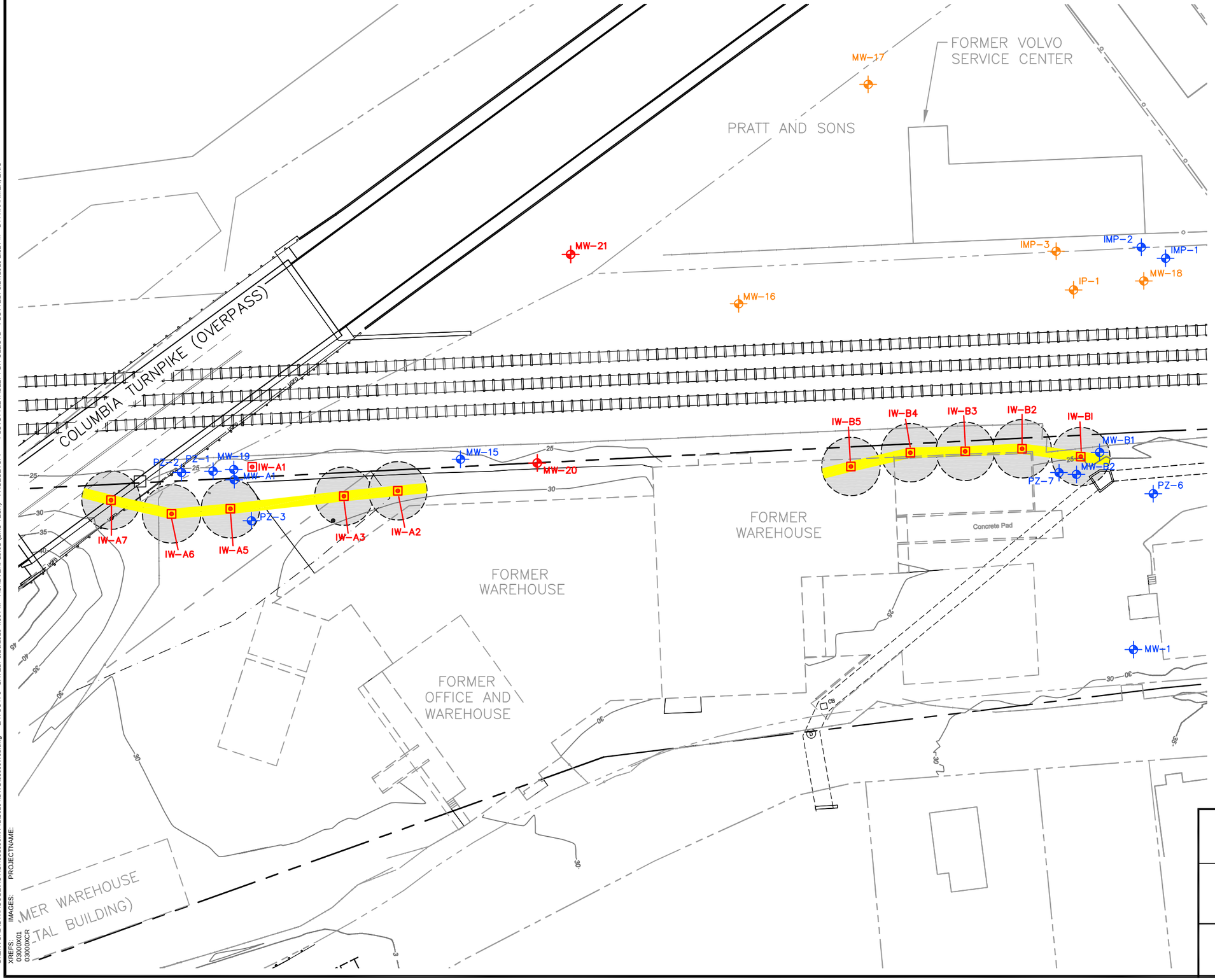
ASHLAND INC.
RENSSELAER, NEW YORK

CONSTRUCTION COMPLETION REPORT

PROPOSED IRZ LOCATIONS

ARCADIS

FIGURE
2



LEGEND:

- IMP-1/MW-1/MW-A1/PZ-1 — GROUNDWATER GAUGING WELL
- IP-1/IMP-3/MW-16 — PERFORMANCE MONITORING GROUNDWATER SAMPLING LOCATIONS
- NEW GROUNDWATER SAMPLING LOCATION
- IW-B1 — INJECTION WELL LOCATION
- FORMER BUILDINGS AND STRUCTURES
- EXTENT OF IN-SITU REACTIVE ZONE (IRZ)
- LATERAL EXTENT OF INFLUENCE (30 FEET)

NOTES:

1. IRZ WELLS IW-A6 AND IW-A7 WERE INSTALLED UNDER THE COLUMBIA TURNPIKE OVERPASS.
2. LOCATIONS AND TOPOGRAPHY EAST OF CSX RAILROAD PROPERTY AND WEST OF AND INCLUDING SOUTH STREET, SURVEYED BY THEW ASSOCIATES PE-LS, PLLC (OCTOBER 2008). TWO NEW MONITORING WELLS, MW-20 & MW-21, AND TEN NEW INJECTION WELLS, IW-A2 THRU IW-A7 & IW-B2 THRU IW-B5, WERE SURVEYED ON JULY 2, 2010 BY THEW ASSOCIATES. REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND PROJECTED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (EAST ZONE). VERTICAL REFERENCE TO NGVD 1929. ASHLAND PROPERTY BOUNDARY ESTABLISHED BY THEW ASSOCIATES SURVEY AND DEED RESEARCH (OCTOBER 2008). OTHER PROPERTY LINES AND MAP FEATURES ARE FROM RENSSELAER COUNTY TAX MAPPING AND NEW YORK STATE CLEARING-HOUSE AERIAL PHOTOGRAPHY.
3. INJECTION WELL IW-A1 IS NOT BEING USED FOR INJECTION.

0 50' 100'

GRAPHIC SCALE

ASHLAND INC.
RENSSELAER, NEW YORK
CONSTRUCTION COMPLETION REPORT

FINAL SURVEYED IRZ LOCATIONS

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FIGURE 3

APPENDICES

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Appendix A

Photographic Logs

Selected Utility Clearance Photographic Log
March 29, 2010

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ASHLAND RENSSELAER SITE

Selected Utility Clearance Photographic Log – March 29, 2010

GPR at IW-A2

IW-A7

IW-A5

IW-B2

IW-A5

IW-B2

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ASHLAND RENSSELAER SITE

Selected Utility Clearance Photographic Log – March 29, 2010

IW-B3

MW-21

MW-21

IW-A6

MW-21

ARCADIS

ASHLAND RENSSELAER SITE

Selected Utility Clearance Photographic Log – March 29, 2010

IW-A6

MW-20

MW-20

New Locations at the north end (IW-B2 through IW-B5)

ASHLAND RENSSELAER SITE

Selected Utility Clearance Photographic Log – March 29, 2010

New IW-B2

New IW-B4

New IW-B3

New IW-B4

New IW-B3

New IW-B5

Test Pit Photographic Log
June 2010

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ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

TP-1A (near PZ-3 parallel to South Street)

TP-1A (near PZ-3)

TP-1A (near PZ-3)

TP-1B (looking east – 90° to TP-1A)

ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

TP-1B Concrete Block

TP-1B (east-west) near BMI-6

Concrete Debris from TP-1B

TP-2 looking east

ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

TP-2 (north-south) near PZ-1

TP-2 Red Flag Marks Concrete

Stepped out Concrete in TP-2

TP-2 Red Flag Marks Concrete

ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

TP-3 Concrete and Wood

TP-3 Concrete and Wood with Stepout

TP-3 Concrete and Wood with Stepout looking South

TP-3 Concrete on east (right side) and west no concrete

ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

TP-3 west wall with concrete on the right

TP-4 – No Concrete

TP-4 Wood and Concrete Wall

TP-5 both sides of concrete nearside and to excavator

ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

TP-5 Concrete Thickness

TP-6 Concrete

TP-6 East-West View with Concrete Shown

Approximate Area of Concrete Slab Looking South

ASHLAND RENSSELAER SITE

Test Pit Photographic Log – June 2010

Approximate Area of Concrete Slab Looking North

Red Flags Represent TPs

Selected Air Knife, Jack Hammering, and Hand Clearing
Photographic Log
April 1 - 6, 2010

ARCADIS

ASHLAND RENSSELAER SITE

Selected Air Knife, Jack Hammering, and Hand Clearing Photographic Log – April 1 - 6, 2010

Air Knifing at IW-A2

MW-20

IW-A2 Post Air Knifing

MW-20

ARCADIS

ASHLAND RENSSELAER SITE

Selected Air Knife, Jack Hammering, and Hand Clearing Photographic Log – April 1 - 6, 2010

Jack Hammering IW-A3

NYS OFT Manhole near MW-21 Location

NYS OFT Manhole near MW-21

Tripod Drilling at MW-20

IW-A5 Hand Cleared

Phase I Selected Well Installations and Concrete Obstruction Boundary Search
April 2 – 9, 2010

Phase II Selected Southern IRZ Well Installations
June 29 – July 2, 2010

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Drilling at IW-A7 Using ATV Rig

First attempt at IW-A6 Wood in 5 to 7' bgs Split Spoon Found below 1.5 ft of Concrete

Wood at IW-A6

Phase I - IW-A6 Drilling

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Drilling at IW-B2 with ATV Rig

IW-B4 Riser

IW-B2

Drilling IW-B5 with ATV Rig

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Phase II – New Location for IW-A6 Drilling in Background, Hand Clearing at New Location for IW-A5

IW-A4 Drilling

IW-A5 Well Construction

IW-A2 Drilling

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

IW-A3 Drilling

IW-B2

Phase 1 - IW-B2 Protective Casing

Northern IRZ IW-B2 Installed

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Northern IRZ IW-B4 Installed

IW-A7 Looking North

MW-21 Looking East

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Phase I Concrete Slab Investigation between IW-A6 and IW-A3

Hand Clearing of IW-A5 and IW-A6 Looking South
Hits Concrete at 3.5' bgs

IW-A5 Looking East, T-rod Marks Concrete Slab

Benchmark 6, MW-A1, and IW-A5 Looking South

Looking North from MW-A1 – T-rod in Foreground of Picture

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Looking South from MW-A1

IW-A5 Searching for Concrete Boundary via Hand Clearing. T-rod Marks Possible Western Edge

Possible Outside Concrete Boundary Hand Cleared in Foreground of Picture

Hand Clearing of IW-A6 Looking South

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

IW-A6 Looking North

IW-A5 and IW-A6 South Flagging Denotes Possible Concrete Boundary

IW-A6 Looking NW

IW-A5 and IW-A6 South Staking and Flagging Denotes Possible Concrete Boundary

IW-A5 and IW-A6 Looking North at Staking and Flagging of Possible Concrete Slab Boundaries

ASHLAND RENSSELAER SITE

Phase I Selected Well Installations and Concrete Obstruction Boundary Search (April 2 – 9, 2010)
Phase II Selected Southern IRZ Well Installations (June 29 – July 2, 2010)

Same as Above Looking West

IW-A5 Looking South at Marked Boundaries of Possible Concrete Slab Obstructing Drilling

Same as Above Looking Southwest at Possible Eastern Boundary of Concrete (nearest flag)

IW-A4 Looking South

Same as Above

General View Looking North – No Room to Move IRZ West to Avoid Concrete Obstruction

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Appendix B

Field Notes (Provided on CD)

Phase I Notes

ARCADIS
Infrastructure, environment, buildings

DAILY EVENTS LOG

Project Number:	Date of Activities:
OH003000.NY41	3/31/2010
Project Name:	Location of Project:
Ashland Distribution CO	Rensselaer, NY
ARCADIS Personnel Present:	Other Persons Present:
Kati e Bidwell	Parratt Wolff
Daily Task Assigned:	Weather: Light 3/31 - on/off Rain 46° Breeze
CMI Drilling	

Time:	Activities:
3/31/10 0920	KB onsite Prep For Parratt Wolff's arrival
0935	PW onsite (2 crew) H+S Meeting
10:00	Complete a walk through
	AFSCO Fence onsite
	Premier onsite
	City of Rensselaer onsite
	KB calls K Potter to give her an update
	She gave the okay to pump the water out of
	the tank pit area + the PW is in charge of
	the water. City of Rensselaer offsite
1040	Start pumping the tank pit
	Verizon offsite - gave the okay KB talks w/ premier
	KB Talks w/ K. Potter. I at MW-21 - its okay on his side,
	gives an update. gas Line ends Just N of the site
	by Columbia Street - near MW-17
1120	Start air knifing MW-20
	inside the tank water + sheen PID - 11

Footer on East side of site

Time:	Activities:
1140	Level 3 communications onsite
	PW completes Vac to 4' on MW-20
	Stop work + move over to the MW-21
	Columbia Street area
	OFT NYS flags are old - but they called in + told
	PW they had marked it
	Try to open the 36" manhole thats Just North of
	proposed MW-21 NEENAH Foundry WI - Full of
	water - interior locking Lid - covered - can't open
	PW makes some phone calls to the office - some
	more people will be coming. Level 3 comm. offsite
	gives the okay Verizon said if we are less then
	25' of their lines on Columbia Street area to
	call them. PW sets up on IW-A2
1220	Lunch
1240	Start Airknifing / Jack hammering at IW-A2
	Also clearing the path at IW-A7
1320	IW-A2 - concrete / sand - Brown, small boulders / water
1333	Start working on IW-A3
1410	end IW-A3 4.5' - (fallen in a little) Brown sand
	water - no boulders concrete 4-5" thick
1420	Set up on IW-A4 + start with the Jackhammer
1450	complete IW-A4 - Air Knifing
	water utility onsite + the NYS OFT onsite -
	on Columbia Street. PW stops work to talk
1500	w/ the NYS OFT

Time:	Activities:
	OFT (NYS) opens the manhole - Inside are fiber optic lines. OFT Remarks there underground utilities.
1510	KB talks w/ K Potter about IW-A3 + an unknown structure (Therm/GPR) KB said we completed that hole w/ no problems - okay Also discussed moving IW-B4 East/West instead of N/S. KB got the okay to move it on the other side of the tank pit wall - west
1540	PW empties the vac truck into drums will need to let the drums settle out before decanting them. Some soil/water spilled out cleaned up + put into the drum
1610	
1620	Set up on IW-A5
1630	More PW onsite 2 more crews / w / Rig - Hts meeting Start Air Knifing IW-A5. At about 2.5' down PW comes across a 1" PVC. Running NW/SE. KB calls K Potter to see if the GPR picked up anything + to get the okay to shift the location. Nothing on the GPR. PW starts cleaning up for the day. discuss the new location for IW-A5. Also - PW won't know until Thursday if they will have the material to drill on Friday. NO Stainless steel Screens / Risers as of 3/31. The only drilling PW can do is on the monitoring wells

OH003000.NY41 Ashland Distribution CO

Time:	Activities:
	KB talks w/ K Potter. She will be onsite on Thursday (to observe MW-21 drilling activities & to conduct an LPO.)
1720	PW offsite KB wraps up & Locks up the gates
	IW-A2 is ~ 38.5' from MW-15 (South)
1735	KB offsite
4/1/2010	0645 PW (4-man crew) & KB onsite
0700	Morning prep. H&S Meeting
	2-man crew on Tripod for MW-20
	2 man crew for hand clearing/Air Knife
0750	Complete boring at IW-A5 to 35' - Air Knife dark gray sand, some gravel, water (no readings) wood
0755	Start pounding in the 5' casing at MW-20
	Air Knife crew moves to IW-A6 (will go back to A6)
0820	Start MW-20 w/ the Split Spoons
0835	KB & K Potter talk on phone. She is on her way
	There is no Sump on the MW's. 10' Screen (6' of water) a little into the clay (1-2' of sand above screen)
	Air Knifing at IW-A6 (3.5')
1020	Start air knifing at MW-21
	KB & K Potter discussed going to 13'
1045	Complete air knife / hand clearing at MW-21
	Set up on IW-B5
	at MW-20 start pulling the casing & Setting

ARCADIS G&M

DAILY LOG

Well(s) _____ Project/No. Ashland / 30003000.MW Site Location Rensselaer

Prepared by KB

Date	Time	Description of Activities
4/1/10	1045	the casing / construct the well
	11:00	K. Potter onsite
	1130	Start cleaning up the tripod
		Still Air Knifinging / hand cleaning
	12:00	IW-B5 / Completed IW-B5
	1215	Lunch
		2- Stay onsite to Air Knife / hand clean
		2- PW offsite w/ KB + K. Potter
	1300	back onsite. Air knife crew finished
		IW-B4 + is now working on IW-B2
		Rig is set up on MW-21 K. Potter sees
		that the Location is on the border of the
		CSX property. K Potter Leaves a message for
		George + Decides we need to make the hole
		Air Knife Crew is emptying the vac. truck
	1505	Start air knifing the new LOCation For
		MW-21. Other 2-Crew Switch gear in trucks
	1515	Finished w/ the air knifing / backfill the old hole
	1540	Set up the Rig on MW-18, empty vac.
		truck Doug preps to Leave the site.
	1700	Start constructing the well - (3-man crew)
		Clean up for the Day

1730 K. Potter offsite

1800 PW + KB offsite

ARCADIS
Infrastructure, environment, facilities

Sample/Core Log

Boring/Well MW-20 Project/No. Ashland Distribution / OH003000.NY41

Site Location Rensselaer, New York

Drilling Started 4/1/2010 Drilling Completed 4/1/2010

Page 1 of

Total Depth Drilled 13 Feet Hole Diameter 4 inches Drilling Method Hollow Stem Auger / Tarpd

Length and Diameter of Coring Device 2" x 2'

Sampling Interval Continuous feet Type of Coring/Sampling Device Split Spoon

Drilling Contractor Parratt Wolff Mickey / Matt Drilling Fluid Used —

Prepared By KB

Sample/Core Depth (feet below land surface) From	To	Core Recovery (inches)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	PID (ppm)
0	4			Air Knife / hand clear Sandy, Silt, gravel dark gray odor	
5	7	8"	16.16.18.9	D.6 C/med Sand some F/gravel (R-A) + Brown Little Silt, Loose dark gray Sheen wet strong odor	14
7	9		8.9.13.5	6-8 Silt, Little C/ Sand + F/ gravel (R) Soft, dark gray, wet, Sheen odor	
7	9	18"	8.9.13.5	0.6 C/med Sand Some F/ gravel (R-SR) Little Silt, Very Loose dark gray Sheen, wet odor	98
				6-9 Clay, Silt Little Coarse Sand + F/ gravel (R-SA) med plastic wet Soft Sheen odor gray	
				9.12 C/med Sand + Some F/ gravel (R-SR) Loose, wet, dark gray, Sheen odors Trac. Silt	

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Sample/Core Log (Cont.d)

Boring/Well MW-20

Prepared by KB

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	PID (ppm)
7	9	18"	8 9 13 5	12-18 Clay some silt, Little F/ gravel (P-SR) trace C/ Sand gray to Light gray interbedded Moist to wet odor, sheen	
9	11	10"	26,76,5	0-3 Clay + silt some coarse sand + gravel (P-SR) Med stiff dark gray wet	10
				3-6 Clay Little silt + C/ sand, F/ gravel moist to wet, Soft med plastic dark gray	
				6-10 Clay Trace F/ gravel + Sand (R) gray - brown/green Lenses plastic, Soft Moist odor	
11	13	—	20,10,7,6	Slough	
				2" 10' 10 slot Screen 12-2 Screen	
				2" 2' Riser 12-1.5 Sand	
				1.5-0 Bentonite	
				Flush Mount	
				4 bags Sand	
				¼ bag of Bent	

ARCADIS
Infrastructure, environment, facilities

Sample/Core Log

Boring/Well MW-21 Project/No. Ashland Distribution / OH003000.NY41 Page 1 of 2

Site Location Rensselaer, New York Drilling Started 4/1/10 Drilling Completed 4/1/10

Total Depth Drilled 13 Feet Hole Diameter 6 inches Drilling Method Hollow Stem Auger

Length and Diameter of Coring Device 2" x 2' Type of Coring/Sampling Device Split Spoon

Sampling Interval Continuous feet Drilling Fluid Used —

Drilling Contractor ~~ZEBRA~~ Parratt Wolff mckey/matt Prepared By KB

Sample/Core Depth (feet below land surface) From	To	Core Recovery (inches)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	PID (ppm)
5	7	23"	0	0-3.5 Silt + clay Little F/ gravel (A-SA) + trace C/ Sand, Trace Roots Brown very Soft moist to wet	0.0
				3.5-16.5 Clay, Trace F/ sand at 3.5" Brown w/ gray interbedding damp med stiff	
				16.5-19 Clay, Some F/ sand + Silt Brown w/ gray interbedding soft wet	
				19-23 Clay Some Silt, Little gravel F/ (A-SA) damp Low dense Brown, Red/gray, interbedding	0.0
7	9	23"		0-3" Clay + Silt, Little F/gravel (A-SA) wet Soft Brown, gray inter-bedding	0.0

ARCADIS

Sample/Core Log (Cont.d)

Boring/Well MW-21

Page 2 of 2

Prepared by KB

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	PID (ppm)
7	9	23"		3-14" Clay, trace F/ gravel (R-A) little silt dense Brown gray/dark Brown interbedding wet	0.0
				14-18' Clay, some F/ sand + silt Brown + gray - SAA moist Low dens	
				18-23'. Silt, Little sand F/c, Little gravel F/ (A-SA) Little clay, dense blue green w/ dark brown/ Red interbedding, damp	0.0
9	11	18"		0-4 Clay w/ Little F/ sand + gravel patches - gray Little silt, Brown, Med dense trace roots dry	0.0
				4-18" Clay Trace Silt, Little F/ gravel + F/c sand moist to wet @ 16-in a F/c Sand Seam. Blue green Soft plastic	(R-A)
11	13	19"		0-6" Clay, Little Silt, Little F/g Sand + gravel + int-bedding, Brown, Gray moist	0.0
				6-14' Clay. Brown gray Soft	0.0
				16-19' Clay, Little Silt. F/ gravel + c/ Sand (A-SA) wet Low dense gray/Brown	

Bags of Sand
6
Bentonite

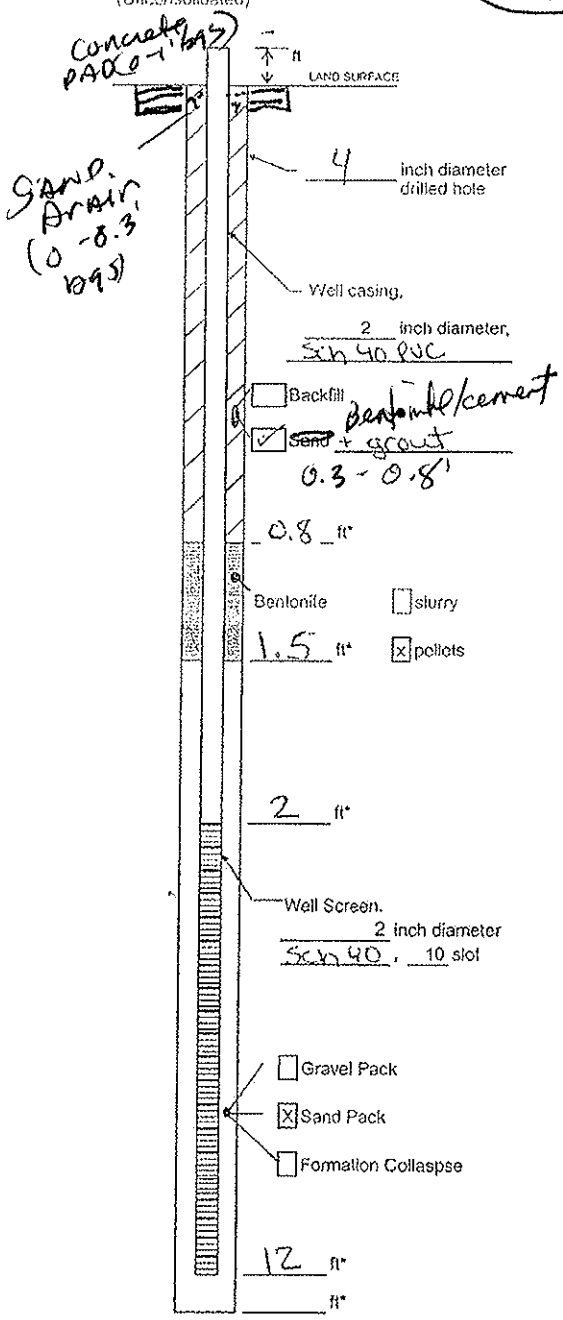
Screen - 3-13
Sand 13-12.5
Bentonite

ARCADIS G&M

Well Construction Log

(Unconsolidated)

UPDATED 9/23/10 by KVP



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

* Depth Below Land Surface

Project Ashland Distribution Well MW-20

Town/City Rensselaer

County _____ State NY

Permit No _____

Land-Surface Elevation and Datum:

_____ feet ☐ Surveyed ☐ Estimated

Installation Date(s) 4/1/2010

Drilling Method Hollow Stem Auger

Drilling Contractor Parrat Wolff

Drilling Fluid _____

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ gallons

Water Removed During Development _____ gallons

Static Depth to Water _____ feet below M.P.

Pumping Depth to Water _____ feet below M.P.

Pumping Duration _____ hours

Yield _____ gpm Date _____

Specific Capacity _____ gpm/ft

Well Purpose

Monitoring well

Remarks

Prepared by KB

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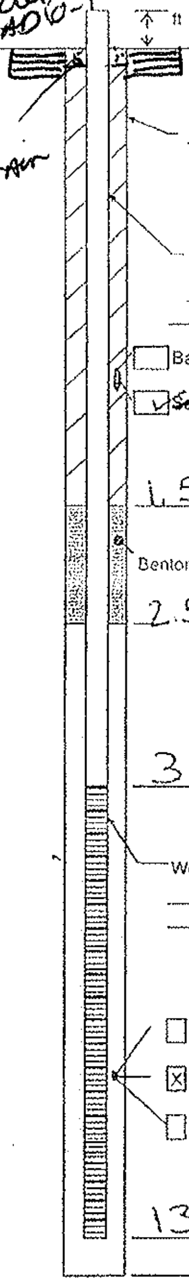
Updated 9/23/10 by KVP

ARCADIS G&M

Well Construction Log
(Unconsolidated)



Concrete PAD 0-1' bgs

ft LAND SURFACE

0-0.5' SAND DRAIN

6 inch diameter drilled hole

Well casing, 2 inch diameter, Sch 40 PVC

☐ Backfill

☑ ~~Sand~~ Bentonite/Cement grout 0.5-1.5' bgs

1.5 ft*

Bentonite ☐ slurry ☒ pellets

2.5 ft*

3 ft*

Well Screen, 2 inch diameter, 10 slot

☐ Gravel Pack

☒ Sand Pack

☐ Formation Collaspse

13 ft*

ft*

Measuring Point is Top of Well Casing Unless Otherwise Noted.

* Depth Below Land Surface

Project: Ashland Distribution Well: MW-21

Town/City: Rensselaer

County: State: NY

Permit No.

Land-Surface Elevation and Datum:

feet ☐ Surveyed ☐ Estimated

Installation Date(s): 4/1/10

Drilling Method: Hollow Stem Auger

Drilling Contractor: Parrat Wolff

Drilling Fluid:

Development Technique(s) and Date(s)

Fluid Loss During Drilling ______ gallons

Water Removed During Development ______ gallons

Static Depth to Water ______ feet below M.P.

Pumping Depth to Water ______ feet below M.P.

Pumping Duration ______ hours

Yield ______ gpm Date ______

Specific Capacity ______ gpm/ft

Well Purpose

Injection well - Monitoring well

Remarks

Prepared by: KB

G:\TECHNICL\FIELD LOGS\Well Construction (Unconsolidated).XLS- MW-47

Ashland - Rensselaer 4/2/10
OH003000.N441 Sun 80°F
Katie Bidwell - ARCADIS (Albany)
Passatt Wolff
Mickey Marshall
Mathew Casmic
Weylin Barraws
Doug Richmond (3/31 - 4/1)

Previous site visits:
3/22 KB + Bill Morrow Passatt Wolff
Mark out Locations for the CMI work
3/29 KB + Three associates - Ryan
Onsite 0830 - 730 Rain
GPR - utility Survey

3/31 - 4/1 - Start hand clearing
Locations 10 IW / 2 MW
MW-20 MW-21 drilled
Vac + Tripod + Rig onsite
4 - Passatt Wolff Crew.

4/2 - (Current)
0645 KB onsite prep for the day.
0655 PW onsite
(3 man Crew)

Ashland - Rensselaer 4/2/10
OH003000.N441 KB

H+S Meeting. PW Preps to air Knife IW-B2 They do not have the material needed to Finish the wells MW-20 / MW-21
2 man Crew
0715 - 1 (M. Marshall) OFFSite to get more drums
Start air Knifing IW-B2

0735 Complete Air Knifing at IW-B2
Set up on IW-B3. Clear Some Trees.
KB Labels the drums from 4/1 (10 drums all together)
0810 Complete IW-B3 w/ the Air Knife. Last hole to be closed
0830 - Air Knife Crew waits for the drums empty out Vac truck
0900 M. Marshall back onsite w/ the drums
Continue to decon the Vac Truck
4 New drums

KB

Ashland - Rensselaer 4/2/10
OH003000 N441

10:00 PW Completes decanning the vac track + loading up equip / clearing up. KB + PW discuss the work planned for next week + the Rig / Tripod possibilities.
PW calls their office. Take measurements by Iw B2
KB calls K Potter about taking the Fence down at Iw-B2 - B4 to move the Rig around.
It should be okay as long as we put it back + don't drive on the CSX access Rd.

11:00 PW offsite
Leave the Rig onsite.
Will start around 9 AM - Monday

AFSCO Fence onsite. KB + Mike Rosalik discuss his work for next week.
As of Right now there is not going to be a gate by Iw A6 + A7 - when they replace

Ashland - Rensselaer 4/2/10

the Fence. KB will inform K. Potter this may interfer w/ the injections at Iw A7.

KB put caution tape over the oseal by Iw-A7. All holes have cones over them

11:30 KB Locks up + is offsite
(11 drums total)

AFSCO Fence
518 783 0395
Latham NY

Katie B. Duell

18

Ashland - Rensselaer 4/5/2010
KB OH003000 N441 Part Sun 70°F windy

0905 Katie Bidwell (ALBany) ARCADIS onsite. Morning prep
Calibrate the MultiRae Plus
0950 PW onsite 3 man crew
2 trucks
* Mickey Marshall, Matt Cosmic
+ Mike Wilson
Start unloading a Track mounted Geoprobe 7822DT
KB checks in w/ K Potter Discuss the fence Margate @ Iw A7 + taking it down at Iw B2 4 Locations Also mark out the pipe at Iw A5
1025 Set Geoprobe up at Iw B2
Town of Rensselaer onsite to mark out the water Lines for ASCO Fence
1050 H+S Meeting. PW is unfamiliar w/ this Rig.
11:10 Start drilling @ Iw B2 w/ the Geoprobe 7822DT
1140 KB Reaches 13' on Iw B2 - call K. Potter. K. Potter talks w/ M marshall on the well construction.
1200

KB

Ashland Rensselaer 4/5/10
OH003000 N441
PW puts Sump + Screen + Riser together
M. Marshall goes over the construction w/ KB.
1220 Lunch KB+KP discuss well development Starting on 4/6
1310 PW back onsite
2- Start pulling casing + well construction
1- Sets up decon pad
1415 Complete well construction
Start decanning
1430 move the geoprobe to the Second boring Iw-B4 Start drilling @ 1440
1515 Complete Iw-B4 to 13'. KB calls KP to discuss the well construction which will be the same as Iw-B2
1520 Start well construction + pulling the Casing.
1635 Finish well construction. had to push well down w/ hammer to 14 + scrape out Some water - then add the rest of the Sand + Bent chips
1645 Set Rig up on the next boring for tom. Iw-B3. Start cleaning up + ~~load~~ unloading equip
1715 PW + KB offsite

Katie Bidwell

19

KB Ashland-Rensselaer 4/5/10

OH003000 N441

IW B2

Depth	Time	Recovery	PID	ND
0-5	~~1113~~	~~12"~~	hand cleared	0
5-7	1113	12"	0.0	2
7-9	1115	20"	0.0	2
9-11	1130	22"	0.0	3
11-13	1135	19	0.0	4 KB

Geoprobe 7822DT HSA Split Spoon

Stratigraphic Description

5-7' 0-2" F/c sand + F/ gravel (R-A) wet dark gray Loose
2"-7" Clay + Silt some F/c Sand + Trace F/ gravel gray wet very soft
7"-12" F/med Sand some Silt wet, gray Loose

7-9 0-13 0.7 F/m Sand + Silt
7-13 F/c Sand +Silt some F/ gravel (R-Sp) Little clay gray wet Loose

KB 4/5/10

Ashland-Rensselaer

7-9 13-20 Silt + clay Brown gray lenses med stiff dry

9-11 0-4 Silt + clay Brown wet trace gray soft
4-22 Clay little Silt gray trace wet to very moist 13"-22 very soft

11-13 0-22 SAA moist to wet @ 9-10" moist to wet at the bottom Very soft

PW will drill down to 12' w/ auger
pound the Spoon to 14'
Place the Sump from 14-12
(only the split spoon annular space) (1.5")
Screen 12-2'
Sand 1/2 foot above the Screen

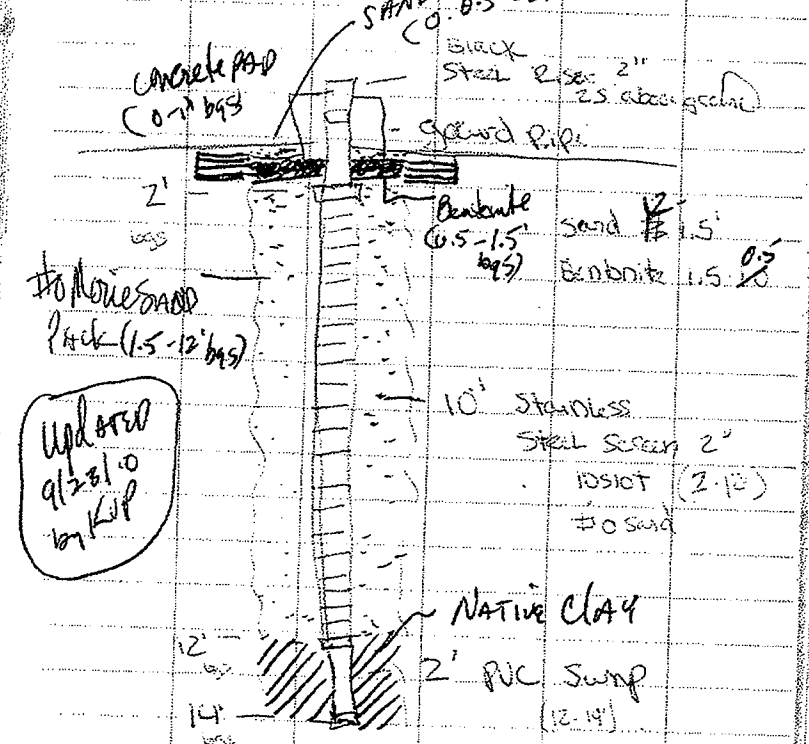
50

KB OHD03000N441 Ashland 4/5/10

IW-B2 well Construction

5 bags of #0 Sand

½ bag Bentonite chips



Updated 9/28/10 by KLP

KB Ashland - Rensselaer 4/5/10

OHD03000N441

~~IW-B3~~ IW-B4 (KB)

geoprobe 7822DT D. Marshall (PW)

HSA Split Spoon

Depth	Time	Recovery	PID	NO
0-5	Hard	cleared		
5-7	1448	22"	0.0	1
7-9	1505	18	0.0	2
9-11	1510	NR	NR	3
11-13	1514	18	0.0	4

Stratigraphic Description

5-7 0-4' F/c Sand + Some F/gravel (R-SR) Some Silt Loose wet Brown to gray

4-9" Silt with Clay to Some with C/ Sand trace gravel (R-SR) Gray SOFT moist

~~7-12~~

81 OH0003000N441

Ashland - Rensselaer 4/5/2010

KB 9-22' 9-12 Silty Clay trace f/ gravel Med Stiff dark gray to Light gray + Brown damp
12-14 Silt f/ Sand Lots wet Black
14-22 Clay & Silt Brown med dense dry some dark gray

7-9' 0-18" SAA trace gray Silt patches

9-11' NO Recovery

11-13' 0-18" Clay Little Silt moist to wet at 14" gray soft

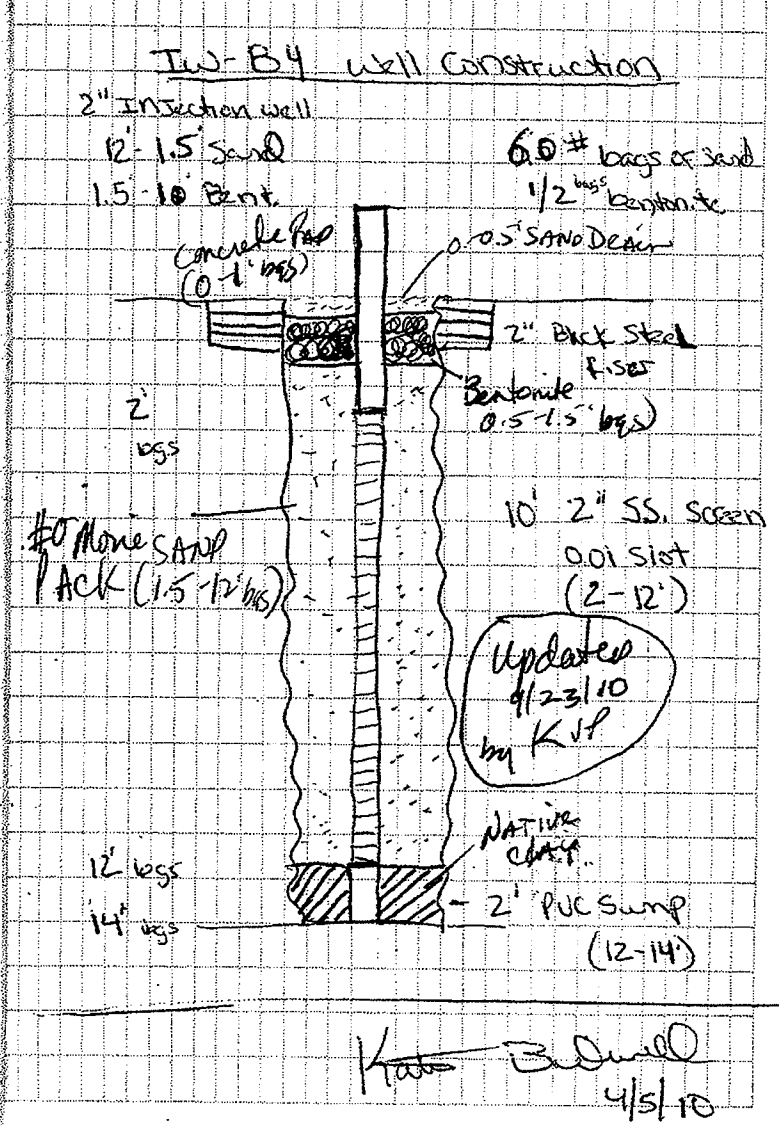
Same well construction as IW-B2 PW will auger to 12'. Use Split Spoon to 14' + Set the well

* when pulling augers up + out the 2" riser/screen came up ~4' (should be 1.2' AGS) - PW used hammer to push down to 14'

4/5/10

Ashland - Rensselaer OH0003000N441

IW-B4 well Construction



Kate Bidwell 4/5/10

4/6/10

KB

Ashland - Rensselaer
OH003000 N441 Sun 50 - Overcast
Rain - 60's

0705 KB + PW (3 man crew) onsite
H+S Meeting. Morning prep
KB calibrates the MultiRae Plus -
PW is having trouble starting the
Geoprobe 7822DT - needed to jump start
the battery - using the PW truck battery
0805 - Geoprobe 7822DT is running
0813 Start drilling IW-B3
Light Rain Starts
0850 Complete IW-B3 to 13' KB calls
K. Potter + discusses the boring. The well
construction will be the same as the
previous wells (IW-B2, B4)
0900 Start well construction (2-)
+ PW offsite to get water KB calibrates Quanta
0945 Complete well construction on IW-B3
Move Rig to IW-~~B7~~ A7 Load up equip
+ transfer to the other side of IW-
drilling
1025 MC - back onsite w/ the rig + water
He preps to leave to meet PW in
Herkimer to pick up the Sand pipes +
the development equip

4/6/10

Ashland - Rensselaer - OH003000N441

1040 Start drilling at IW-A7

1140 Complete 17' on IW-A7. KB calls
K. Potter + discusses the boring. Will set
the screen at the bottom of the last
Sand seam ~14.5'
PW set auger / Rig before Lunch

1205 - Lunch
1230 PW back onsite Load up the Sand
+ start well construction.
1330 Complete well construction. Start
Clean up to move to the next well
1350 MC back onsite w/ Sand pipe + dev. equip
KB grabs WL + DTB on MW-20 / MW-21
1445 Start drilling IW-A6
4" auger ~~is~~ will not go down the 5' - this
hole was only cleared to 3.5' due to
concrete. ~~We~~ Will use the truck Rig
MC will set up the ~~development~~ @ MW-21
Set up on IW-A4 w/ Geoprobe 7822DT
Same issue @ about 6.5'. PW calls their
1545 office. KB Calls K. Potter to inform her
K. Potter is going to call them.

Cont on page 86

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CHOO3000NY41

IW-B3

Depth	Time	Recovery	PID	NO
0-5	Hand cleared			
5-7	0835	12"	0.0	1
7-9	0827	24"	0.0	2
9-11	0841	22	0.0	3
11-13	0850	16"	0.0	4

Geoprobe 7822DT m. massinell (PO)
HSA, Split Spoon

Stratigraphic Description

5-7 0-5" F/C Sand + Silt, Little f/ med gravel (R-SR) Trace clay at 5" Brown/gray wet Loose/Soft
5-12" Silty Clay Brown-gray Lenses Med Stiff wet to moist.

7-9 0-14 Silt, Some F/C Sand + gravel F/ (R-A) wet gray Soft-very
14-24 Clay Little Silt Brown gray lenses wet to dry (17-24") med Stiff

84 4/6/10

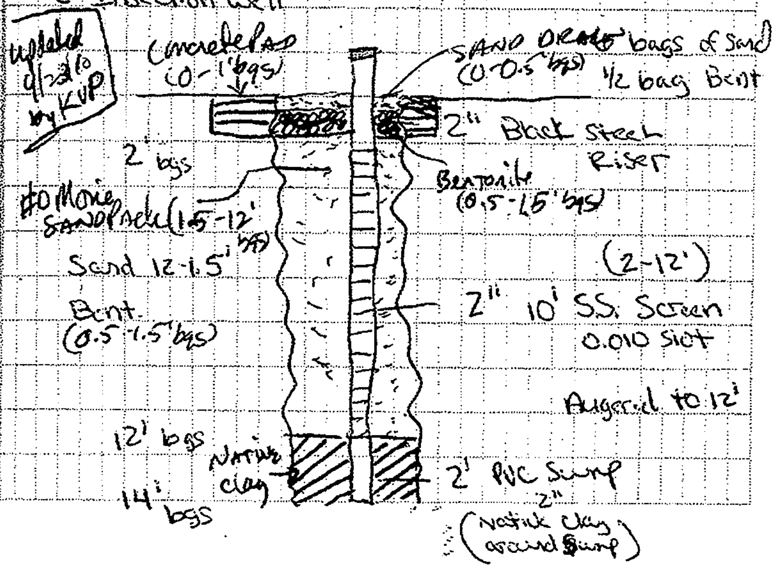
Ashland Rensselaer CHOO3000NY41

9-11 0-2 Silt, Some F/C Sand + Trace F/ gravel (R-SR) wet very Soft gray Brown
2-4" SAA 7-9' (14-24) w/ Little gray Coarse Sand wet
4"-22 Clay Little Silt, Soft wet gray

11-13" Clay Little silt, + Little F/C 0-16 Sand. very Soft wet gray

IW-B3 Well construction

2" Injection Well



84

KB Ashland - Rensselaer 4/6/10

OH0003000N441

IW-A7

Depth	Time	Recovery	PID	ND
5-7	1048	19"	0.0	1
7-9	1053	22"	0.0	2
9-11	1100	17"	0.0	3
11-13	1110	19"	0.0	4
13-15	1125	24"	7-10.8	5
15-17	1138	24	11.4	6

geoprobe 7822DT M. Marshall (RW)

HSA, Split Spoon

Stratigraphic Description

5-7' 0-3" Silt + F/C Sand Little F/ gravel (R-A) dark Brown Loose moist

3-19" Silty Clay Brown - Little gray med dense damp to very moist @ 8.5" back to damp

7-9 0-3" Silt + F/C Sand Some clay + F/med gravel Loose dark Brown wet

KB Ashland - Rensselaer 4/6/10

7-9 OH0003000N441

3-12" Clay Little Silt Brown gray - intermittenly med dense damp

12-22" Clay Little Silt gray Less dense than above wet at 16" - then moist to 22"

9-11' 0-2" Silt, some clay, Some F/C Sand Soft to Loose Brown wet

2"-17" Clay Little Silt Brown med dense moist to damp

11-13 0-10" Clay Little Silt, Brown - Little gray moist Soft dark gray

F/med Sand Seam @ 6" wet

F/ Sand seam @ 9" moist (silt too)

10-14" F/med Sand + Silt trace F/ gravel (R) Brown wet Loose

14-19" Clay Little Silt Stiff Brown Little gray/ Lt Brown damp

13-15 0-18" F/C sand Little Silt + F/ gravel (R-SR) Loose wet Brown to gray at 14" (a Little clay at 0-2)

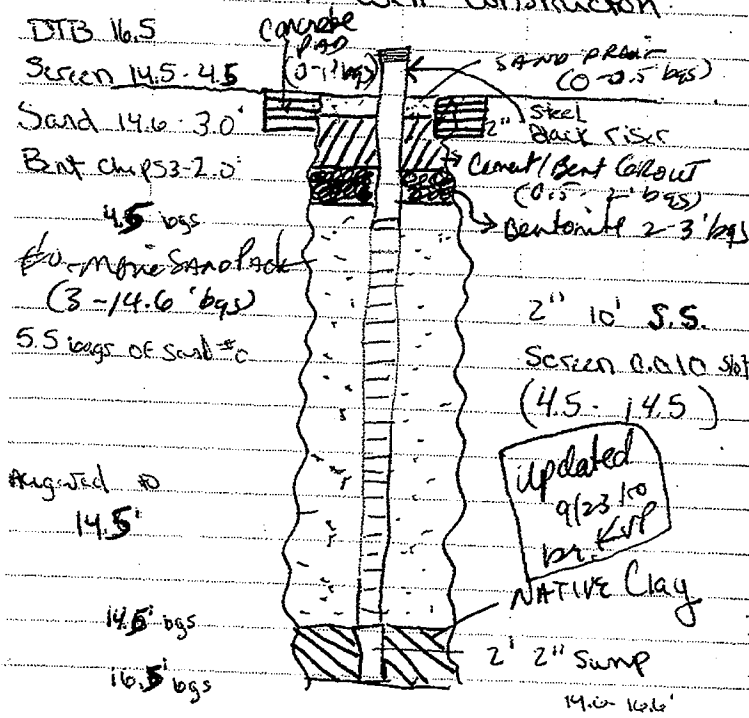
KB 85 Ashland. Rensselaer 4/6/10

IW-A7 DTW ~ 7-7.5'

13-15' 18-24" Clay Little Silt
Lt Brn f/c Sand at 18-20' Gray
Brown 20-24" wet soft

15-17' 0-22" Clay Little Silt
Brown 0-4" gray 4-22"
Soft to very soft wet

IW-A7 well construction



updated 9/23/10 by KVP

KB Ashland - Rensselaer - 0100300 N441 4/6/10

IW-A4

Depth	Time	Recovery	PID	NO
0-5	hand	Cleaning	—	—
5-7	1600	16"	0.0	1
7-9				
9-11				

Stratigraphic Description

5-16.5' Sand, gravel + Silt
gravel- F/ Large (R-A)
Brown 0-3" dark gray 3"-8" Light Brown
8-16' wet to moist Loose

hit Concrete - May need to Re-Locate the hole
Stopped drilling

OH003000 N441

8x AshLand - Rensselaer 4/6/10

PW Sets the Truck Rig on IW-A4

1600 + starts drilling

PW gets a phone - their office says to stop drilling.

KB is by MW-21 collecting ducklop. Readings.

- After talking w/ K. Potter + PW the new plan is to set up on IW-B5. PW will move IW-A5, A6 2.5' to the East (to stay in the GPR grid) They will hand dig a Rod to go past the 3.5' mark to see if the Concrete ends. IF so Arcadis + PW will need to Air Knife to 5.0',

M.C (PW) has Surged MW-20 + now is Clearing up at MW-21. + will pump

1700 MW-20 with a whale pump.

MW-21 - Runs dry Still brown + Very turbid ~9.25 gallons

MW-20 does not Run dry dark gray to Light gray ~16.0 gallons

PW Sets the Rig up on IW-B5 for Wednesday. Clean up. Put the battery back in the truck (charged geoprobe)

1830 PW + KB offsite - KB calls K. Potter

AshLand - Rensselaer 4/7/10

EB OH003000N441 Sun 80's

0705 KB + 1 PW onsite (Mike Wilson)

0720 +2 other PW onsite (Mikey Marshall, Matt Cornell)

Health + Safety Meeting

KB Calibrates the MultiRae + the turbidity meter (Hnu environmental)

2 man Crew on IW-B5 w/ the geoprobe 7822DT

1 - PW works on ~~installing the guard pipes~~ Cement pads + Clean up cuttings KB

0750 KB + K. Potter discuss the hand clearing + the CSX property line

0845 complete boring to 17' on IW-B5

KB calls K Potter to discuss the well construction (clay at 14.4"). K Potter talks w/ PW driller M. Marshall about the well construction the void (5-9') + the hand Clearing at the Southern end.

0910 Mike offsite to buy a part for the Rig. Matt - hand digging IW-A5

0955) Start well construction

Mike back onsite - Fix geoprobe (battery issue

0935 KB calibrates the Quanta

KB Ashland - Rensselaer 4/7/10

10:00 - Matt Reaches Concrete ~3.5' bgs on IW-A5 eastern edge of the GPR grid. KB calls K. Potter + decide to hand dig on the eastern edge of IW-A6

1040 Complete well construction will install the gaurd pipe

11:00 M. Marshall offsite to pick up drums M. Wilson start working on the gaurd pipes - they need to be cut down so the riser is above. M Carnie starts deconning - he hit concrete on IW-A6 also

1135 KB talks w/ K Potter the plan is to drill through the concrete of 1 of the locations - grab + spoon + we will reevaluate

1145 M. Marshall back onsite w/ the drums augers are deconned - Load onto the Rig

1200 Set Rig up on IW-A6 (wettest location - dry day)

1215 Start drilling at IW-A6 (2) 1- cement pads

1245 auger is down 5' pull it up to clean it out - something is jammed in pretty good - use spoon rods to work it free

1255 KB + K. Potter talk KB gives update

Ashland Rensselaer 4/7/10

KB 0H003000NY41

1315 M. Marshall calls K Potter. Drilled to 7'. The 5-7' core sample had 15" of wood. (Standing upright based on grain dir.) Will attempt to drill in the new hand dug hole 2' to the east.

1320 RW offsite for Lunch

1350 RW back onsite

1400 RW sets up on the boring to the east of the original IW-A6 (2) 1- goes to fill up the water tank at Pratt + Sons

1415 Start drilling at IW-A6 (#2)

1430 Water back onsite Prep geoprobe to go off site tonight

1500 Reached 5' through concrete - pull auger to clean out

1530 down to 5.5' Still in concrete

1545 RW grabs a split spoon to 7' - Still in concrete ~3-7'. will move to IW-A5. Might be an old bridge?

1605 M Wilson offsite to Syracuse w/ the geoprobe 7822DT.

Cont on Pg 90

KB

Ashland - Rensselaer 4/7/10
OH0003000NY41

IW-B5

Depth	Time	Recovery	PID	NO
0-5	Hand	Cleared		—
5-7	0755	NR	NR	1
7-9	0757	NR	NR	2
9-11	0810	21.0	0.0	3
11-13	0815	22	0.0	4
13-15	0835	24	0.0	5
15-17	842	16"	0.0	6

geoprobe 7822DT
HSA, Split Spoon (M. Marshall)

Stratigraphic Description

5-7 NR - void

7-9 NR - void

9-11 0-3" F/c Sand + Silt, Little F/ gravel (R-A) Little Clay Brown wet Loose
3-11" Clay Little Silt, Stiff Dk gray Little Brown wet

11-17 F/m Sand Little Silt Trace F/ gravel (R) Loose wet Brown

Ashland Rensselaer 4/7/10
OH0003000NY41 KB

9-11 17" - 21 Clay Little Silt Brown - Little gray Stiff Moist

11-13 0-5" SAA Clay Little Silt - wet
5" - 7.5" Sand F/C, Some Silt Trace F/ gravel (R) Loose, Brown, wet
7.5" - 24 Clay Little Silt Brown - Little gray Stiff Moist to wet. Trace gravel at 20-22" F/(R).
21-22. F/C Sand + Silt trace F/ gravel (R) Loose wet Brown

13-15 0-10" Clay Some Silt Trace F/C sand at 0-1". Brown - Little gray dense, wet
10-16" F/Med Sand Trace Coarse gray Loose wet
16-24" Clay Little Silt gray wet Very Soft

15-17 0-16" Clay Some Silt gray wet Very Soft

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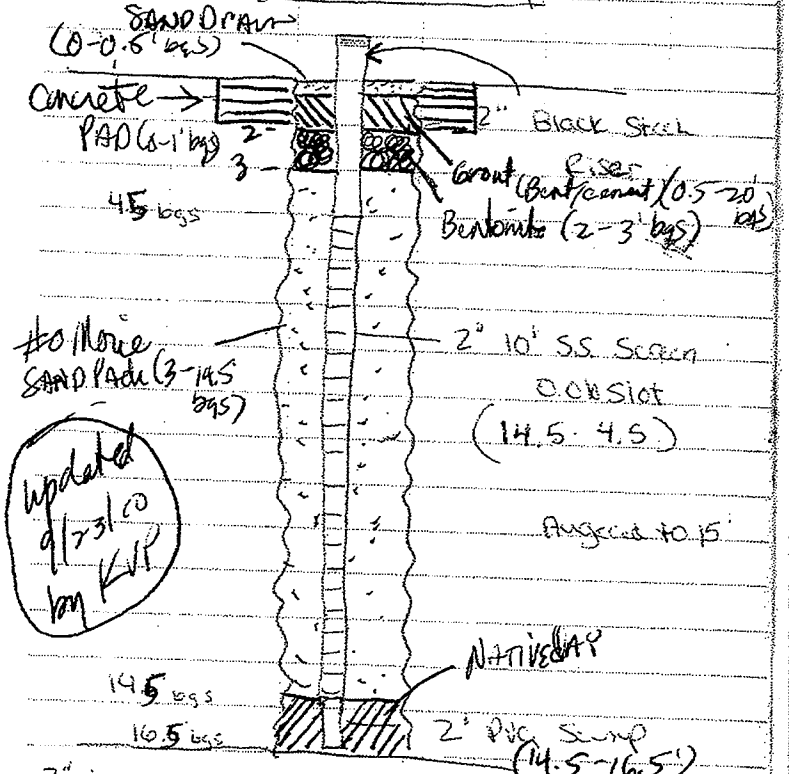
KB Ashland - Rensselaer 4/7/10

OH003000441

IW-B5

Well Construction



updated 9/7/10 by KB

2" Injection Well

Screen 14.5 - 4.5'

Sump 16.5-14.5

Sand 14.5-3.0

Bentonite 3.-2.0

bags of Sand #0 5.5

bags of Bentonite 1

There was no issue w/ the Sand + the Void

Ashland Rensselaer 4/07/10

OH003000441

IW-A6

0-3.0 handcleared

3.0-5.0 concrete

5-7 15" wood

IW-A6 (#2) eastern edge of grid center

0-3 hand cleared

3-7 Concrete

Pulled augers - abandoned area for the time being

IW-A5

0-3 hand cleared

3.5-5.5 Concrete augers

5.5-~7 not sure if its slough of pulverized stone/concrete or bot again

KB

OH003000NY41

1605 Start drilling at IW-A5
M. Marshall on Rig. M. Carnie working on cement pad for IW-A7 - (clearing the area for the tube - no cement on any yet

1640 Reached 5' w/ the auger
KB + M. Marshall talk w/ K. Potter
More concrete in IW-A6 ~ 7'+
PW starts hand digging the far

1730 west side - + will hand dig to the east side - in attempt to locate the edge of the concrete slab

1815 Locate western edge of the concrete slab. KB calls K. Potter
w/in a foot to the east of the grid would need to go outside the grid to drill by 6"~1'. Could clear the slab on the west side of IW-A6. But IW-A4-A2 might cross over CSX property by a little bit. 1.5' + 1.9' of room. But the geoprobe was taken offsite today
PW - Cleans up

1900 - Lock up - OFFSite

Katie [signature]

OH003000NY41 KB

partly cloudy 60's

0710 KB onsite. PW (2 man crew) already onsite. H+S meeting. KB calibrates the MultiRae plus
PW starts hand digging ~20' to the East of the western edge of the concrete.

0745 AFSCO Fence onsite
Delta onsite - H+S meeting

0820 KB calls K. Potter. K. Potter talks w/ Mickey. PW will work on development + the cement pads.
KB collects water levels + depths to bottoms on the newly installed wells

Well	DTW (bgs)	DTB	
IWB2	1.99	14.22	Silty
IW-B3	1.36	14.24	
IWB4	1.68	14.25	very silty
IW-B5	6.02	17.05	
IW-A7	5.31	16.76	very silty
MW 21	8.72	13.25	
MW 20	2.52	12.30	

PW takes a break from the pads

91 Ashland - Rensselaer 4/8/10
KB OH003000N441

Sun 70°

1045 KB talks w/ K Potter. They decided to wrap things up here today w/ the cement pads + development We will need to come back with an excavator to find the limits of the concrete, GPR + then figure out the next step.

KB + PW develop + work on cement pads

1200 - Lunch

1230 PW back onsite

KB calls K Potter w/ questions on Air Knife holes, drums/development, clean up + J plugs

1330 KB + K Potter discuss filling in the open holes. use clean soil, sand, and or Bentonite. Take pics, sketch, + drum Inventory.

1430 PW completes the cement pads

PW start filling in the holes

water break

1509 KB works on well development takes photos + draws a sketch

KB

Ashland - Rensselaer OH003000N441 4/8/10

of the IW A5 + A6 area everything is staked + flagged PW helps locate where the concrete slab ends on the East, West + South ends - This is just a guess.

PW continues to clean up mark all the drums to the staging area

1700 PW offsite.

KB completes the sketch + pics

KB stops at IW-B4 1 more time + collects readings. KB completes clean up, locks up + calls TP K Potter.

Kate Bidwell

92

KB

Ashland - Rensselaer 4/9/10
OH003000 N441

Light Rain 40's

0650 KB onsite
Prep for morning activities.

0710 PW onsite H+S meeting
PW- decons augers + sets up on IW-B5, B4 for development
KB + PW develop IW-B4 + B5. Then move to IW-A7.
PW- packs up. Get all the drums in order. Take down the decon pad.
AFSCO Fence onsite
KB checks DTB on wells from yesterday.
Drums are all accounted for Labeled + Taped.
Everything is cleared up + Wells are Locked.

1200 PW offsite
AFSCO Fence offsite
KB calls K. Potter
1215 KB offsite

KB

Ashland Rensselaer 4/9/10
OH003000 N441
- Turbidity meter + MultiRae Plus are shipped back

21 Drums
12- Soil cuttings
8 Decon / Develop
1 Decon Pad, PPE

Development INFO
Logs are Separate
General notes
Quanta Water Quality meter (Arcadis)
MW-20
Developed on 4/6/2010
Surge Block / Whale Pump
DTW 2.35 TOC PVC Flush mount
DTB 11.70
10 Volumes = 15 gallons
Purged 16 gallons
dark gray to Light Gray (500 NTU)

ORP	DO	Turbidity	Sp.Cond	PH	Temp - 16gal
-58	1.18	900	0.948	6.32	9.95

good producer

KB

93 Ashland - Rensselaer 4/9/10
OH 003000 N441

MW-21
Developed on 4/6/2010
DTW 9.58 T of PVC
DTB 14.95 Surge block whale pump
10 volumes = 8.60 gallons
purged 9.25 gallons
Brown - would run dry

ORP	DO	Turb	Sp cond	PH	Temp
82	6.13	>1100	1.343	6.59	11.12

IW-B2
Developed on 4/8/2010
DTW 1.99 bgs Stick up ~1.70' ags
DTB 14.22
10 Volumes = 19.56 gallons
purged 37 gallons
gray Silty - Cloudy gray
Surge Block, whale pump

ORP	DO	Turb	Sp cond	PH	Temp
-52	2.98	>1100	2.30	6.32	10.74

@ 34 gallons

KB

Ashland Rensselaer 4/9/2010
OH 003000 N441

IW-B3
Developed on 4/8/2010
DTW 1.36 bgs Stick up ~1.70' ags
DTB 14.24 Surge Block / whale pump
10 Volumes = 20.60 gallons
purged 34 gallons
Silty dark Brown / gray

ORP	DO	Turb	Sp cond	PH	Temp
-37	3.82	539	1.71	6.70	16.31

IW-B4
Developed on 4/8/2010
DTW 1.68 bgs Stick up ~1.71' ags
DTB 14.25 Surge Block / whale pump
10 Volumes = 20.11 gallons
purged 27 gallons

ORP	DO	Turb	Sp cond	PH	Temp	
-43	3.13	207	2.13	6.31	8.97	27 gal

Black + Silty / gray Cloudy Brown / gray

KB

94 Ashland Rensselaer 4/9/10
OH0003000 N441

IW-B5

Developed on 4/9/2010
DTW 6.02 bgs Stick up 2.20' ags
DTB 17.05 Surge Block / whale pump
10 Volumes 17.64 gallons
Purged 22 gallons
Thick dark Brown, Light Brown
Cloudy Brown

ORP	DO	Turb	Sp con	PH	Temp	22 gal
-28	1.44	145	4.91	5.96	907	

IW-A7

Developed on 4/9/2010
DTW 5.31 bgs Stick up ~2.40' ags
DTB 16.76 Surge Block / whale pump
10 Volumes = 18.32 gallons
Purged 40 gallons
Thick Brown
Recharges Quickly

ORP	DO	Turb	Spcond	PH	Temp
-30	2.66	>1100	1.86	6.70	8.35

40 gallons

Katie Bidwell

KB

Ashland Rensselaer 5/17/10
OH0003000 N441

0850 Katie Bidwell + [redacted] Ryan w/ Drew Associates onsite H+S Meeting. Walk through the 2 areas that need the GPR work Conducted
Ryan flags out the Location boundaries - (Grids)

1100 gets the GPR out + together + Ready to go
1105 KB offsite
KB Checks in w/ Ryan. He has completed the 1st section + is now working on the second
KB picks up the cooler From Test America
KB back onsite
Ryan is completing Section #2 Checks the underground electrical Line + then Surveys a couple of points In orange, white + the few idwe flags along the Fence Line mark out the new GPR areas Along with

ARCADIS

Document Control Number:TGM - OHOO3000.NY41
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland distribution Co		Project Location: Rensselaer
Date: 3/31/10 Time:	Conducted by: Katie Bidwell	Signature/Title: Katie B. Bidwell / Scill
Client: Ashland dist. Co	Client Contact:	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 hand / Vac digging to
2 4 ft - (utility clearance)
3
4
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :** ☐ Topics from Corp H&S to cover?

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Any Stop Work Interventions yesterday?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ If deviations, notify PM & client
☐ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ All equipment checked & OK?
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L **(M)** H) — slips trips, Falls	☑ Motion (i.e., traffic, moving water) **(L)** M H) — Vacuum	☑ Mechanical (i.e., augers, motors) **(L)** M H) — Vacuum
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) **(L)** M H) — Rain
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☑ Sound (i.e., machinery, generators) **(L)** M H) — Vacuum	☑ Personal (i.e. alone, night, not fit) **(L)** M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

[x] Elimination	[ ] Substitution	[ ] Isolation
[x] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[x] General PPE Usage	[x] Hearing Conservation	[ ] Respiratory Protection
[x] Personal Hygiene	[ ] Exposure Guidelines	[x] Decon Procedures
[x] Emergency Action Plan (EAP)	[ ] Fall Protection	[x] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
[ ]	[ ]	[ ] Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign In Time	Initial & Sign out Time	I have read and understand the HASP
[illegible] - Parratt Wolff [signature]	5:30 [initials]	5:30	[initials]
Weylin Barrows Parratt-Wolff [signature]	9:30 WB		WB
Mickey Marshall PARRATT WOLFF [signature]	4:30	5:00	M.M
Matthew Carnie Parratt Wolff [signature]	4:30	5:00	MC

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

[illegible] OPW
In Out

[illegible] - Verizon
In Out

William J. Carter
In Out

Bill James Russo [illegible]
In Out

I will **STOP** the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB**, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today: ________
- [ ] Incidents that occurred today: ________
- [ ] Any Stop Work interventions today? ________
- [ ] Corrective/Preventive Actions needed for future work: ________
- [ ] Any other H&S issues: ________

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OH003000.0041
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland Distribution CO			Project Location: Rensselaer
Date: 4/1/2010	Time: 0700	Conducted by: Kate Bidwell	Signature/Title: Kate B. Dwell / Scill
Client: Ashland		Client Contact:	Subcontractor companies:

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Air Knife / Jack Hammer
2 Drilling
3
4
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☐ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) Slips trips Falls	☐ Motion (i.e., traffic, moving water) (L M H)	☑ Mechanical (i.e., augers, motors) (L (M) H) Rig, Vac
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☐ Environment (i.e., heat, cold, ice) (L M H)
☑ Chemical (i.e., fuel, acid, paint) ((L) M H) Fuel	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) ((L) M H) Sun
☑ Sound (i.e., machinery, generators) ((L) M H) Rig, Vac,	☑ Personal (i.e. alone, night, not fit) ((L) M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - *(See statements below)*
- [x] Elimination
- [x] Engineering controls
- [x] General PPE Usage
- [x] Personal Hygiene
- [x] Emergency Action Plan (EAP)
- [ ] JLA to be developed/used *(specify)*

- [ ] Substitution
- [ ] Administrative controls
- [x] Hearing Conservation
- [ ] Exposure Guidelines
- [ ] Fall Protection
- [x] LPO conducted *(specify job/JLA)*

- [ ] Isolation
- [ ] Monitoring
- [ ] Respiratory Protection
- [x] Decon Procedures
- [ ] Work Zones/Site Control
- [ ] Traffic Control
- [ ] Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Matthew Carnie / Parratt Wolff / Matthew Carnie	7:00		MC
Doug Ricard / " / Doug Ricard	7:00		DR
Weylin Barrows / Parratt Wolff / Weylin Barrows	7:00		WB
Mickey Marshall / PARRATT WOLFF / Mickey Marshall	7:00		MM
Katherine Pothier CARLSON / Katherine Pothier	KVP 11		KVP

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today:
- [ ] Incidents that occurred today:
- [ ] Any Stop Work Interventions today?
- [ ] Corrective/Preventive Actions needed for future work:
- [ ] Any other H&S issues:

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OH003000.N4.41
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland Chemical			Project Location: Rensselaer, NY
Date: 4/2/10	Time: 0700	Conducted by: Katie Bidwell	Signature/Title: Katie B. / PM / Sci II
Client: Ashland		Client Contact:	Subcontractor companies:

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Air Knife / Vac
2 Decon
3
4
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) — Slips, trips, falls	☑ Motion (i.e., traffic, moving water) (L (M) H) — Air Knife, Vac	☐ Mechanical (i.e., augers, motors) (L M H)
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) ((L) M H) — Warm
☑ Chemical (i.e., fuel, acid, paint) ((L) M H) — Fuel,	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) ((L) M H) — Sun
☑ Sound (i.e., machinery, generators) ((L) M H) — air knife	☑ Personal (i.e. alone, night, not fit) ((L) M H)	☑ Driving (i.e. car, ATV, boat, dozer) ((L) M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - *(See statements below)*

[✓] Elimination	[ ] Substitution	[ ] Isolation
[✓] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[✓] General PPE Usage	[✓] Hearing Conservation	[ ] Respiratory Protection
[✓] Personal Hygiene	[ ] Exposure Guidelines	[✓] Decon Procedures
[✓] Emergency Action Plan (EAP)	[ ] Fall Protection	[ ] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
[ ]	[ ]	[ ] Other *(specify)*
[ ]	[ ]	[ ]

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Weylin Barrows Parratt Wolff	0700		✓
Matthew Carnie Parratt Wolff	0700		✓
mickey marshall PARRATT WOLFF	0700		✓

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

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In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today: _____
- [ ] Incidents that occurred today: _____
- [ ] Any Stop Work interventions today? _____
- [ ] Corrective/Preventive Actions needed for future work: _____
- [ ] Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OHCD3000N441
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name:		Project Location:
Ashland Distribution CO		Rensselaer, NY
Date: 4/5/10 Time:	Conducted by: Katie Bidwell	Signature/Title: Katie Bidwell / Sci II
Client: Ashland	Client Contact: Jim Vondracek	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 IW - drilling 3 well construction 5
2 decon 4 6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Any Stop Work Interventions yesterday?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ If deviations, notify PM & client
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ All equipment checked & OK?
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) Slips, trips, Falls	☐ Motion (i.e., traffic, moving water) (L M H)	☑ Mechanical (i.e., augers, motors) (L) M H) drill Rig
☑ Electrical (i.e., utilities, lightning) (L) M H) utilities	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L) M H) heat
☑ Chemical (i.e., fuel, acid, paint) (L) M H) Fuel	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L) M H) Sun
☑ Sound (i.e., machinery, generators) (L) M H)	☐ Personal (i.e. alone, night, not fit) (L M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - *(See statements below)*		
☑ Elimination	☐ Substitution	☐ Isolation
☑ Engineering controls	☐ Administrative controls	☐ Monitoring
☑ General PPE Usage	☑ Hearing Conservation	☐ Respiratory Protection
☑ Personal Hygiene	☐ Exposure Guidelines	☑ Decon Procedures
☑ Emergency Action Plan (EAP)	☐ Fall Protection	☐ Work Zones/Site Control
☐ JLA to be developed/used *(specify)*	☐ LPO conducted *(specify job/JLA)*	☐ Traffic Control
☐	☐	☐ Other *(specify)*
☐	☐	☐

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Matthew Carnie / Parratt Wolff / Matthew Carnie	MC 10:50am		MC
Mickey Marshall / PARRATT WOLFF / Mickey Marshall	M.M 10:50AM		M M
Mike Wilson / Parratt Wolff / Mike Wilson	MW 10:50am		M.W.

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OHCO3000 N441
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland Distribution			Project Location: Pennsylvania, USA
Date: 4/6/2010	Time: 0710	Conducted by: Katie Bidwell	Signature/Title: Katie Bidwell / Scill
Client: Ashland		Client Contact: Jim Vondracek	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Drilling / Split Spoon Sampling 3 Well Construction 5
2 Decon 4 Development 6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☐ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☐ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK? Geoprobe - not turning on ☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) Slips trips falls	☑ Motion (i.e., traffic, moving water) (L M H) Leaving Site	☑ Mechanical (i.e., augers, motors) (L M H) augers
☑ Electrical (i.e., utilities, lightning) (L M H) utilities	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L M H) rain / thunder
☑ Chemical (i.e., fuel, acid, paint) (L M H) Fuel	☐ Biological (i.e., ticks, poison ivy) (L M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☑ Sound (i.e., machinery, generators) (L M H) Geoprobe / generators	☑ Personal (i.e. alone, night, not fit) (L M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

[X] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

[✓] Elimination	[ ] Substitution	[ ] Isolation
[✓] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[✓] General PPE Usage	[✓] Hearing Conservation	[ ] Respiratory Protection
[✓] Personal Hygiene	[ ] Exposure Guidelines	[✓] Decon Procedures
[✓] Emergency Action Plan (EAP)	[ ] Fall Protection	[ ] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
		[ ] Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign In Time	Initial & Sign out Time	I have read and understand the HASP
Mike Wilson Parratt Wolff Mike Wilson	MLS 7:00	MLS	MLS
Matthew Cairie Parratt Wolff Matthew Cairie	MC 7:00		MC
mickey marshall PARRATT Wolff Mickey Marshall	MM 7:00		MM

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9558 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In Out

In Out

In Out

In Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

[ ] Lessons learned and best practices learned today: ____

[ ] Incidents that occurred today: ____

[ ] Any Stop Work Interventions today? ____

[ ] Corrective/Preventive Actions needed for future work: ____

[ ] Any other H&S issues: ____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OH003000.NY41
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland Distribution			Project Location: Rensselaer NY
Date: 4/7/10	Time:	Conducted by: Kate Bidwell	Signature/Title: Kate Bidwell
Client: Ashland		Client Contact: Jim Vondracek	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Drilling
2 well construction
3 Decon
4 guard pp - pad installment
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) — slips, trips, falls	☑ Motion (i.e., traffic, moving water) ((L) M H) — traffic - leaving site	☑ Mechanical (i.e., augers, motors) (L (M) H) — augers
☑ Electrical (i.e., utilities, lightning) ((L) M H) — utilities	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L M H) — heat 80's
☑ Chemical (i.e., fuel, acid, paint) ((L) M H) — fuels	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L (M) H) — sun
☑ Sound (i.e., machinery, generators) (L (M) H) — generator, Rig	☑ Personal (i.e. alone, night, not fit) ((L) M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

[✓] Elimination	[ ] Substitution	[ ] Isolation
[✓] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[✓] General PPE Usage	[✓] Hearing Conservation	[ ] Respiratory Protection
[✓] Personal Hygiene	[ ] Exposure Guidelines	[✓] Decon Procedures
[✓] Emergency Action Plan (EAP)	[ ] Fall Protection	[ ] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
[ ]	[ ]	[ ] Other *(specify)*
[ ]	[ ]	[ ]

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign In Time	Initial & Sign out Time	I have read and understand the HASP
Matthew Carnie / Parratt Wolff / Matthew Carnie	MC 7:00		M C
Mike Ludson / Parratt Wolff / M Ludson	MW 7:00		M W
Mickey Marshall / PARRATT WOLFF / Mickey Marshall	MM 7:00		M M

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today: _____
- [ ] Incidents that occurred today: _____
- [ ] Any Stop Work Interventions today? _____
- [ ] Corrective/Preventive Actions needed for future work: _____
- [ ] Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OH003000.0441

TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name:			Project Location:
Ashland Distribution			Rensselaer, NY
Date: 4/8/10	Time: 0710	Conducted by: Katie Bidwell	Signature/Title: Katie Bidwell / Scientist
Client: Ashland		Client Contact: Jim Vandrack	Subcontractor companies: Prescott Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 hand clearing
2 Well development
3 cement pads
4 drum loading/unloading
5 clean up
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) — slips trips falls	☐ Motion (i.e., traffic, moving water) (L M H)	☐ Mechanical (i.e., augers, motors) (L (M) H) — augers
☐ Electrical (i.e., utilities, lightning) (L (M) H) — utilities	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☐ Environment (i.e., heat, cold, ice) (L M H)
☐ Chemical (i.e., fuel, acid, paint) ((L) M H) — fuel	☐ Biological (i.e., ticks, poison ivy) (L M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☑ Sound (i.e., machinery, generators) (L (M) H) — generators / Rig	☑ Personal (i.e. alone, night, not fit) ((L) M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

[x] Elimination	[ ] Substitution	[ ] Isolation
[x] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[x] General PPE Usage	[x] Hearing Conservation	[ ] Respiratory Protection
[x] Personal Hygiene	[ ] Exposure Guidelines	[x] Decon Procedures
[x] Emergency Action Plan (EAP)	[ ] Fall Protection	[ ] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
[ ]	[ ]	[ ] Other *(specify)*
[ ]	[ ]	[ ]

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Matthew Carnie / Parratt Wolff / Matthew Carnie	MC 7:00		M.C
Mickey Marshall / PARRATT WOLFF / Mickey Marshall	mm 7:00		M.M
Luke Glading / Delta Consultants			
Michael Passalite / AFSCO Fence Supply			
Gary Bennett / " "			
ANDREW PIPER " "			

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6165 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

	In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today: _____
- [ ] Incidents that occurred today: _____
- [ ] Any Stop Work interventions today? _____
- [ ] Corrective/Preventive Actions needed for future work: _____
- [ ] Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OHA003100.0041
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name:		Project Location:
Ashland Distribution Co		Kenmore, NY
Date: 4/9/2010 Time: 0715	Conducted by: Katie Bidwell	Signature/Title: Katie B Bidwell / Scill
Client: Ashland	Client Contact: Tim Vondracek	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Well Development
2 Decon
3 clean-up / load up
4
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☑ Field teams to "dirty" JLAs, as needed?	☐ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) Slips trips falls	☐ Motion (i.e., traffic, moving water) (L M H)	☐ Mechanical (i.e., augers, motors) (L M H)
☑ Electrical (i.e., utilities, lightning) (L) M H) utilities	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☐ Environment (i.e., heat, cold, ice) (L M H)
☑ Chemical (i.e., fuel, acid, paint) (L) M H) Fuel	☐ Biological (i.e., ticks, poison ivy) (L M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☑ Sound (i.e., machinery, generators) (L) M H) generators	☐ Personal (i.e. alone, night, not fit) (L M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

✓ Elimination	Substitution	Isolation
✓ Engineering controls	Administrative controls	Monitoring
✓ General PPE Usage	✓ Hearing Conservation	Respiratory Protection
✓ Personal Hygiene	Exposure Guidelines	✓ Decon Procedures
✓ Emergency Action Plan (EAP)	Fall Protection	Work Zones/Site Control
JLA to be developed/used *(specify)*	LPO conducted *(specify job/JLA)*	Traffic Control
		Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign In Time	Initial & Sign out Time	I have read and understand the HASP
Matthew Carnie / Parratt Wolff / Matthew Carnie	MC 7:00		✓
Mickey Marshall / PARRATT WOLFF / Mickey Marshall	MM 7:01		✓

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3600

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental Model MultiRae PLus Serial 90 Tech

Project # OH003000.NY41

Date 4/1/2010

Time 0715

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	0.0 ✓
Span	100	✓

Parameter D.O.	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00		
7.00		
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Co 0.0	Co 49
H_2S 0.0	H_2S –
~~O2~~ 20.9	LEL 50
LEL 0.0	O_2 –

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental MultiRae Plus Model 2C031 Serial Ikotech

Project # OH003000.NY41

Date 4/5/10

Time 0930

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	✓
Span		

Parameter D.O.	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00		
7.00		
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

Fresh Air
Ox 20.9
LEL 0.0
CO 0.0
H_2S 0.0

multi.gas
CO 50
LEL 3.50
H_2S 25

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☑ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental Multiple Pro Model 26 31 Serial Qcotech

Project # OH003000.NY41

Date 4/6/10

Time 0720

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	✓
Span	99.8	✓

Parameter D.O.	Calibration Successful
100% Saturated Air	100 % ✓
Barometer Adjustment	760
Elevation Adjustment	

ph (si Units)		
4.00	3.92	4.00
7.00	7.00	7.00
10.00	10.00	10.00

* ORP (Mv)	
Hydroquinone (240) (Black)	240 mv
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos	1450	1413
Other		

* No adjustment on some meters just a probe check, others are adjustable

Co 0
H2S 0
LEL 0
O2 20.7
Fresh Air

Co 50
H2S 25
LEL 49
Multigas

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☑ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental Model multiRae Plus Serial 2631 Geotech

Project # OH003000.NY41

Date 4/7/2010

Time 0734

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	✓
Span	100	✓

Parameter D.O.	Calibration Successful
100% Saturated Air	100 % ✓
Barometer Adjustment	760
Elevation Adjustment	

ph (si Units)		
4.00	4.05	4.00
7.00	7.09	7.00
10.00	10.03	10.00

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	236 240 ✓
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos	1400	1.413
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU)		
1.0 NTU	1.1	1.0
10 NTU	9.95	10.0
40 NTU		
Other		

Fresh air
Co 0.0
LEL 0.
H_2S 0.0
O_2 20.9

Multigas
Co 50
LEL 24
H_2S 49
O_2 —

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ ~~Rental~~ Multi Rae PLus Model 2631 Serial geotech

Project # OH003000.NY41

Date 4/8/2010

Time 0725

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	
Span		

Parameter D.O.	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00		
7.00		
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

CO 0.0
LEL 0.0
H2S 0.0
Oxy 20.9

CO 50
LEL 49
H2S 24

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☑ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental Model Serial

Turbidity pink

Project # OH003000.NY41

Date 4/9/2010

Time 0850

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	—	—
Span	—	—

Parameter D.O.	Calibration Successful
100% Saturated Air	100 %
Barometer Adjustment	760
Elevation Adjustment	

ph (si Units)		
4.00	4.03	4.00
7.00	6.89	7.00
10.00	—	—

* ORP (Mv)	
Hydroquinone (240) (Black)	246 ~ 240
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos	1.386	1.413
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU)		
1.0 NTU	1.15	1.00
10 NTU	10.86	10.00
40 NTU		
Other		

ARCADIS

Photo List

Subject	Project No.	By	Date	Sheet

Calculations By _____ Date _____ Checked By _____ Date _____

Ashland Distribution CO 3/31 - 4/9/2010

Injection well installation

OH0030001441

63,64 MW-20 Air Knifing

65,66 IW-A2 Air Knifing, down the hole

67 IW-A3 Jack hammering

68-70 N45 OFT Fiber optics Manhole MW-21 area near Columbia Street

71 MW-20 Tripod

72-73 IW-B2 Geoprobe drill Rig

74 IW-A7 Rig under Bridge

75 IW-B5 Rig set up

76 IW-A5 concrete pieces ~3.5 down hole hand cleared

77 IW-B4 Risers

78-80' 15" wood From IW-A6, Rig set up on IW-A6(2)

81 Looking South by MW-A1

T-Rod in hole (by orang cone) = edge of Concrete Slab - Proposed direction through the center of the gate Far Cone = Just outside the GPR Border for IW-A6

82 Looking North by MW-A1

T-Rod = concrete edge / stake w/ Pink Ribbon = CSX property Line

83-84 IW-B2 Gaurd Pipe Top OFF / on

85 IW-A5, A6 Looking South at Boreholes

Borehole (west) = concrete Slab Borehole (center) = Concrete to 7', Borehole (east) Concrete 3.5' hand cleared

ARCADIS

Photo List

Subject	Project No.	By	Date	Sheet

Calculations By _____ Date _____ Checked By _____ Date _____

Ashland Distribution 3/31 - 4/9/2010
OH003000 N441

86 BMI-6, MW A1 + Iw-A5 Looking South
87 Iw-A5 Looking East T-Rod = concrete Slab. The Circle width is just outside the GPR grid
88 Proposed East boundary of the concrete Slab - Looking west 20' to farthest west hole in Iw-A5
89 Iw-A5 3 boreholes Looking west Red Flag = 1" PVC pipe located during the 1st Air Knife Clearing
90 Iw-A6 Looking South - Borehole (west side) (Right) Concrete 3.5-5.0' wood 5-7' 15" Borehole - east side concrete 3.5-7'
91 Iw-A6 Looking North
92 Iw-A6 Looking NW across RR tracks - towards the dead end Rd
93 Iw-A7 - Looking North PZ-3 in distance
94 MW-21 Looking East
95 96 Iw A5, A6 Looking South Red Flags = Proposed concrete Slab + the 1" PVC Pipe (launched 3 flags)
97 Iw A5, A6 Looking North east boundary (Proposed) of concrete Slab
98 Iw-A6 Looking west Stake #4 Concrete/wood, Stake 5 Concrete
99 Iw-A5 Looking West - Nearest Flag Proposed east boundary of C. Slab
100 Iw A5 Looking SouthWest #1 Stake Western edge of concrete Slab hand dug ~3.5 to Locate #2 Stake drilled 1st borehole 3.5-7'(+) Concrete (5' span) #3 Stake hand cleared to 3.5' + Stopped. 2 Red Flags = 1" pipe Line of Red Flags Proposed border of the concrete Slab
101 Iw-A4 Looking South attempted to drill concrete @ 6.5'
102/103 Northern end IPZ Iw-B2, Iw-B4 Looking S then N

ARCADIS

Photo List

Subject	Project No.	By	Date	Sheet

Calculations By _____ Date _____ Checked By _____ Date _____

Ashland Distribution

OH003000 N441

104 21 Drums

105 106 MW-A1 Looking North green + pink stak CSX property

~~106 MW-A1~~

107 IW-A2 -A4 area + CSX property

Photo List

3/31/2010

63, 64 - MW-20 Air Knifing

65, 66 IW-A2 air knifing, down the hole

67 IW-A3 Jack hammering

68, 69 70 N45 off - Fiber optics manhole MW-21 area Columbia Street.

3' 4/1/2010

71 MW-20 Tripod

~~Blue~~ 4/5/10

72-73 IW-B2

Geoprobe drill Rig

4/6

74 IW-A7

Rig under Bridge

4/7

75 - IW-B5

Rig set up

76 - IW-A5 concrete pieces - ~3.5' down hand chased

77 - IW-B4 - Riser

78 - 79, 80 15" wood From IW-A6, Rig set up on IW-A6(2)

81 - Looking South by MW-A1

T-Rod in hole (by orange cone) = edge of concrete slab - proposed direction through the center of the gate Far ~~edg~~ cone = Just outside of the GPR Border for IW-A6

82 Looking North by MWA1

T-Rod = Concrete edge | Stake w/ Pink Ribbon = CSX Property Line

Photo List

3/31/2010

63, 64 - MW-20 Air Knifing

65, 66 IW-A2 air knifing, down the hole

67 IW-A3 Jack hammering

68, 69 70 NYS DOT - Fiber optics manhole MW-21 area Columbia Street.

3/4/1/2010

71 MW-20 Tripod

Week ending: 4/4/2010

Project:	Ashland Distribution CO
Project number:	OH003000.NY41
Site:	Rensselaer, NY
Boring/Well ID:	MW-20 / MW-21

hand clearing
10-15' wells

Prepared by:	Katie Bidwell
Drilling contractor:	Parratt Wolff
Drilling method:	HSA, Tripod
Driller:	Mickey Marshall, Doug Richmond > Air Knife
Helper:	Matt Cosmic, Weylin Barrows

Item	Unit	Mon	Tues	Wed 3/31	Thurs 4/1	Fri 4/2	Weekly Total
Mobe/Demobe	lump sum		4 trucks	1- Syracuse Air Knife Vac 2- Pittsfield Rig	1-Truck Syracuse	2- Syracuse 1- Rig Stayed	
Rig set-up	per well						
Drilling	per foot				2 wells 13' each		26
Split spoons	each				4 + 4		8
GW samples	each						
Gamma log	each						
Screen	per foot				10' + 10'		20'
Casing	per foot				10' + 10'		20'
Gravel pack	per foot				10.5' + 10.5'		21'
Sand seal	per foot				↓		
Bentonite seal	per foot				1.0' + 1.0'		2.0
Bentonite grout	per foot						
Cement grout	per foot						

Item	Unit	Mon	Tues	Wed	Thurs	Fri	Weekly Total
Well finishing/ manhole	per well						
Development	per hour						
Tanker truck	per week						
Standby time	per hour						
Delays	hours						
	reason for delay						

Barber rig/surface casing:

Mobe/demobe	lump sum						
Setup	per well						
Drill	per foot						
Surface casing	per foot						
Barber rig standby	per hour						

Miscellaneous equipment on site:

Baker tank							
Roll-off							
Drums				2.5 filled	6 - Soil	1 drum decon water	11
Air Knife vac				5 holes 4- 4.0' 1- 2.5'	7 holes 2- concrete squares	2 holes 1- Stick up 1 Flush mount	14

Week ending:

Project: Ashland Distribution CO
Project number: OH003000.NY41
Site: Rensselaer, NY
Boring/Well ID:

Prepared by: Katie Bidwell
Drilling contractor: Parratt Wolff
Drilling method: HSA
Driller: Mickey Marshall
Helper: Matt Carter, Mike Wilson (4/5-4/7)

Item	Unit	Mon 4/5/10	Tues 4/6/10	Wed 4/7/10	Thurs 4/8	Fri 4/9	Weekly Total
Mobe/Demobe	lump sum	2 - truck w/ geoprobe	—	1 - geoprobe offsite	~~[illegible] Supply truck~~	1 - drill rig, 1 - supply truck	
Rig set-up	per well	2 IW's	4 - set-ups, 2 IW S-comp	4 set-up, 1 well comp			
Drilling	per foot	14' each (28)	14', 17' (3.5', 6.5')	IW-17', AB-8'			
Split spoons	each	4 each (8)	11 - total	6, 9			
GW samples	each	—	—				
Gamma log	each	—	—				
Screen	per foot	10' each (20)	10' each				
Casing	per foot	4' each (8)	7, 5				
Gravel pack	per foot						
Sand seal	per foot	12 - 1.5' each	12 - 1.5', 14.5 - 3.0				
Bentonite seal	per foot	1.5, 1.0 each	1.5 - 1, 3 - 2				
Bentonite grout	per foot	—					
Cement grout	per foot				3 bags / [illegible], 7 [illegible]		

Item	Unit	Mon	Tues	Wed	Thurs	Fri	Weekly Total
Well finishing/ manhole	per well						
Development	per hour		2hrs [illegible]			IW B5 IW A7 2hrs	
Tanker truck	per week						
Standby time	per hour						
Delays	hours	0720 - (2) 8:00					
	reason for delay	geoprobe wasn't there					

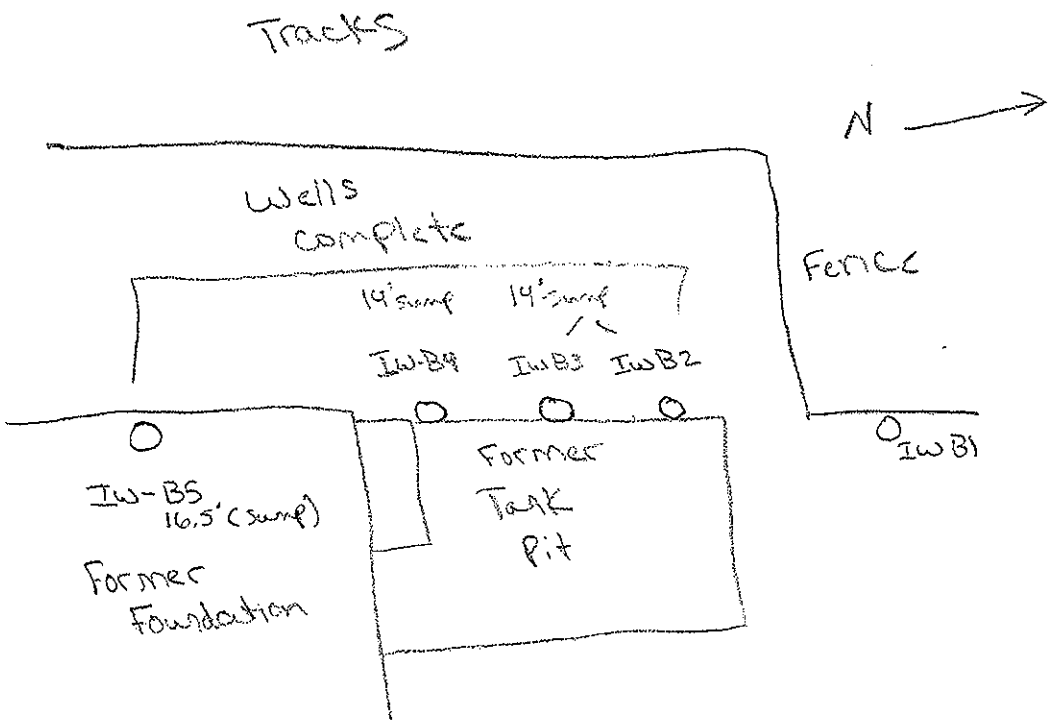
1- was decon'ing

Barber rig/surface casing:

Mobe/demobe	lump sum						
Setup	per well						
Drill	per foot						
Surface casing	per foot						
Barber rig standby	per hour						

Miscellaneous equipment on site:

Baker tank							
Roll-off							
Drums			2 - decon (13) [illegible]	2 15	2 17	21 - Total	
Hand dug				3 holes	1		

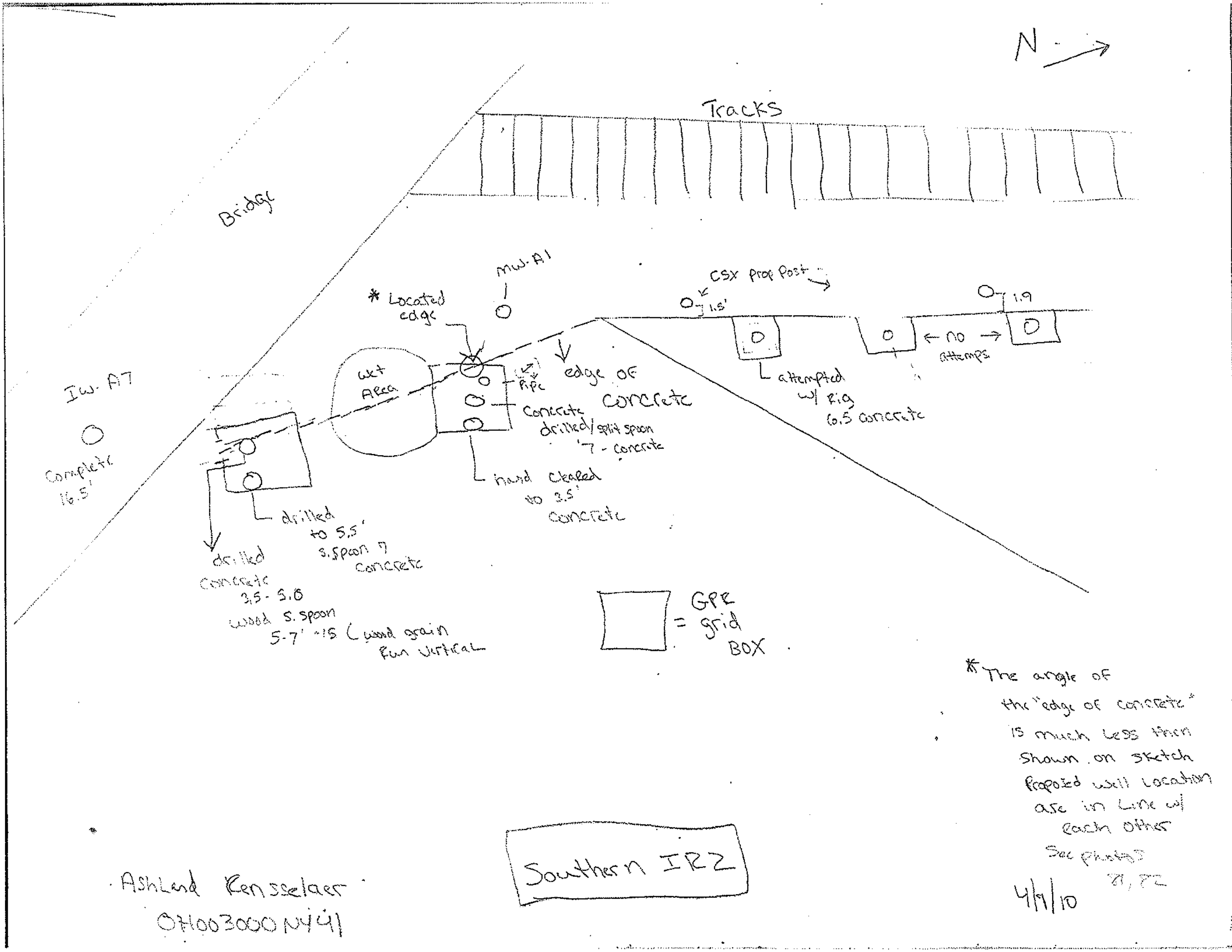


Northern IRZ

Ashland - Rensselaer

OH 003000 N491

4/7/10


N
Tracks
Bridge
IW. A7
Complete
16.5'
MW-A1
* Located edge
wet Area
Pipe
edge of concrete
Concrete drilled/split spoon
'7 - concrete
hand cleared to 3.5'
concrete
drilled to 5.5'
s.spoon 7
concrete
drilled concrete
3.5 - 5.8
wood s. spoon
5-7' ~15 (wood grain run vertical
CSX prop post
1.5'
1.9
attempted w/ Rig
6.5 concrete
← no → attemps
= GPR grid BOX
* The angle of the "edge of concrete" is much less then shown on sketch
Proposed well location are in line w/ each other
See photos 81, 82
4/9/10
Southern IRZ
Ashland Rensselaer
OH003000NY41

KB

PAGE

SHEET 1

DATE: BY:

DATE: CHKD:

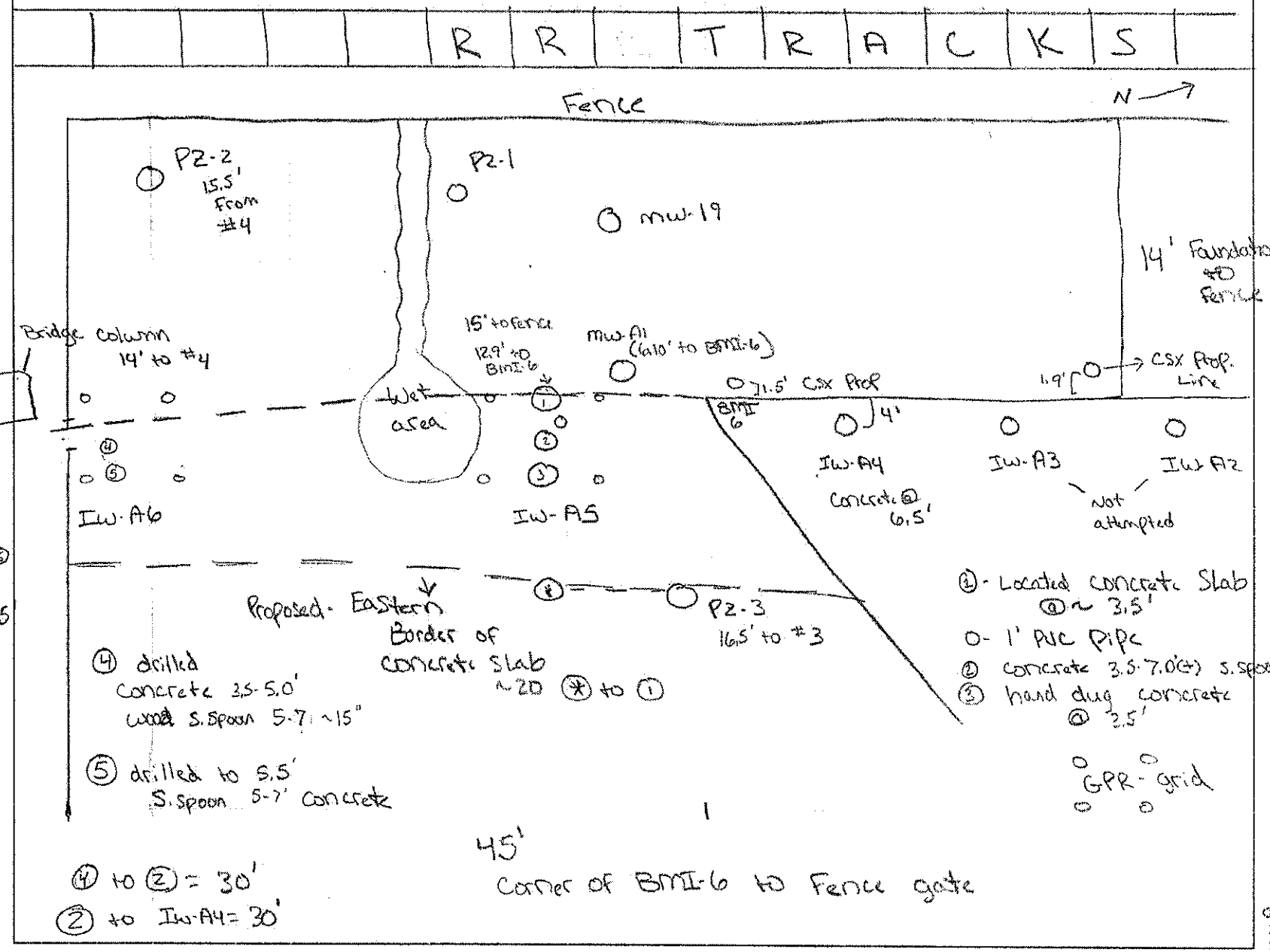
SUBJECT:

JOB NO:

ARCADIS

ASH Land - Rensselaer Southern IRZ OH003000N141 4/9/2010

RR TRACKS



AGM Form 30 12-01

ARCADIS
Well Development Log

Project/No.: Ashland / OH003000.N441 Well: MW-20 Date: 4/16/2010

Developed By: Parratt Wolff / K. Bidwell Casing Material: PVC

Static Water-Level Before: 2.35 Measuring Point: Top of Pvc Casing Diameter: 2"

Total Depth Before: 11.70 Pump On: — Total Gallons Removed: 16

9.35 (0.16) (10)
1.49 = 15.00 - 10 Volumes gallons

Purge Pump: Surge - whale pump ORP Pump Off: —

Time	Rate (gpm)	Depth to Water	Gallons Purged DO	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C)	Comments
1736		-46	0.47	>1100	0.791	6.59	11.48	dark gray turbid odor Light sheen
1748		-72	0.33	>1100	0.772	6.34	10.57	4gal - dark gray turbid
1755		-70	1.05	500	0717	6.18	9.63	w/o Surging light gray 10gal
		-58	1.18	950	0.948	6.32	9.95	w/ Surging - dark gray 16 gallons

ARCADIS
Well Development Log

Project/No.: Ashland/OH003000.N441 Well: MW-21 Date: 4/6/2010

Developed By: Garratt Wolff / K. Bidwell Casing Material: PVC

Static Water-Level Before: 9.58 Measuring Point: Top of PVC Casing Diameter: 2"

Total Depth Before: 14.95 Pump On: — Total Gallons Removed: 9.25

5.39 - (0.16)(10)
0.85 8.60 = 10 Volumes
gallons

Purge Pump: Surge Block - whale pump Pump Off: —

Time	Rate (gpm)	Depth to Water	Gallons Purged	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C)	Comments
	—	105	~10a	>1100	1.362	6.49	1300	Pandey after ~ 7.0 gallons
1635								Recharge 10 min ~ half gallon
		83	5.46	>1100	1.360	6.63	12.69	10 min Brown ~ 8
1650		82	6.13	>1100	1.343	6.59	11.12	Brown ~8.5
1710								Brown 9.25

ARCADIS

Well Development Log

Project/No.: Ashland/OH003000N441 Well: IW-B2 Date: 4/8/2010

Developed By: Parratt Wolff / K. Bidwell Casing Material: Steel

Static Water-Level Before: 1.99 bgs (3.69 T PVC) Measuring Point: — Casing Diameter: 2"

Stick up 1.70' AGS Riser

Total Depth Before: 14.22 bgs (15.92 T PVC) Pump On: — Total Gallons Removed: 37

(14.22 - 1.99) · (0.16) = 1.95 = 1 Volume

19.56 = 10 Volume

Purge Pump: Surge Block, Whale Pump Pump Off: —

Time	Rate (gpm) ORP	Depth to Water DO	Gallons Purged	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C)	Comments
11:09	—	—	—	—	—	—	—	Surge Block
11:19	-47	1.18	0.0	>1100	1.79	6.30	9.38	3.5 gray Silty
1124	-52	4.79	7.5	>1100	2.14	6.33	6.49	7.5 gray Silty
1128	OFF	—	—	—	—	—	—	11.0 let recharge
1135	-60	3.49	11.0	>1100	2.71	6.35	5.21	
1137	OFF -	Recharge		—	—	Surged	—	16 gal - less gray
1143	-49	7.79	22	>1100	2.41	6.39	6.46	20 gal gray
1152	OFF	—	29	—	—	—	—	29 700 NTU cloudy gray
1304	-52	2.98	34	>1100	2.30	6.32	10.74	

ARCADIS
Well Development Log

Project/No.: Ashland / OH003000.0441 Well: IW-B3 Date: 4/8/10

Developed By: Pascatt Wolff / Katie Bidwell Casing Material: Steel

Casing Diameter: 2"

Static Water-Level Before: 1.36 bgs (3.07 TOP of PVC) Measuring Point: —

Stick up Riser: 1.70 AGS

Total Depth Before: 14.24 bgs (15.95 TOP PVC) Pump On: —

Total Gallons Removed: 34

(14.24 - 1.36) · (0.16) = 206 = 1 Volume
12.88 20.60 10 Volumes

Purge Pump: Susq Black / whale pump Pump Off: —

Time	Rate (gpm) ORP	Depth to Water DO	Gallons Purged	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C)	Comments
1120	—	—	—	—	—	—	—	Surg blocked.
1130	-17	2.16	0	>1100	1.94	6.48	12.33	4
1139	-31	3.96	12	>1100	2.19	6.67	12.76	Silty dark brown / gray.
OFF	on	(1145)						
1347	-53	5.35	20	>1100	2.06	6.69	13.51	
			26	—				Slowly starts to Runs dry - pump surges
				185				After Recharge
1522	-37	3.82	30	539	1.71	10.70	16.31	
				729	~~—~~	~~—~~	DE.	

ARCADIS
Well Development Log

Project/No.: Ashland/OH003000.N441 Well: IW-B4 Date: 4/8/2010

Developed By: Passatt Wolff / K. Bidwell Casing Material: Steel

Static Water-Level Before: 1.68 bgs 3.39 T.PVC, Measuring Point: — Casing Diameter: 2" Riser 1.71 AGS.

Total Depth Before: 14.25 bgs (15.96 T PVC) Pump On: — Total Gallons Removed: 27

(14.25 - 1.68)(0.16) = 2.01 = 1 Volume
12.57
20.11 = 10 Volumes

Purge Pump: Surge Block / Whale Pump Pump Off: —

Time	Rate (gpm) ORP	Depth to Water DO	Gallons Purged	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C) :	Comments
1535							Sun	Surge Block.
1545	-103	0.17	0	>1100	2.28	6.52	17.78	Black + Silty
1547			5 -	turned OFF. Pump surging - Low water				
1557	1559		2.5 gallons	- OFF	Surging - Low water			
1612	-116	1.4	3 gallons	- OFF	SAA			10
1723	-80	1.98	13	>1100	2.94	6.26	8.37	gray-dark silty
4/9								
DTW	2.38							
DTB	15.96							
801 -	804.	5.5	gallons	-				Starts to Run dry
801	122	0.60	13	>1100	1.96	6.52	9.18	dark gray 18.5 total Recharg
0852	-43	3.84	23	858	2.62	6.37	8.55	
0917	-43	3.13	27	207	2.13	6.31	8.97	Cloudy Brown/gray
	DTB	15.96						

ARCADIS
Well Development Log

Project/No.: Ashland/OH003000.0441 Well: IW-B5 Date: 4/9/2010

Developed By: Pasratt Wolff / K Bidwell Casing Material: Steel

Static Water-Level Before: 6.02 bgs / 8.22 Measuring Point: — Casing Diameter: 2"
Riser 2.90 ags

Total Depth Before: 17.05 bgs / 19.25 Pump On: — Total Gallons Removed: 22
(17.05-6.02)(0.16) 1.76 1 volume
11.03 17.64 10 volumes

Purge Pump: Surge Block / whale Pump Pump Off: —

Time	Rate (gpm) ORP	Depth to Water DO	Gallons Purged	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C)	Comments
0800								Surge Block
0816	-10	0.54	0.0	>1100	4.65	6.00	8.63	Thick dark Brown
								3.5 0816 - 0824
0832	-27	1.15	8.0	>1100	5.16	5.94	8.88	
								10.5 gal
				313				14.5 Light Brown
0857	-29	1.51	16.5	176	5.04	5.96	9.12	Cloudy Brown - Little change when surged
			20	191				
			21	130				
0908	-28	1.44	22	145	4.91	5.96	9.07	
	DTB	19.20						

ARCADIS
Well Development Log

Project/No.: Ashland / OH003000.0441 Well: IW-A7 Date: 4/9/2010

Developed By: Rosratt Wolff / K Bidwell Casing Material: Steel

Static Water-Level Before: 5.31 bgs / 7.94 T.PVC Measuring Point: — Casing Diameter: 2"

Riser 2.43 Ags − 2.40 4/9 w/ Pad

Total Depth Before: 16.76 bgs / 19.19 T.PVC Pump On: — Total Gallons Removed: 40

(16.76 − 5.31)(0.16) = 1.83 1 Volume
11.45 18.32 = 10 Volumes

Purge Pump: Surge Block/Whale Pump Pump Off: —

Time	Rate (gpm) ORP	Depth DO to Water	Gallons Purged	Turbidity (NTU's)	Spec. Cond (umhos)	pH (SI Units)	Temp (C)	Comments
0952								Surge Block
1006	-58	2.59	0	>1100	1.56	6.88	8.51	Thick/Brown
	-37	5.09	12	>1100	1.89	6.75	8.04	3.25, 3.5, 3.5, 8
1035								15 Total
1038	-28	5.25	21	>1100	1.87	6.71	8.15	
				600				Recharge - NO Surging
				>1100				24 gallons
1053	-30	1.71	27.5	>1100	1.86	6.70	8.29	5 32.5
1102	-31	1.77	36.5	>1100	1.85	6.69	8.29	
1105	-30	2.66	40	>1100	1.86	6.70	8.35	
				81				Recharges Quickly
		19.15	DTB					

ARCADIS

Subject	Project No.	By	Date	Sheet

Calculations By _____ Date _____ Checked By _____ Date _____

ASH Land Distribution KB
OH003000441

Drum Count

21 Drums
12 - Soil cuttings
8 - Decon / Development water
1 - Decon Pad / PPE

Soil cuttings - Drum #'s
#1-9, 11, 12, 15

Decon / Devel water
#10, 13, 14, 16, 17 19-21

Decon Pad
#18

Drum List

3/31/2010

2.5 drums

Soil MW-20, IW-A2, A3, A4

4/1/2010

6 drums

Soil - IW-A5, A6, A7 B5, B4
MW-21

4/2

2 drums

1- decon water Vac Truck
Orange cleaner

1- Soil cuttings
IW-B5.3, 2, 4

11 Drums

Test Pit Notes

KB

PAGE

SHEET 1

DATE: BY:

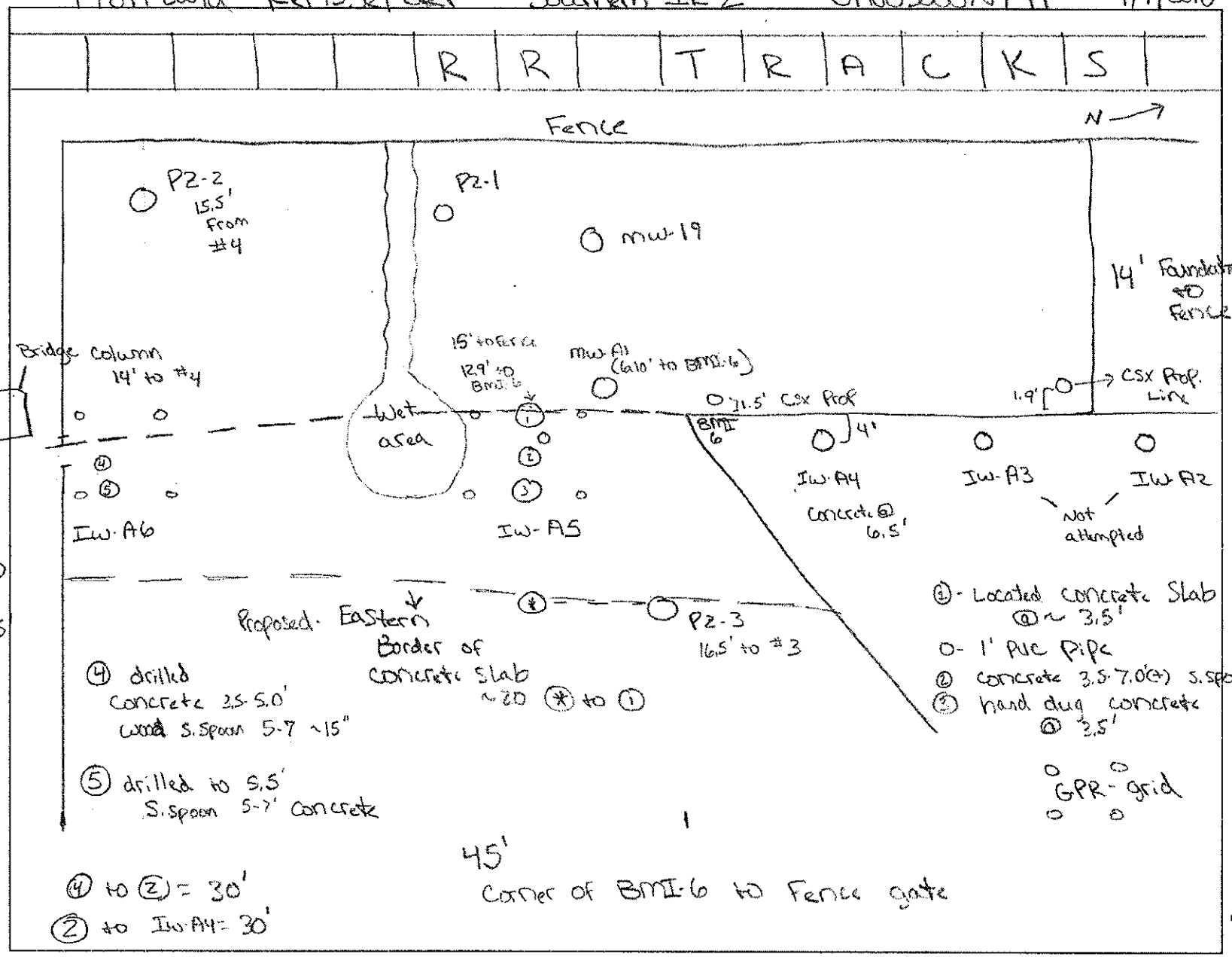
DATE: CHKD:

SUBJECT:

JOB NO:

ARCADIS

ASH Land - Rensselaer Southern IRZ 01600300NY41 4/9/2010



AGM Form 30 12-01 ©

KB

94 Ashland Rensselaer 4/9/10
OH0003000 N441

IW-B5

Developed on 4/9/2010
DTW 6.02 bgs Stick up 2.20' ags
DTB 17.05 Surge Block / whale pump
10 Volumes 17.64 gallons
Purged 22 gallons
Thick dark Brown, Light Brown
Cloudy Brown

ORP	DO	Turb	Sp con	PH	Temp	22 gal
-28	1.44	145	4.91	5.96	907	

IW-A7

Developed on 4/9/2010
DTW 5.31 bgs Stick up ~2.40' ags
DTB 16.76 Surge Block / whale pump
10 Volumes = 18.32 gallons
Purged 40 gallons
Thick Brown
Recharges Quickly

ORP	DO	Turb	Spcond	PH	Temp
-30	2.66	>1100	1.86	6.70	8.35

40 gallons

Katie Bidwell

KB

Ashland Rensselaer 5/17/10
OH0003000 N441

0850 Katie Bidwell + [redacted] Ryan w/ Drew Associates onsite H+S Meeting. Walk through the 2 areas that need the GPR work Conducted
Ryan flags out the Location boundaries - (Grids)

1100 gets the GPR out + together + Ready to go
1105 KB offsite
KB Checks in w/ Ryan. He has completed the 1st section + is now working on the second
KB picks up the cooler From Test America
KB back onsite
Ryan is completing Section #2 Checks the underground electrical Line + then Surveys a couple of points In orange, white + the few idwe flags along the Fence Line mark out the new GPR areas Along with

95 OH003000N441

Som. New Stakes on the old Foundation (W of IW-A2)

Ryan takes some photos

1740 Ryan offsite

KB calls K Potter. They did not get a chance to GPR on the S Side of the Fence

KB Takes some measurements

1815 KB offsite

KB Ashland - Rensselaer

OH003000N441 6/2/2010

0800 KB onsite - gate was dummy locked Arcadis Lock pad not on chain but open on the gate Backhoe already onsite

Ashland onsite to pick up the drums.

KB calls K. Potter. KB - Relabels Some of the drums

0835 PW onsite. Premier utility onsite.

KB Sets up the dust meter + multiRAE in Tripod casing

KB grabs a water level From MW-A1 5.5'

0930 Ashtead drum pick up OFFSite

All Ready to Start the test Pit

1015 Start digging near PZ-3 N/W side towards concrete building wall TP-1A

d.g N/S to 5.5' no concrete - just a few Large Blocks KB Calls

KB

Ashland - Rensselear

96 OH003000N441 6/2/10

1045 to discuss will move to the end of S. of the Pit + dig west start digging TP-1B. uncover a Large Concrete Block at 2.8' 2.2' Long 10" Thick + 1.4' wide observed hole that it came from. Looks as though the bottom layers are brick + some kind of concrete was poured over it. Pretty brittle

KB + K. Potter go over the recent observations. Fill in the Test Pit ~~TP-B~~ TP-1B Mike w/ PW started to dig in the IW-A5 area at Pt (1) Located a concrete wall at 3.5' to 6' Parkell w/ concrete Foundation. Stream water - was caved in + started running into the hole - preventing a good view of the concrete.

PW moves south + starts working N/S in between (just east) of PZ-1 + PZ-2 west of (Pt 4)

KB

OH003000N441 6/2/10

located concrete edge concrete started at 2.6' stepped out at 30' stepped out again at 5.4 to 6.3' (Piece of wood Backfilling)

PID Reading 0.0 - above concrete 85-300 ppm ⇒ Throughout area

PW extended the Test Pit to the South but didn't want to get close to the Bridge Column/ Footer. no water above concrete

moved to TP-4 east of A-6 + (A-5) did not find any concrete at 7.8' deep (a Lot of Clay)

extended TP-4 E/W to connect to TP-3 creating TP-5

Locating a 10' wide concrete slab. extends under the Fence on the South end. 5.6' ~~deep~~ deep (3.8' Thick) on the eastern edge + 6.3' deep on South & Western edge (3.6' Thick) North western edge 35'-6.0 deep 25' thick

PW - backFills

KB Ashland

97 OH003 000 N441 6/2/10

KB Leaves a message for K. Potter

PW starts on TP-6 which is Located 35 East of mw-A1 + 10'

South. Trench 15' moving east. (Towards the Rd) across from PZ-3.

Locate the concrete eastern edge in line w/ the 10' width at the southern end by the Fence

6.5' away from the Test pits TP-1B

1705 KB calls K. Potter.

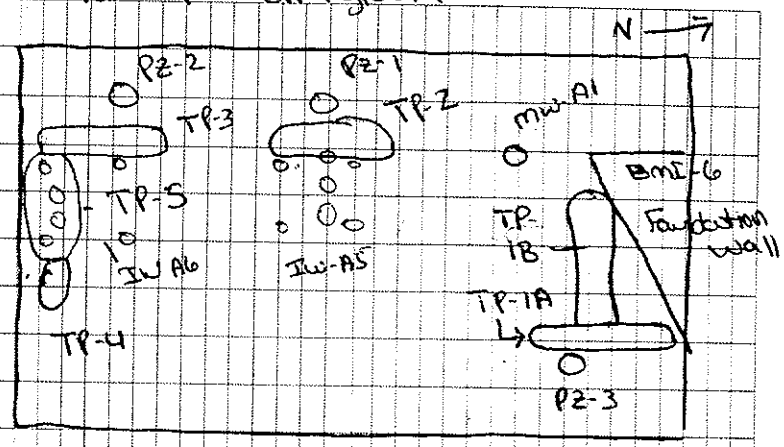
PW backfills. K. Potter gives KB the okay to call it a day there is no need to dig any where else. KB starts Cleaning up air monitoring equip.

Mike (PW) decons for the last 1730 time.

mark out TP Locations Take Photos

1830 KB + PW offsite

Test Pit diagram



Photos 41-51 Concrete Boundary + Flags of TP Locations

TP-1

Locations: Runs N/S Just west of PZ-3. N end starts at the former Foundation wall

2 wide, 9' Long, 5.5' deep

No concrete Slab - Just Concrete debris

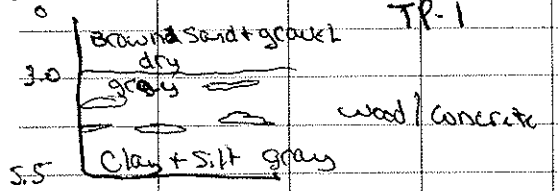
Photos 1-4

		PID (ppm)
0-3'	Sand + gravel Brown dry	0.0
3-3.5	Sand + gravel dark gray moist Trace black stained wood	0.0
3.5-5.5	Clay + Silt Little Sand + gravel gray - dk gray moist. Large concrete pieces, wood pieces Trace odor	0.0

98

OH003000N441 KB

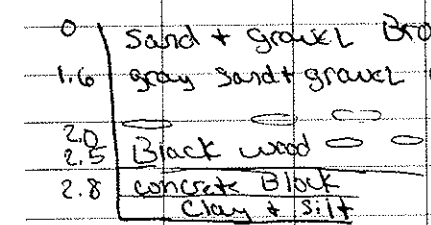
TP-1 6/2/2010



TP-1B

Locations: Runs west off of TP-1A
2.5 wide 9' Long 4.3' deep
1 Sign Large Concrete Block 2.2' Long 10" thick 1.4' wide. many Small concrete / Brick debris chunks. very Brittle Black wood debris.

Photos 5-12



PID Rea
0.0
Slight odor
0.0 ppm

11.6 - Random Selection Placed in a bag

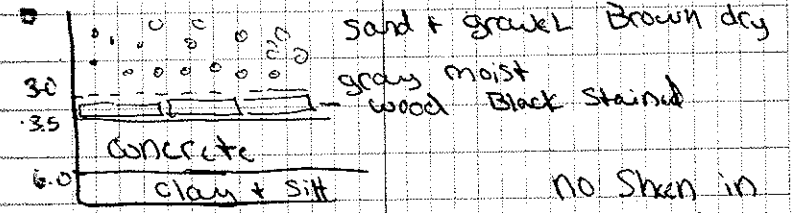
8.3' east west of MW-A1
5.0' from Former Foundation wall
South

Ashland KB

OH003000N441 6/2/10

TP-2

location Runs N/S between PZ-1 & IW-A5 (PT-1). 3' South of MW-A1
PZ-1 is 8' from Concrete wall.
3 wide 11' Long 6' deep
Western edge of Concrete Slab
Located
Photos 13-15
(water from the Storm drain aka / wet area Collapsed in Filling the trench w/ water)



No Sheen in Water

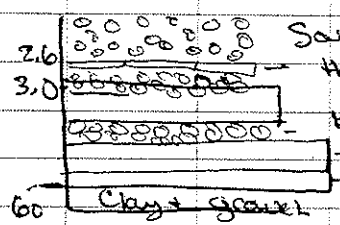
Concrete depth 3.5' to 6'
Concrete Thickness 2.5'

TP-3

Location. South Side of the "wet area" east of PZ-2. Runs N/S
PZ-2 is 8.8' west of the Concrete wall, 3 west of (PT-4) in IW-A6

TP-3

3.8' wide 14' Long 8.2' deep
Photos 16-26
Western edge of Concrete Continues
The concrete wall steps out w/ a
Couple of layers.



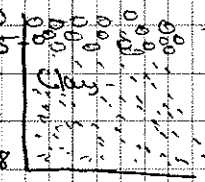
Concrete Layers: 2.6' 3.0' + 5.4'
Steps out

PID Readings
Random Pik → 85, 96, 101, 214 (at 3.9') ppm
299 Random placed in the bag.
Not a Strong odor
Little Sheen
Wood was bordering the Foundation-
Concrete Slab on western edge

Concrete depth 2.6 - 6.3'
Concrete Thickness 3.8'

TP-4

Location Runs east west
east 2.5' of (PT-5) in IW-A6
2' North of the Fence
2.5' wide 9' Long 7.8' deep
No Concrete
Photos 27-29



Water @ 5'
Sweet odor
50 ppm @ 7.8'

TP-5

Location: Runs East/West along the
Fence in the IW A6 grid. Southern
end Connecting TP-3 + TP-4
Located the eastern edge of the
Concrete Slab.
Photos 30-36
Wide 3.5' 5.5 wide 6.0' deep - on
eastern end. Long

OH0003000 N441 Ashland 6/2/10

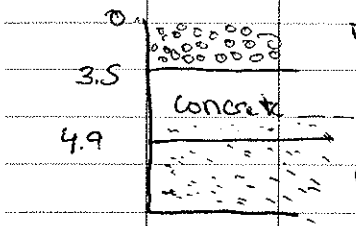
PW. Scraped the Top of the concrete Slab From TP-3 + Found the eastern edge going Towards TP-4 Then determined the Thickness on the eastern Side

Top of Concrete 1.8'
Bottom of Concrete 5.6'
Concrete Thickness 3.8'
NO Step outs

mainly clay in Test pit - Similar to TP-4.

TP-6

Location Runs East/West
~10' South + 3.5 east of mw-A1
~16.8' From the Foundation wall South
~14.0 South of PZ-3 (slightly diagonal)
2.5 wide 15' Long 6.8 deep
Photos 37-40



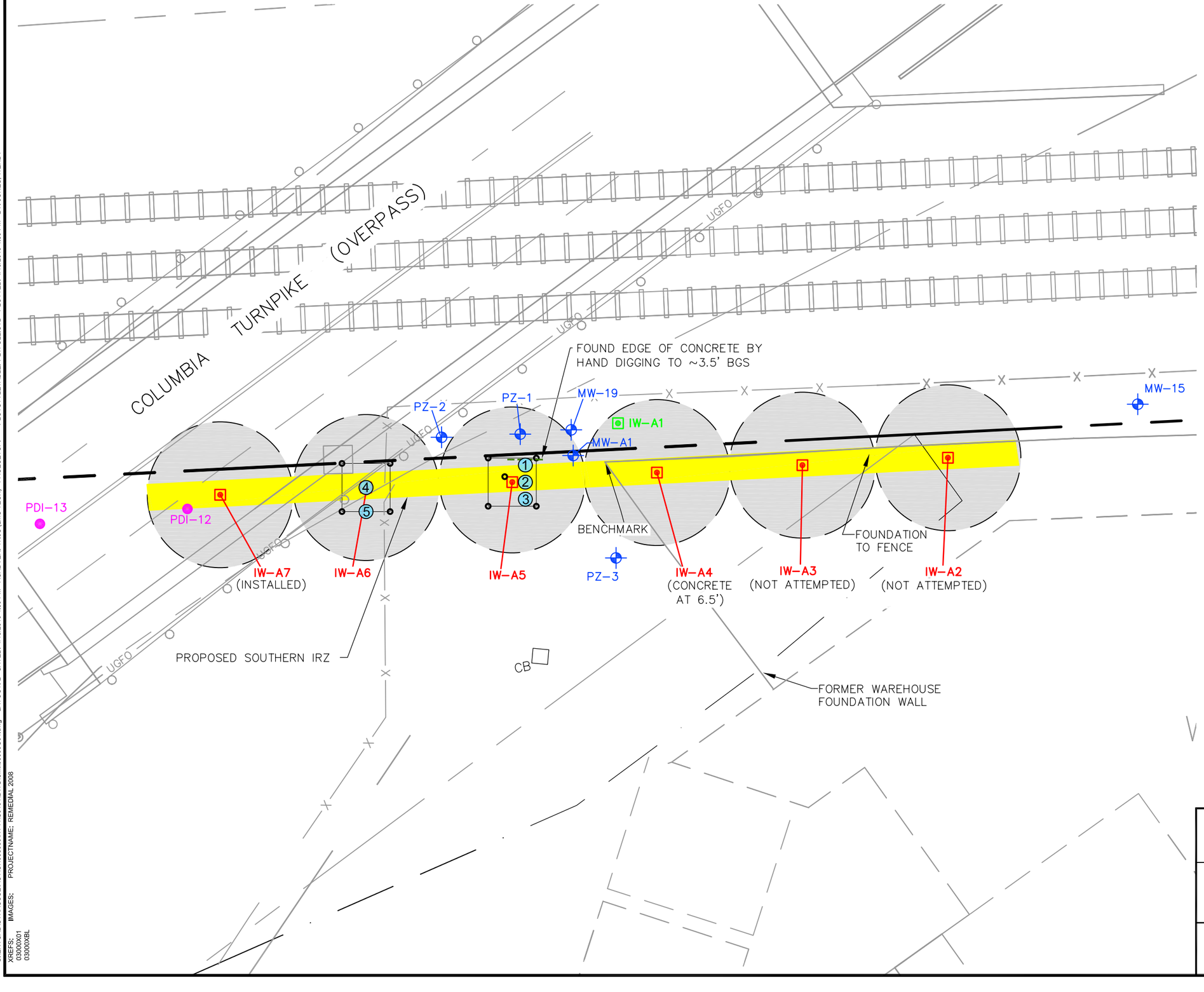
Top of Concrete 3.5-4'
Concrete Thickness 1.4'

OH0003000 N441 Ashland Renss.
Overcast humid 80's

0900 K. Bidwell onsite. Calls K Potter + starts prepping for the weekly activities.
KB starts measuring out Locations. IW-A6 - IW-A2

0915 Parratt Wolff onsite
1-Truck + trailer 2 guys drill Rig is coming. Lee + JC
PW starts unloading the Trailer KB does a walk through w/ PW + continues to measure out drilling Locations.
Utility Mark outs onsite Premier + empower Level 3
1045 - Premier + empower offsite - They give the okay.
1100 PW offsite to Pratt + Son for the air Compressor. KB talks w/ K. Potter
1115 PW back onsite
1123 PW offsite Lunch
PW drill Rig onsite
1130 All 3 off Site for Lunch

mike wilson 3rd PW



LEGEND:

1. LOCATED CONCRETE SLAB AT ~ 3.5'
2. CONCRETE 3.5 – 7.0' (+) S. SPOON NEW LOCATION OF IW–A5 DUE TO PIPE FOUND AT DEPTH IN ORIGINAL LOCATION
3. HAND DUG CONCRETE AT 3.5'
4. DRILLED CONCRETE 3.5 – 5.0' WOOD S. SPOON 5 – 7' ~ 15"
5. DRILLED TO 5.5' S. SPOON 5–7' CONCRETE

1' PVC PIPE

GPR PRIVATE UTILITY GRID

0 20' 40'

GRAPHIC SCALE

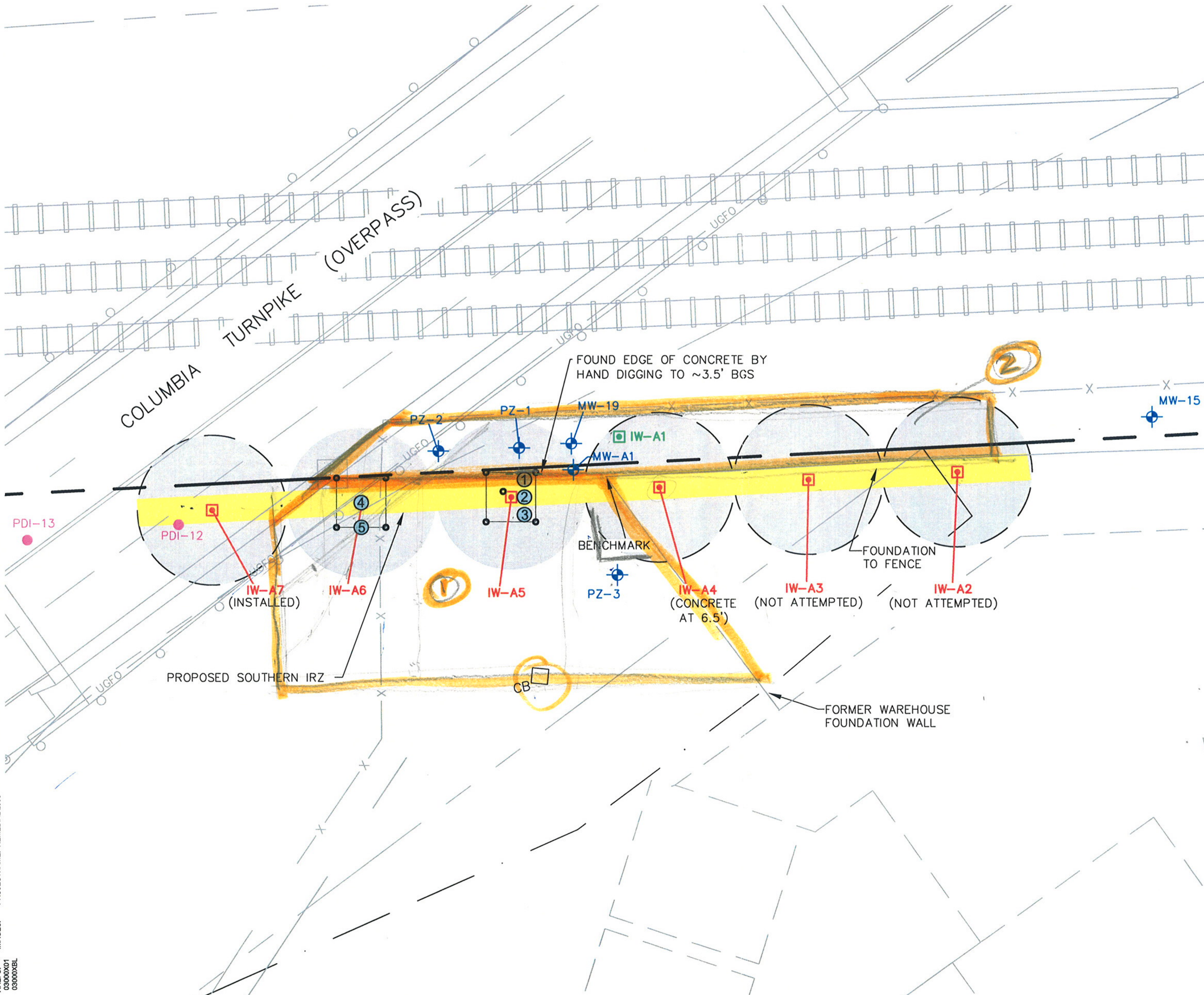
ASHLAND INC.
RENSSELAER, NEW YORK
CMI WORK PLAN

PROPOSED IRZ LOCATIONS

ARCADIS

FIGURE 2

CITY: SYRACUSE_NY GROUP: ENVCAD DB: R. BASSETT, A.Schilling, W.JONES PM: M. KITTINGER TM/TR: K. POTTER LYRON*:OFF*REF, (FRZ)
G:\ENVCAD\SYRACUSE\ACTIOH003000\NY411\S01011\DWG\CMI03000G01.dwg LAYOUT: 2 SAVED: 4/15/2010 4:39 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 4/15/2010 4:39 PM BY: JONES, WENDY
XREFS: 03000X01 03000XBL IMAGES: PROJECTNAME: REMEDIAL 2008



LEGEND:

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- ③ HAND DUG CONCRETE AT 3.5'
- ④ DRILLED CONCRETE 3.5 – 5.0' WOOD S. SPOON 5 – 7' ~ 15"
- ⑤ DRILLED TO 5.5' S. SPOON 5-7' CONCRETE
- • 1' PVC PIPE
- ▫ GPR PRIVATE UTILITY GRID

0 20' 40'
GRAPHIC SCALE

ASHLAND INC.
RENSSELAER, NEW YORK
CMI WORK PLAN

PROPOSED IRZ LOCATIONS

ARCADIS

FIGURE
2

CITY: SYRACUSE, NY GROUP: ENVCAD DB: R. BASSETT, A.Schilling, W.JONES PM: M. KITTINGER TM/TR: K. POTTER LYR:ON=*;OFF=REF, (FRZ) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 4/15/2010 4:39 PM BY: JONES, WENDY
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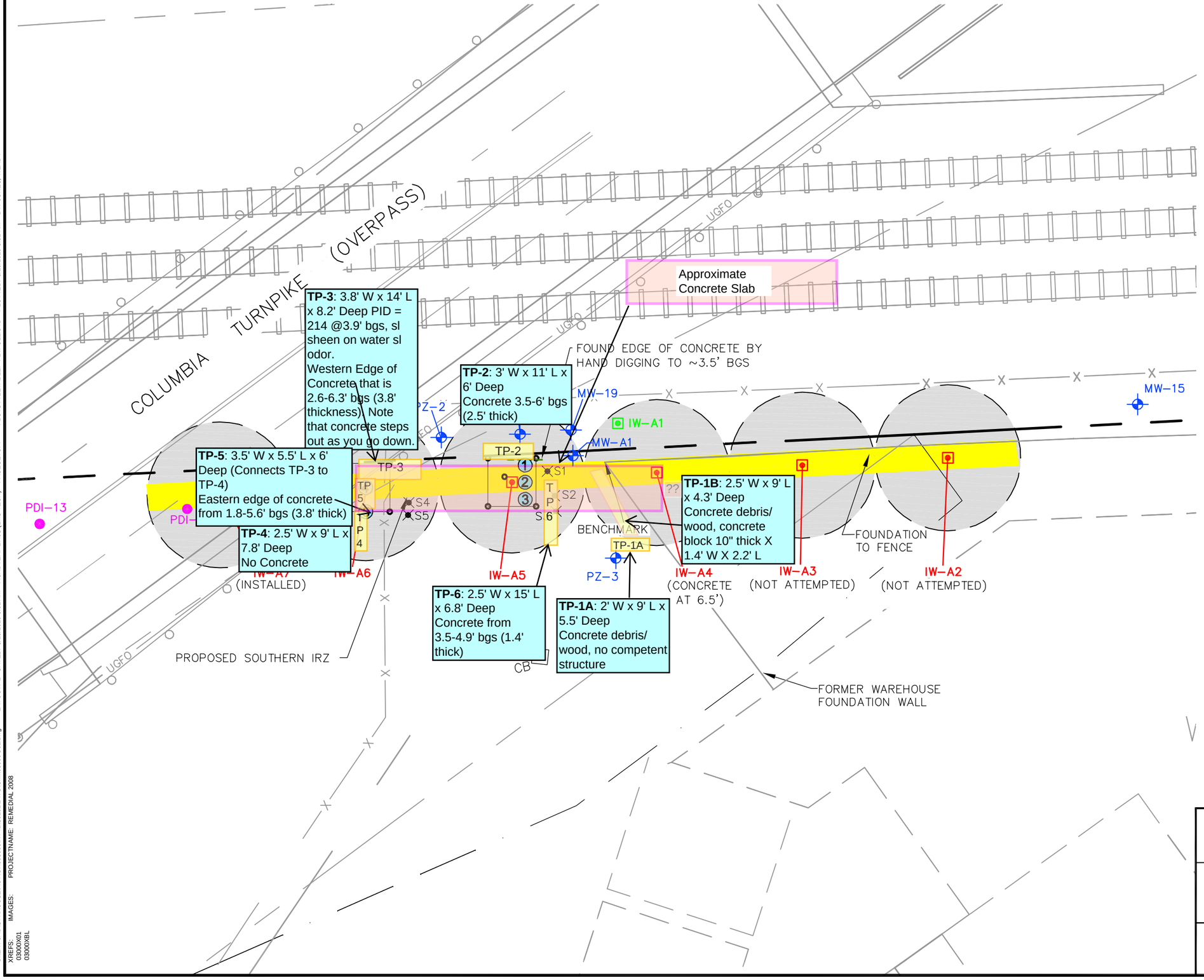

ASHLAND INC.
RENSSELAER, NEW YORK
CMI WORK PLAN

PROPOSED IRZ LOCATIONS

ARCADIS

FIGURE 2

CITY: SYRACUSE, NY GROUP: ENVCAD DB: R. BASSETT; A.Schilling, W.JONES PM: M. KITTINGER TM/TR: K. POTTER LYR:ON=*;OFF=REF; (FR2)
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03000X01
03000XBL

Phase II Notes

OH0003000 N441 Ashland 6/2/10

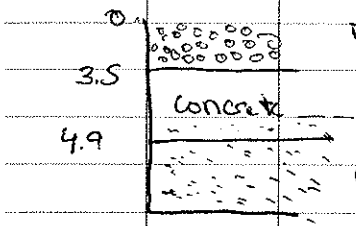
PW. Scraped the Top of the concrete Slab From TP-3 + Found the eastern edge going Towards TP-4 Then determined the Thickness on the eastern Side

Top of Concrete 1.8'
Bottom of Concrete 5.6'
Concrete Thickness 3.8'
NO Step outs

mainly clay in Test pit - Similar to TP-4.

TP-6

Location Runs East/West
~10' South + 3.5 east of mw-A1
~16.8' From the Foundation wall South
~14.0 South of PZ-3 (slightly diagonal)
2.5 wide 15' Long 6.8 deep
Photos 37-40



Top of Concrete 3.5-4'
Concrete Thickness 1.4'

OH0003000 N441 Ashland Renss.
Overcast humid 80's

0900 K. Bidwell onsite. Calls K Potter + starts prepping for the weekly activities.
KB starts measuring out Locations. IW-A6 - IW-A2

0915 Parratt Wolff onsite
1-Truck + trailer 2 guys drill Rig is coming. Lee + JC
PW starts unloading the Trailer KB does a walk through w/ PW + continues to measure out drilling Locations.
Utility Mark outs onsite Premier + empower Level 3
1045 - Premier + empower offsite - They give the okay.
1100 PW offsite to Pratt + Son for the air Compressor. KB talks w/ K. Potter
1115 PW back onsite
1123 PW offsite Lunch
PW drill Rig onsite
1130 All 3 off Site for Lunch

mike wilson 3rd PW

KB 6/28/10

61 OH003000N441 Ashland-Rensselaer

12:15 PW back onsite.

H+S tailgate meeting - overview of the week - walk through again Hawk to mark IW-A6 - auger from the fence ~2' North

PW has no whale pump for develop JC starts hand clearing IW-A6 2 others unload Rig + prep for drilling

Complete hand augering to 5'

PID Start Logging 1253

CO - 10, PID 20, O 20.7 - downhole at IW-A6 0-5'

1300 - Set up the Rig on IW-A6' M. Wilson sets up on IW-A5 + starts hand/Air Knifing to 5'

1430 Complete well drilling to 15'

KB Calls K. Potter to discuss well construction. KB goes over it w/ Lee. PW starts pulling augers + setting the well

- Light Rain

1530 Hand clearing is complete on IW-A6. Start working on the decon Pad. Still construction IW-A6

6/28/10

OH003000N441 Ashland Rensselaer KB

IW-A6

Depth	Time	Recovery	PID	NO
0-5	—	Hand Cleared		—
5-7	1318	0.5	0.7	1
7-9	1322	0.3	0.1	2
9-11	1342	2.0'	0.2	3
11-13	1345	1.8'	0.4	4
13-15	1358	2.0'	0.2	5

CME 55 Lee PenRod (PW)

HSA, split spoon

Stratigraphic Description

5-7 0-0.5 Clay + Silt some to Little sand + Fined gravel Brown/gray wet Soft ~~Strong~~ med odor

7-9 0-0.3 S.A.A.

9-11 0-1.4 Clay some Silt Little F/gravel Brown gray Soft to med dense wet to moist

102 6/28/10 KB

OH0030000N491 Ashland Rensselaer

9-11 1.4-2.0 Clay Little Silt dense Brown w/ gray Lenses dry

11-13 0-0.8 Clay + Silt Little F/ med gravel (Rounded-C) + Sand Soft Moist to wet gray Little Brown
0.8-1.8 F/C Sand Some Silt Little F/ gravel (Rounded) Loose wet Brown

13-15 0-1.2 F/C gravel at Top Loose wet (0-0.1)
0.1-1.2 Clay Little Silt wet to moist gray at top-Soft dense + Brown Less wet w/ gray Lenses

14.2 1.2-2.0 Clay + Silt gray Soft wet

Sump ~~[illegible]~~ KB 15.5-13.5
Screen 13.5'-3.5'
Sand 15.5-2.0
Bent Seal 2.0-1.0
Concrete 1-0

6/28/10

OH0030000N491 Ashland-Rensselaer KB

IW-A6
Well construction
CME 55
8-10"
borehole
updated 9/20/10 KVP by
3.5'
2" injection well
concrete pad (0-1' bgs)
2" Steel stick-up Riser
Bentonite (1-2' bgs)
SAND Pack #0 Morie (2-13.5')
Augered to 15.5
2" 10' S.S Screen 10 Slot
13.5' 3.5
13.5 NATIVE clay 15.5
15.6 13.6
2' 2" PVC Sump

Sand 13.5-2 Chips 2-1
bags 5.0 bent chips ~ 1/2 bag

KB

103 OH003000 N441 Ashland Rensselear 6/28/10

1345 Augers pulled Sand + Bentonite chips are set. Clean up area. Move Soil Filled drums to the Staging area w/ the Rig. drop augers off at the decon Pad

1620 Set the Rig up on IW-A5
1635 Start drilling
1640 Split Spoon to 9' auger to 9'
Clean up For the day

1700 PW OFFSite

1705 KB checks in w/ K Polter
1710 KB Lock up - OFFsite

KB

OH003000N441 6/28/10
CME 55 Lee PenRod (PW)
HSA Split Spoon

IW-A5

Depth	Time	Recovery	PID	NO
0-5	Hand Cleared		—	—
5-7	1638	1.35	0.0	1
7-9	1641	1.60	0.0	2
9-11	0722	1.20	0.2	3
11-13	0725	1.40	0.3	4
13-15	0739	0.6	0.1	5
15-17	0748	1.0	0.0	6
17-19	0755	0.4	0.0	7
15.5-17.5	0830	0.4	0.0	8

Stratigraphic Description

5-7 0-0.7 Clay Little Silt Brown Little gray dense dry (Top 0-0.1 Soft gray trace F/C Sand, + Roots)
0.7-1.35 Clay + Silt some F/med Sand Little F/gravel Soft damp gray
Top .65 empty

					Blow Counts
17-19	0845	0.2	00	9	4588

6/28-6/29

104 OH003000N441 Ashland KB

7-9 0-0.8 Silt some clay + F/c Sand wet gray very soft
0.8-1.2 Clay + Silt trace F/ Sand gray moist soft
1.2-1.6 Clay some silt + F/ Sand Trace F/med gravel (A-SA) gray Loose damp

9-11 0-1.0 Clay + Silt Little F/med gravel (R-A) Soft wet Brown Little gray
1.0-1.2 Clay + Silt some F/c Sand + F/ gravel Soft wet Brown (Top empty)

11-13 0-0.7 Clay + silt trace F/med Sand Lenses mottled gray Brown wet soft
0.7-1.4 Silt some Clay + F/med gravel Loose wet Brown (middle section missing) more gravel at Bottom

13-15 0-0.6 Clay + Silt. Some F/med gravel wet Brown soft SAA- (slough?)

15' Clay in shoe - gray soft

6/29/10

OH003000N441 Ashland KB

15-17 0-0.1 Clay + Sand + gravel + Silt Brown wet Soft
0.1-1.0 Clay Silt trace F/ gravel Med dense wet gray - Brown (wet on outside) (Top empty) ~~Soft gray clay~~ Clay on outside ~~of Shoe~~ of S.spoon KB

17-19 0-0.4 Clay some Silt some Sand + gravel (A-SR) wet Brown-gray Soft gray Clay on outside of the S. Spoon

17-19 - Sump - 15.5-17.5 [Suction ~~no~~ felt when pulling the augers
15.5-17.5 Screen

15.5-17.5 gray clay in Shoe Soft.

17.0-19 - Clay in shoe gray Soft Slough in S. Spoons

IW-AS

Screen	15.5-5.5	PW is very confident
Sand	15.5-3.5	that the clay
Bent	3.5-1.0	Starts @ 15'
Pad	1.0-grade	

105 6/29/10

0700 3000 N441 Ashland Rensselaer KB
Sun high 70's
0650 KB + Parratt Wolff onsite
3-man crew Lee Penrod
Katie Bidwell Mike Wilson
A4-Arcadis Jon Chevalier

1+S Meeting. Prep to continue drilling on IW-A5 KB calibrates the multiRae uses Jack hammer
0715 Start drilling + hand clearing IW A4
0820 Reach 19'- Not sure if we reached the gray clay layer Little Recovery gray clay on the outside of the Spoon. KB discusses this w/ Katherine we ask PW to attempt another Spoon (no 3" available) From 15.5-17.5
KB Calls K. Potter we need to get a S. Spoon From 17-19 + Start collecting Blow Counts.
0840 PW sets up the hammer
M. Wilson works on Completing IW-A6 - guard pipe - Completed
hand digging @ IW-A4
Collect Spoon gray clay in the Shoe discuss well construction

0905 Start well construction on IW-A5

Well Construction

CME 55
8.10" borehole
2" injection well
+2.5' AGS
concrete pad (0-1' BGS)
2" Steel Black Riser
hydrated 9/23/10 KWP
3.5
5.5'
2" 10' S.S Screen 10 slot
15.5-5.5
SAND PACK #0 Morie (3.5-15.5' bgs)
15.5'
NAPL/clay
2' 2" sump PVC
17.5'
15.5-17.5

Sand 15.5-3.5 ch. ps 3.5-1.0
5 bags 8.5' bags 1/2

6/29/10 KB

OH003000N441 Ashland Rec.

PW had trouble pulling the augers had to auger to 17.5' + then start
0930 the well construction
M. Wilson is working on hand Clearing IW-A3
1050 M. Wilson completes the hand Clearing on IW-A3.
augers are pulled + the well IW-A5 is constructed.
Start clearing up.
1100 move drum to staging area Decon augers. Set up in the drilling area IW-A4
Clear out area for IW-A2
1135 Move Rig to IW-A4
1145 offsite Lunch
1235 Back onsite
1245 Start drilling at IW-A4
Start hand clearing Jack hammering @ IW-A2.
1320 Lee (PW) informs KB that he hit concrete at ~6.5'-7.0'+.
KB calls K. Potter. ARCadis decides to either Continue drilling or to

6/29/10

OH003000N441 Ashland Rensselear KB
set off a Little more to the east
PW will continue drilling
1345 2. PW work on gaurd pipe + Cement Pad for IW-A5
1420 Roller bit came off the Rod
us Tremie Rod + water
PW said that ~11.5 there is a piece of Rebar or steel - something harder than concrete - will need to pull augers + abandon the hole.
1445 KB informs K. Potter move to IW-A2
1555 Start drilling IW-A2
1630 drilled down to 21' - no concrete no clay yet. KB talks w/ K Potter. Will Continue drilling.
PW needed to get Decon water. + had to decon some augers to go deeper
1645 Start drilling again
1730 Auger refusal @ 25'
KB Calls K Potter. Drillers clean up for the day - offsite
1800 KB offsite

6/29/10

OH0030000N441 Ashland Rensselear KB

Tw-A4 (1)

Depth	Time	Recovery	PID	NO	Blow Counts
0-5	Hand Cleared		—	—	—
5-7	1253	1.0	0.0	1.0	20.18.20.19
8-(10) 8.6	1345	0.5	0.0	2.0	30.50/1
11.5'	* Refusal *				

CME 55 L. Penrod (Pw

HSA Split Spoon

Stratigraphic description

5-7 0-0.3 Flc Sand Some Silt Little Fl mxd gravel (ASA) Loose wet gray

0.3-1.0 flc Sand + Fl mxd gravel (A-SA) Some silt trace clay Loose wet ~~brown~~ gray (Top 1.0 empty)

~6.5-8.0 concrete

6/29/10

OH0030000N441 Ashland Rensselear KB

8: 8.6

8-10 0-.5 Sand + gravel (ASA) Little Silt + trace clay gray wet Loose. Seems to be inbetween Layers of Concrete

11.5' - Refusal Mental or Rebar ?

Tw-A2

CME 55 L. Penrod (Pw)

HSA Split Spoon

Depth	Blow Counts	Time	Recovery	PID	NO
0-5	Hand Cleared		—	—	—
5-7	1.1.5.2	1458	0.8	0.0	1
7-9	4.4.6.4	1500	1.55	0.0	2
9-11	4.5.5.5	1520	1.0	0.0	3
11-13	7.14.20.18	1530	0.65	0.0	4
13-15	12.14.6.10	1542	0.65	0.0	5
15-17	3.2.2.2	1548	1.20	0.0	6
17-19	3.2.2.7	1600	1.0	0.0	7
19-21	27.16.17.5	1610	0.6	0.0	8
21-23	15.6.14.17	1655	0.8	0.0	9

6/29/10

OH003000 NY41 Ashland - Rensselaer

KB

IW-A2 Strat description

5-7 0-0.2 F/C Sand + Silt, Little F/gravel (A-SA) Wet Loose Brown
0.2-0.5 SAA - Little Clay Red Brick pieces
0.5-0.8 Silt Some Clay Little C/Sand dark gray to gray more Sand @ 0.75 0.80 Soft Wet
7-9 0-0.7 Silt Some Clay, + F/c Sand Wet Soft dark gray
0.7-1.4 Clay Little Silt, damp Med Stiff Brown - mottled green
1.4-1.55 wood
9-11 0-0.5 F/c Sand + gravel (R-A) gray Brown Loose Wet
0.5-1.0 Clay Some Silt, Some f/c Sand Little gravel. F/m Sand Lense @ 0.7 gray Wet Very Soft trace wood in shoe
11-13 0-0.15 F/c Sand Little Silt + Clay Loose Wet Brown
0.15-.65 gravel F/med

6/29/10

OH003000 NY41 Ashland

KB

11-13 0.15-0.65 (A-SA) Loose, Little ~~trace~~ Silt + C/Sand Brown wet

13-15' 0-0.4 Silt + Clay Little wood: trace gravel + Sand dark Brown Wet Soft
0.4-0.65 F/C gravel (A-SA) Little Silt + Clay Brown Wet Loose Stone in Shoe
15-17 F/C Sand + gravel (R-A) Some Silt, Little Clay - to trace Brown to gray at 0.7 - a Little more Clay Wet Loose

17-19 0-1.0 Silt Some Sand + F/med gravel trace Clay Loose gray wet
19-21 0-0.6 F/c Sand + gravel (R-SR) Some to Little Silt trace Clay wet gray Loose
21-23 0-0.4 F/C gravel (A-SR) Some Silt + Clay Little C/Sand gray wet Loose
0.4-0.8 Silt, Little Clay, trace F/gravel Gray Wet Soft

6/29/10

OH003000N441 Ashland KB

IW-A2 - cont..

Depth	Blow counts	Time	Recovery	PID	NO
23-~~24~~25	9, 11, 50/2	1700	0.9	0.0	10
25'	Auger Refusal			—	—

IW-A2 Stratigraphic Des. con.

23-25 0-0.4 F/m Sand + Silt Little Clay, Trace F/gravel (f)

0.4-0.9 F/m Sand Little Silt + gravel (f-SA) trace clay gray wet Loose

24.2 Refusal - dry Sand + gravel gray in Shoe

Auger Refusal @ 25'

Felt like bedrock - Smooth — drilling

6/30/10

OH003000N441 Ashland Penn Star KB

Sun 70's

0710 K Bidwell onsite Parratt Wolff already here. Lee Penrod, Mike Wilson + John Chevalier H+S Tailgate Meeting. The plan for the day is to set up on IW-A3 + find out if there is concrete below the slab, develop wells + wait to hear back on IW-A2.

KB Calibrates Quanta + multi Rae

PW pulls augers + starts decanning → sets Rig up on IW-A3

0820 Start drilling

0855 KB talks w/ K Potter about Setting A-2 well construction similar to IW-A5 ~ Screen depth 9-19.1

0940 Reach 23' on IW-A3. Clay starts @ 19'. Will set the screen at 19.5'. - KB Talks w/ K. Potter M. Wilson was offsite to get drums + water back onsite

10:00 M. Wilson offsite to get more galvd pipe 2" black steel —

6/30/10

OH003000 NY41. Ashland Ren. KB

PW has a bunch of 5' sections but they would rather use 10' sections. drilling depth was suppose to be ~15' not 20-25'

PW stays busy until the guard pipes are back onsite - prep for well installization.

1030 - M. Wilson onsite

1045 well construction in progress.

Start hand clearing - Jack hammering the new location for IW-A4

1200 complete well construction - Lunch

1240 back onsite + working

move the rig to IW-A4 (2)

Decon augers

1335 Start drilling at IW-A4

work on cement pad for IW-A3

1400 IW A4 (2) - Concrete 4-6 - auger refusal - pull augers

move to IW A2 - to complete the hole

1420 hole from yesterday. KB calls K. Potter - M. Wilson starts setting up to develop

6/30/10

OH003000 NY41 Ashland Rensselaer KB

Lee Penrod (PW)

CME-55 HSA Split Spoons

IW-A3

Depth	Blow counts	Time	Recovery	PID	NO
5-7	4 2 2 2	0828	0.60	0.5	1
7-9	3 2 2 6	0830	1.80	7.70	2 * - sampled
9-11	12.11.88	0845	0.90	0.60	3
11-13	5.6 7.4	0853	1.15	0.4	4
13-15	4.8.7.11	0902	0.90	0.1	5
15-17	6 26 15 18	0908	1.0	0.0	6
17-19	7 9 14 9	0920	1.0	0.0	7
19-21	wt of rods / wt of rods / 45	0930	1.70	0.0	8
21-23	5 4 6 7	0940	1.50	0.0	9

IW-A3

Stratigraphic description

0-5 hand cleared

5-7 0-0.6 Silt some clay, some med/c sand + some f/med (R-SR) gravel - little brick gray loose wet

7-9 0-0.2 Silt + med/c sand loose very dark brown wet

0.2-1.80 Silty clay some

6/30/10

111

OH0003000.NY41 Ashland Renss KB

Iw-A3 continued

7-9 0.2-1.80 F/c Sand Some Black med/c Sand Lenses Little F/ gravel (R-SR) Very Soft to Loose wet dark gray odor a Little more gravel - moist @ bottom Trace Red Brick

9-11 0-0.90 Silty Clay Some med/C Sand Little gravel (R-SR) wet dark Brown Soft

11-13 0-1.15 SAA - Silty Clay Some med/c Sand Little F/Med gravel (R-A) wet (gray 0.0.2) Brown Soft

13-15 0-0.9 SAA - Silty clay Brown wet Soft (Some Sand+gravel A3 above)

15-17 0.0.3 SAA. 0.3-1.0 Silt + F/Med gravel (R-A) Little F/c Sand trace clay. Brown wet Loose

17-19 0-1.0 gravel & F/Med (R-A) Some F/c Sand + Silt Brown Very Loose wet

6/30/10

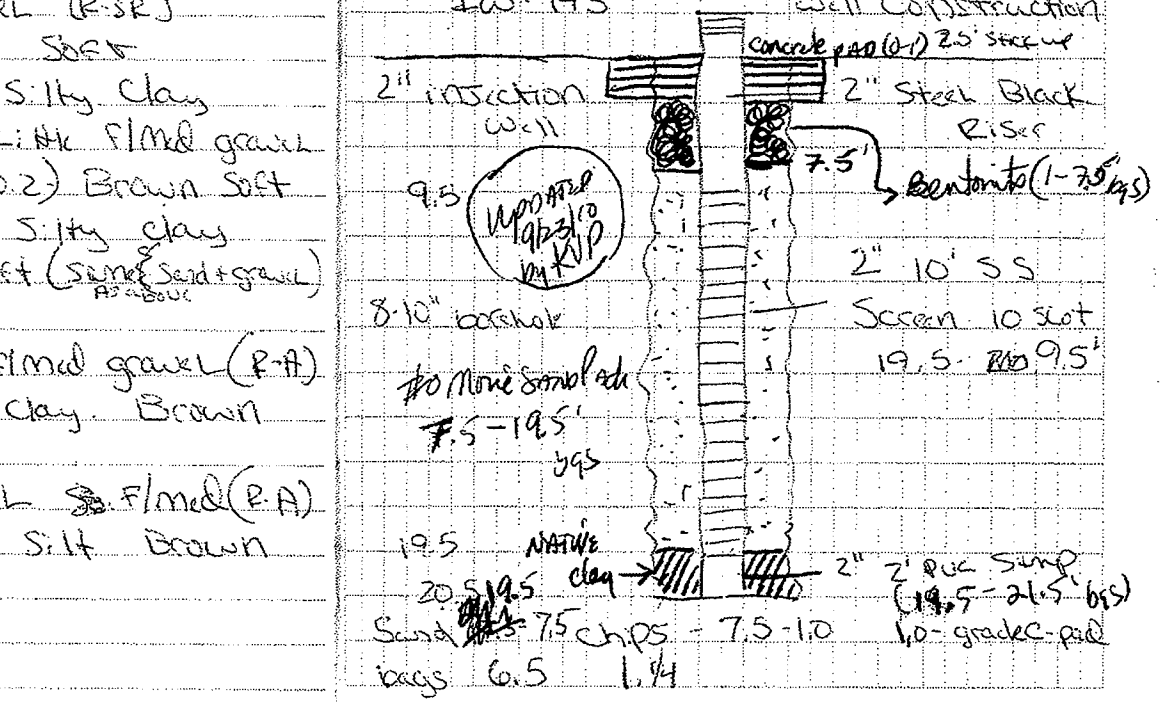
OH0003000 NY41 Ashland Renss KB

Iw-A3 cont. ~~Slough~~

19-21 ~~0-0.5 gravel F/c (R-A) KB Some med/c Sand + Silt Brown wet Loose~~ 0.0-1.70 gray Clay Little Silt wet Soft

21-23 0-1.5 gray clay Little Silt trace F/ Sand + F/ gravel (R) wet.

Iw-A3 well Construction



6/30/10

OH0003000N441 Ashland Rensselaer KB

IW-A4 (2)

Depth	Blow counts	Time	Recovery	PID	ND
0-4.5	hand cleared				
4.5-6.0	Augered - concrete				
	IW-A4-(3) → 7/1				
5-6.7	39,15,5/24	1332	1.0	0.0	1
Auger Refusal			7.0'		

0-4 hand cleared -(3)

5-6.7 0-1.0 gravel (A-1-A) F/med + Med/coars. Sand Little Silt wet Loose gray, Concrete in sh

Auger Refusal at 7.0

6/30/10

OH0003000N441 Ashland Ren KB

1450 K Potter would like RW to attempt IW-A4 5' to the south of the original boring.

RW Starts hand clearing IW-A4(3)

RW - Re-drills down to 25' on IW-A2 + Flushes out the hole

1610 - RW Struggles w/ getting the well. The casing comes up w/ the augers - Lose the 10' screen down the hole

IW-A4 (3) - hard dug to 46'.

Feels like concrete can't get around it

1630 - Pulled well casing out of borehole pulled augers. Tried to put the well casing back down

1650 Fedex Stopped by to pick up the Soil Sample for the Uof Minnesota

1700 Sand Rods down the hole - Trying to Re-connect to the 10' Screen/2" Riser

1820 KB informs K potter RW tries using a whale pump to pump the water out so they can see the Screen

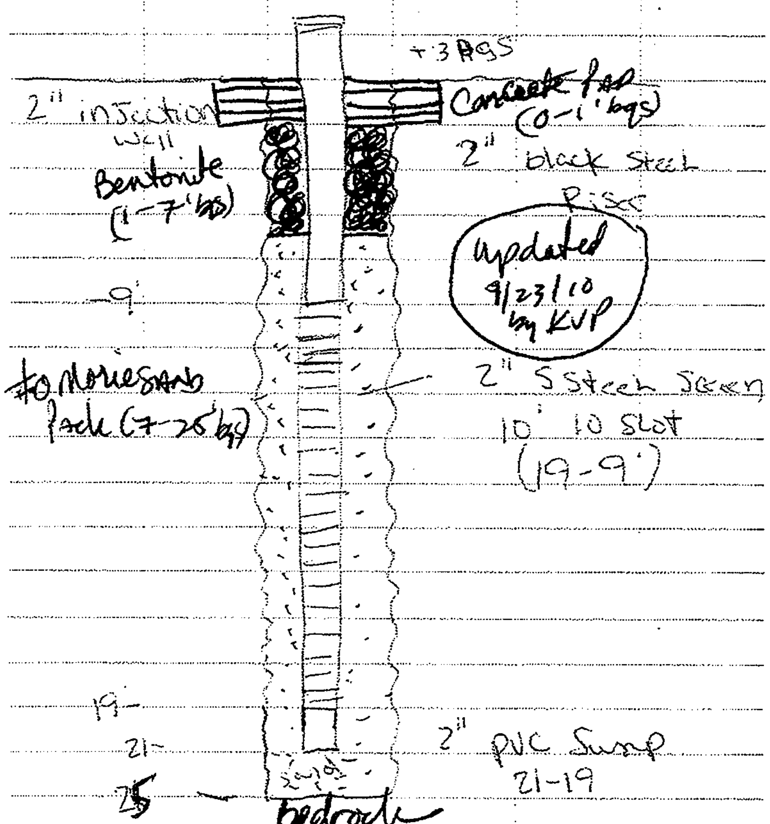
1850 - RW Pulled the screen out

1900 Lock up - OFFSITE

OH003000 NY41 Ashland Ren KB

IW-A2

Well Construction



Sand 25-7' bags ~10

Bent Seal 7-1' ~3

Concrete 1- to grade

OH003000 NY41 Ashland Rensselaer KB

Sun 70's

0640 K. Bidwell + Parratt Wolff onsite
L Penrod, M Wilson J. Chevalier
H+S meeting. PW continues on A-2
Need to send augers down to clean out
the hole + set the screen.
0715 - 1-PW offsite to get water
0740 augers are down IW-A2. Start
well construction again
0805 PW back onsite w/ water
KB Calibrated the MultiRae + Start
prepping for development 1-PW back offsite
0845 Still trying to set the casing in
IW-A2. There are flowing sands +
gravels that keep blocking the hole
when pulled the sump has flowed sand + gravel
in it. Keep flushing it out
0905 KB Talks w/ K Potter to give her an
update
0915 1-PW back onsite w/ drums + water
0945 1 PW Start developing. Casing is set
on IW-A2 Start well construction
1020 KP onsite / EPA onsite 1050
1100 move the rig + Drum. Start deconning
Set up the rig on IW-A4

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OH000300000N441 - Ashland KB

12:00 - Lunch

13:15 Start drilling @ Iw-A4

1345 Auger Refusal at Iw-A4 at 7.0'. K. Potter said that was deep enough. K. Potter takes EPA to the train Station

PW works on development & Cement Pad on Iw-A2 & Cleaning up.

1530 - continue to pick up Load up the Rig.

Iw-A6 & A5 both had 10 vol purged out Iw-A3 ~ 10 gallons have been purged. K Potter conduct an LPO on M. Wilson while he develops Iw-A3.

1545 K. Potter offsite

PW Loads up the Rig & equip

1645 PW offsite. KB Locks up

Katie Bidwell

7/2/10

OH000300000N441 - Ashland Renseker KB

Sun 70's

0630 K. Bidwell onsite Prep For well development.

0650 Lee Penrod w/ Parratt Wolff onsite. H&S Tailgate Meeting. KB Calibrates the Quanta

Start well development on Iw-A6 & A2

Complete Iw-A2, KB moves to Iw-A6 - pumps 5 gallons, takes some Readings Check DTB. DO the same on Iw-A5, Iw-A2 - Recharges Slowly

Lee - cleans up & works on Iw-A2

wrap up Iw-A2 w/ 10 volumes decon & clean up

1210 PW OFFSite

KB walks around & calls K potter. Every thing Looks good Leaves a message For K Potter.

1225 Locks up 11 drums Total

Well Development 7/1-7/2-

Iw-A2		PH 7.04	Iw16
DTW 8.53		Temp 22.46	21.6
DTB 23.80		SP cond 1.490	
10 vol 24.40 gal		DO 4.78	

Clear no odor Flows cont. @ 215 mL

Wrake Pump / Swgs Block

115 KB

OH0003000.N441 - Rensselaer 7/2/10
Well Development

IW-A3

DTW 7.15 Surge block / whale pump
DTB 24.15 10 Volumes = 27.13 @ 30 gallons
PH Temp SP Cond (ms/cm) DO Turb
6.79 20.87 1.486 2.59 99.3
Cloudy Brown - Ran dry

IW-A5

DTW 3.93 Surge block / whale pump
DTB 20.13 10 vol = 25.92
PH Temp SP cond (ms/cm) DO Turb @ 25 gallons
6.45 23.32 1.60 2.06 173
Brown - close to running dry

IW-A6

DTW 6.17 Surge Block / whale pump
DTB 17.17 10 vol = 17.6
PH Temp SP-con DO Turb
6.96 21.64 1.59 2.40 252 @ 25 gal.
Cloudy to Brown / Runs dry

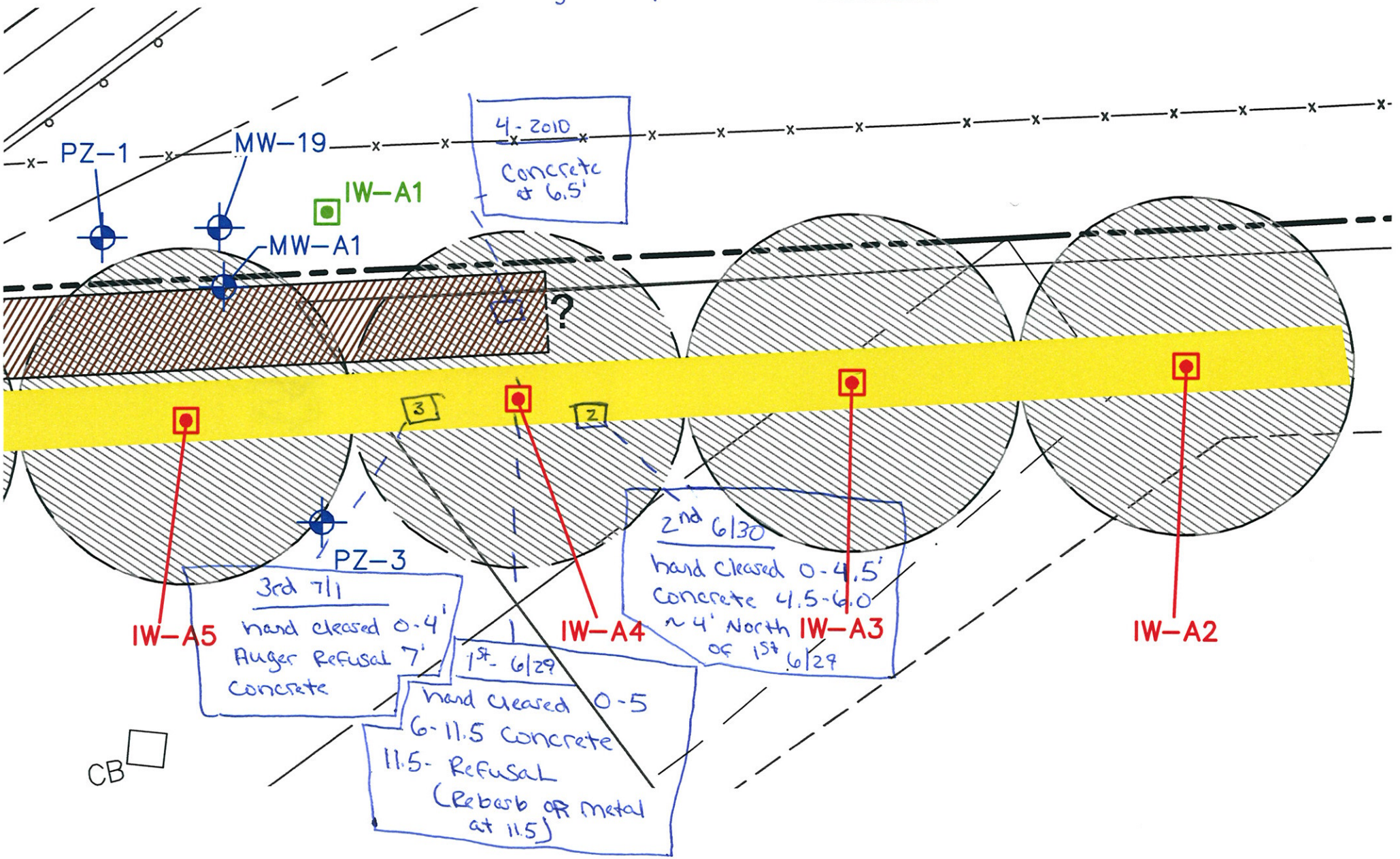
7/6/2010

11:00 - KB + Kenny from Thew Assoc. DO a walk through on the new wells - (injection)
1130 KB offsite

Ashland- Rensselaer
OH003000N441

K. Bidwell

Drilling attempts at IW-A4



ARCADIS

Document Control Number:TGM - OH000300.NY41
TGM + *project number plus date as follows: xxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland			Project Location: Rensselaer, NY
Date: 6/28/10	Time: 1030	Conducted by: Katie Bidwell	Signature/Title: Katie Bidwell
Client: Ashland		Client Contact: Jim Vantrease k	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Mark out Locations 3 drill + install wells 5
2 hand clear 5' 4 Split Spoons 6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☑ Field teams to "dirty" JLAs, as needed?	☑ All equipment checked & OK?
☑ Staff has appropriate PPE?	☐ Staff knows Emergency Plan (EAP)?	☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L M H) — Slips, trips	☑ Motion (i.e., traffic, moving water) (L M H)	☑ Mechanical (i.e., augers, motors) (L M H) — augers
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L M H) — heat
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L M H) — Sun
☑ Sound (i.e., machinery, generators) (L M H) — drill Rig	☑ Personal (i.e. alone, night, not fit) (L M H) — alone	☑ Driving (i.e. car, ATV, boat, dozer) (L M H) — on/offsite

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - *(See statements below)*

✓ Elimination	☐ Substitution	☐ Isolation
✓ Engineering controls	☐ Administrative controls	☐ Monitoring
✓ General PPE Usage	✓ Hearing Conservation	☐ Respiratory Protection
✓ Personal Hygiene	☐ Exposure Guidelines	✓ Decon Procedures
✓ Emergency Action Plan (EAP)	☐ Fall Protection	☐ Work Zones/Site Control
☐ JLA to be developed/used *(specify)*	☐ LPO conducted *(specify job/JLA)*	☐ Traffic Control
☐	☐	☐ Other *(specify)*
☐	☐	☐

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
John Chevalier / Parratt Wolff Inc / [signature]	F 12:13PM		JC
Mike Wilson / Parratt Wolff Inc [signature]	MDW 12:15pm		MDW
Lee Penrod - PARRATT-WOLFF [signature]	LP 12:15		LP

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OH003000.NY41
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland			Project Location: Rensselaer, NY
Date: 6/29/10	Time: 0700	Conducted by: Katie Bidwell	Signature/Title: Katie B. Dwell
Client: Ashland		Client Contact: Jim Vondracek	Subcontractor companies: Parratt Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 drilling
2 well construction
3 hand clearing
4
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☐ Gravity (i.e., ladder, scaffold, trips) (L) M H) Slips, trips	☑ Motion (i.e., traffic, moving water) (L) M H) Traffic	☑ Mechanical (i.e., augers, motors) (L M) H) augers
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L) M H) heat
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L) M H) Sun
☑ Sound (i.e., machinery, generators) (L M H) Drill Rig, Compressor	☑ Personal (i.e. alone, night, not fit) (L) M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - *(See statements below)*

[✓] Elimination	[ ] Substitution	[ ] Isolation
[✓] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[✓] General PPE Usage	[✓] Hearing Conservation	[ ] Respiratory Protection
[✓] Personal Hygiene	[ ] Exposure Guidelines	[✓] Decon Procedures
[✓] Emergency Action Plan (EAP)	[ ] Fall Protection	[ ] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
		[ ] Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Lee Penrod Parratt-Wolff Lee Penrod	LP 7:00		L.P
John Chevalier Parratt Wolff	JC 7:00		J.C
Mike Wilson Parratt Wolff	MDW 7:00		MDW

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today: _____
- [ ] Incidents that occurred today: _____
- [ ] Any Stop Work interventions today? _____
- [ ] Corrective/Preventive Actions needed for future work: _____
- [ ] Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OHio3000 N441
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland			Project Location: Perrysburg
Date: 6/30/10	Time: 0710	Conducted by: Katie Bidwell	Signature/Title: Katie Bidwell
Client: Ashland		Client Contact: Jim Vondracek	Subcontractor companies: Barrett Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Drilling (S. Spoons) 3 Development 5
2 Decon 4 Well construction 6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☐ Gravity (i.e., ladder, scaffold, trips) (L M H) Slips Trips	☑ Motion (i.e., traffic, moving water) (L M H) Traffic outside site	☑ Mechanical (i.e., augers, motors) (L M H) augers
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L M H) heat
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L M H) Sun
☑ Sound (i.e., machinery, generators) (L M H) machinery	☑ Personal (i.e. alone, night, not fit) (L M H) alone	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - *(See statements below)*

[✓] Elimination	[ ] Substitution	[ ] Isolation
[✓] Engineering controls	[ ] Administrative controls	[ ] Monitoring
[✓] General PPE Usage	[✓] Hearing Conservation	[ ] Respiratory Protection
[✓] Personal Hygiene	[ ] Exposure Guidelines	[✓] Decon Procedures
[✓] Emergency Action Plan (EAP)	[ ] Fall Protection	[ ] Work Zones/Site Control
[ ] JLA to be developed/used *(specify)*	[ ] LPO conducted *(specify job/JLA)*	[ ] Traffic Control
		[ ] Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Lee Penrod - PARRATT-WOLFF - Lee Penrod	7:00		LP
Mike Wilson Parratt Wolff Mike Wilson	7:00		MW
John Chevalier Parratt Wolff John Chevalier	7:00		JC

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

	In	Out
	In	Out
	In	Out
	In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- [ ] Lessons learned and best practices learned today: _____
- [ ] Incidents that occurred today: _____
- [ ] Any Stop Work Interventions today? _____
- [ ] Corrective/Preventive Actions needed for future work: _____
- [ ] Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - ONA003000.1441
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland			Project Location: Rensselaer, NY
Date: 7/1/10	Time: 0645	Conducted by: Katie Bidwell	Signature/Title: Katie Bidwell
Client: Ashland		Client Contact: Jim Vondracek	Subcontractor companies: Parsons, Wolff

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 drilling, well construction, well development
2 decon
4 well completion
5
6

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here:

How will they be controlled?

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☑ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Topics from Corp H&S to cover?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ Any Stop Work Interventions yesterday?
☑ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ If deviations, notify PM & client
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☑ All equipment checked & OK?
		☑ Staff knows gathering points?

Comments:

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L (M) H) Slips + trips	☑ Motion (i.e., traffic, moving water) (L) M H) Traffic - offsite	☑ Mechanical (i.e., augers, motors) (L (M) H) augers
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L) M H) heat
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L (M) H) Sun
☑ Sound (i.e., machinery, generators) (L (M) H) Machinery	☑ Personal (i.e. alone, night, not fit) (L) M H) Alone	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

✓ Elimination	Substitution	Isolation
✓ Engineering controls	Administrative controls	Monitoring
✓ General PPE Usage	✓ Hearing Conservation	Respiratory Protection
✓ Personal Hygiene	Exposure Guidelines	✓ Decon Procedures
✓ Emergency Action Plan (EAP)	Fall Protection	Work Zones/Site Control
JLA to be developed/used *(specify)*	LPO conducted *(specify job/JLA)*	Traffic Control
		Other *(specify)*

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign In Time	Initial & Sign out Time	I have read and understand the HASP
Mike Wilson Parratt Wolff	MW 6:45		MW
Lee Penrod PARRATT-WOLFF	T.P. 6:45		T.P.
John Chevalier Parratt Wolff	JC 645		JC

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

ARCADIS

Document Control Number:TGM - OH003000.N441
TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: Ashland			**Project Location:** Penns Neck
Date: 7/6/10	**Time:** 11:00	**Conducted by:** Katie Bidwell	**Signature/Title:** Katie Bidwell / Sci II
Client: Ashland		**Client Contact:** Jim	**Subcontractor companies:** Thew Assoc.

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 Surveying new wells 3 _____ 5 _____

2 _____ 4 _____ 6 _____

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: None

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☑ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☐ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Any Stop Work Interventions yesterday?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ If deviations, notify PM & client
☐ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☑ All equipment checked & OK?
☑ Staff has appropriate PPE?	☑ Staff knows Emergency Plan (EAP)?	☐ Staff knows gathering points?

☐ Topics from Corp H&S to cover?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☑ Gravity (i.e., ladder, scaffold, trips) (L M H) Slips, Trips	☐ Motion (i.e., traffic, moving water) (L M H)	☐ Mechanical (i.e., augers, motors) (L M H)	
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☑ Environment (i.e., heat, cold, ice) (L M (H)) Heat	
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☑ Radiation (i.e., alpha, sun, laser) (L (M) H) Sun	
☐ Sound (i.e., machinery, generators) (L M H)	☑ Personal (i.e. alone, night, not fit) ((L) M H) Horn.	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)	

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

✓ Elimination	☐ Substitution	☐ Isolation
✓ Engineering controls	☐ Administrative controls	☐ Monitoring
✓ General PPE Usage	☐ Hearing Conservation	☐ Respiratory Protection
✓ Personal Hygiene	☐ Exposure Guidelines	☐ Decon Procedures
☐ Emergency Action Plan (EAP)	☐ Fall Protection	☐ Work Zones/Site Control
☐ JLA to be developed/used *(specify)*	☐ LPO conducted *(specify job/JLA)*	☐ Traffic Control
☐	☐	☐ Other *(specify)*
☐	☐	☐

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign In Time	Initial & Sign out Time	I have read and understand the HASP
Kenneth Merritt THEV Assoc	1030		KM

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3766.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work Interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental Ashtead Model RS784 Serial Multi Rae Plus

Project # OH003000.NY41

Date 6/29/2010

Time 0705

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	1.1	✓
Span	100	✓

Parameter D.O.	Calibration Successful
100% Saturated Air	
Barometer Adjustment	
Elevation Adjustment	

ph (si Units)		
4.00		
7.00		
10.00		

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Multi Rae Plus

Co 0.0	CO 48
LEL 0.0	LEL 49
O_2 20.9	O_2 —
H_2S 0.0	H_2S 25

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

INSTRUMENT CALIBRATION FORM

[ ] Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	[ ] Turbidity Meter Model 2020 Lamotte Serial 3597-3502	[ ] D.O. Meter Model #55/25 FT Serial 00H0611	[ ] ORP Meter Model 00702-70 Serial 55386
[✓] Multiprobe Quanta ARCADIS	[✓] Turbidity Meter Model 2020 Lamotte Serial Ashtead Rental	[ ] D.O. Meter Model Serial	[ ] ORP Meter Model Serial
[ ] PID Model Photovac 2020 Serial ED HF 358	[ ] PID Model Photovac 2020 Serial	[ ] pH Cond Temp Model Oakton 300 Series Serial 197765	[✓] Rental Ashtead Model Multi Rae Serial R8784

Project # OH003000 N441

Date 6/30/2010

Time 0730

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.8	✓
Span	101	✓

Parameter D.O.		Calibration Successful
100% Saturated Air	100	✓
Barometer Adjustment	760	✓
Elevation Adjustment		

ph (si Units)		
4.00	4.10	4.00
7.00	7.08	7.00
10.00	10.02	10.00

* ORP (Mv)		
Hydroquinone (240) (Black)		
Zobel Solution (~~237~~ 240) (yellow)	252	240
Temperature Based Chart Calibration		
* Adjusted		

Conductivity (umhos)		
84 umhos		
1413 uhmos	1.411	1.413
Other		

* No adjustment on some meters just a probe check, others are adjustable

Fresh Air 995

CO 00	CO 49
LEL 00	LEL 49
H_2S 0.0	H_2S 25
O_2 20.9	O_2 —

Turbidity (NTU)		
1.0 NTU	0.79	1.0
10 NTU	9.95	10.00
40 NTU		
Other	0.0	0.0

INSTRUMENT CALIBRATION FORM

☐ Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	☐ Turbidity Meter Model 2020 Lamotte Serial 3597-3502	☐ D.O. Meter Model #55/25 FT Serial 00H0611	☐ ORP Meter Model 00702-70 Serial 55386
☐ Multiprobe Quanta ARCADIS	☐ Turbidity Meter Model 2020 Lamotte Serial	☐ D.O. Meter Model Serial	☐ ORP Meter Model Serial
☐ PID Model Photovac 2020 Serial ED HF 358	☐ PID Model Photovac 2020 Serial	☐ pH Cond Temp Model Oakton 300 Series Serial 197765	☑ Rental Multi Rae Model Ashtead Serial R8784

Project # OH003000.1441

Date 7/1/2010

Time 0715

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	0.0	✓
Span	96.7	✓

Parameter D.O.	Calibration Successful	
100% Saturated Air		
Barometer Adjustment		
Elevation Adjustment		

ph (si Units)		
4.00		
7.00		
10.00		

* ORP (Mv)		
Hydroquinone (240) (Black)		
Zobel Solution (237) (yellow)		
Temperature Based Chart Calibration		
* Adjusted		

Conductivity (umhos)		
84 umhos		
1413 uhmos		
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Multigas	Fresh air
CO 49	CO 0.0
LEL 50	LEL 0.0
H_2S 25	H_2S 0.0
	O_2 20.9

Turbidity (NTU)		
1.0 NTU		
10 NTU		
40 NTU		
Other		

INSTRUMENT CALIBRATION FORM

[ ] Ph Cond Tempmeter Model Oakton 300 Services Serial 121686	[ ] Turbidity Meter Model 2020 Lamotte Serial 3597-3502	[ ] D.O. Meter Model #55/25 FT Serial 00H0611	[ ] ORP Meter Model 00702-70 Serial 55386
[✓] Multiprobe Quanta ARCADIS	[ ] Turbidity Meter Model 2020 Lamotte Serial	[ ] D.O. Meter Model Serial	[ ] ORP Meter Model Serial
[ ] PID Model Photovac 2020 Serial ED HF 358	[ ] PID Model Photovac 2020 Serial	[ ] pH Cond Temp Model Oakton 300 Series Serial 197765	[ ] Rental Model Serial

Project # OH003000.NY41

Date 7/2/10

Time 0610

Personnel KB

Check appropriate box for equipment calibrated. If two similar items are calibrated, please note two checks under calibration successful

Parameter PID (ppmv)		Calibration Successful
Zero	—	—
Span	—	—

Parameter D.O.	Calibration Successful
100% Saturated Air	100 %
Barometer Adjustment	760
Elevation Adjustment	

ph (si Units)		
4.00	3.88	4.00
7.00	7.05	7.00
10.00	—	—

* ORP (Mv)	
Hydroquinone (240) (Black)	
Zobel Solution (237) (yellow)	245-240
Temperature Based Chart Calibration	
* Adjusted	

Conductivity (umhos)		
84 umhos		
1413 uhmos	1.431	1.413
Other		

*** No adjustment on some meters just a probe check, others are adjustable**

Turbidity (NTU)		
1.0 NTU	1.09	1.0
10 NTU	9.98	10.0
40 NTU		
Other	0.0	0.0

Site

WELL DEVELOPMENT LOG

Event

Sampling Personnel: Kate Bidwell / Pasratt Wolff
Well ID: TW-AZ
Client / Job Number: OH003000.0441
Date: 7/2/10
Weather: Sun 60°S
Time In: Time Out:

Well Information

Depth to Water:	(feet)	8.53	(from MP)
Total Depth:	(feet)	23.80	(from MP)
Length of Water Column:	(feet)	15.27	
Volume of Water in Well:	(gal)	2.44 24.40	

Well Type:		Flushmount		(Stick-Up)
Well Material:		(Stainless Steel)		PVC
Well Locked:		(Yes)		No
Measuring Point Marked:		Yes		(No)
Well Diameter:	1"	(2")	Other:	

Purging Information

Purging Method	Bailer	Peristaltic	Waterra	Other: whale
Tubing/Bailer Material:	Steel	(Polyethylene)	Waterra	Other:
Duration of Pumping:	(min)			
Average Pumping Rate:	(ml/min)		Water-Quality Meter Type:	~~Horiba U-22~~/LaMotte 2020
Total Volume Removed:	(gal)		Did well go dry:	Yes No

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet

Parameter:	1	2	3	4	5	6	7	8	9	10	11	12	13
Volume Purged (gal)	10	7.0	20	22.5	23.5								
Rate (mL/min)	—	—	—	215 mL	215								
Depth to Water (ft.)	—	—	—	22.93	22.85								
pH	7.31	7.16	7.00	-	7.04								
Temp. (C)	16.65	16.13	21.14	-	22.46								
Conductivity (mS/cm)	0.388	0.538	1.085	—	1.490								
Dissolved Oxygen (mg/L)	0.31	0.48	3.36	—	4.78								
Turbidity (NTU)	>6000	>6000	343	85	21.6								
Notes:	dark Brown →				clear								

Problems / Observations

Soft Bottom

Surge Block 10 min

0742 Start Purging

0903-904 Purged ~1/2 gallon

Ran dry

Recharge

0852 21.65

0902 19.35

1040 First 2.5 gallons purge out Fast - then the water Pulses

Slow Steady Stream

1120 DTW 22.93

1140 22.79

Site

WELL DEVELOPMENT LOG

Event

Sampling Personnel: Katie Bidwell / Parratt Wolff
Well ID: IW-A3
Client / Job Number: Ashland / 60600300 NW41
Date: 7/1/10
Weather: Overcast 65°
Time In: — Time Out: —

Well Information

Depth to Water:	(feet)	7.19	(from MP)
Total Depth:	(feet)	24.15	(from MP)
Length of Water Column:	(feet)	16.96	
Volume of Water in Well:	(gal)	2.71	

10 Volumes = 27.13

Well Type:		Flushmount	(Stick-Up)	
Well Material:		(Stainless Steel)	PVC	
Well Locked:		(Yes)	No	
Measuring Point Marked:		Yes	(No)	
Well Diameter:	1"	(2")	Other:	

Purging Information

Purging Method:	Bailer	Peristaltic	Waterra	Other: Whale	
Tubing/Bailer Material:	Steel	(Polyethylene)	Waterra	Other:	
Duration of Pumping:	(min)				
Average Pumping Rate:	(ml/min)		Water-Quality Meter Type:	~~Horiba U-22~~/Quanta/LaMotte 2020	
Total Volume Removed:	(gal)	30	Did well go dry:	(Yes)	No

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet				

Parameter:	1	2	7/2 3	4	5	6	7	8	9	10	11	12	13
Volume Purged (gal)	0	7	13	~~20~~	20	25	30						
Rate (mL/min)	—	—	—	~~1600~~	1600	1100	1600						
Depth to Water (ft.)	—	—	—	—	—	—	—						
pH	6.86	6.89	6.75	—	6.84	6.79	6.79						
Temp. (C)	16.98	17.10	16.55	—	19.11	24.50	20.89						
Conductivity (mS/cm)	1.087	1.471	1.57	—	1.486	1.336	1.486						
Dissolved Oxygen (mg/L)	0.24	4.85	1.56	—	5.42	2.84	2.59						
Turbidity (NTU)	~~1000~~	~~1000~~	~~1000~~	5719	620	199	99.3						
Notes:	Brown →			2837	Recharge Lt Brown		Cloudy Brown no Purging						

Medium odor

Recharge
0814 DTW 19.85
0818 DTW 15.85
0822 DTW 13.72
0828 DTW 10.15

Problems / Observations

Soft Bottom, Surge block ~10 min
1442 - Start
1444 - Ran dry ~ 3.5 gallons
1450 - 1453 4.0 gallons
3.5

Runs dry
Start 0830 - 0847 Dry (1.75) Battery died may have gone longer / faster
1100 mL/min - 400mL/min
~ 4 gallons

0907 DTW 8.80
Start pumping
0912 - 0917 - 5 gallons

DTB
24.15
Med hard

G:\Div 11\LGT\Misc\Sample forms

buckets (4 gall) ||||

Arcadis BBL

Site | **WELL DEVELOPMENT LOG** | Event

Sampling Personnel:	Katie Bidwell / Prescott Wolff	Well ID:	I.W. A5
Client / Job Number:	Ashland / 0H003000 N4Y1	Date:	7/1/10
Weather:	overcast 70°	Time In:	Time Out:

Well Information

Depth to Water:	(feet)	3.93	(from MP)
Total Depth:	(feet)	20.13	(from MP)
Length of Water Column:	(feet)	16.20	
Volume of Water in Well:	(gal)	2.59	
		25.92 = 10 volumes	

Well Type:	Flushmount	(Stick-Up)	
Well Material:	(Stainless Steel)	PVC	
Well Locked:	(Yes)	No	
Measuring Point Marked:	Yes	(No)	
Well Diameter:	1"	(2")	Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Waterra	Other: Whale
Tubing/Bailer Material:	Steel	(Polyethylene)	Waterra	Other:
Duration of Pumping:	(min)			
Average Pumping Rate:	(ml/min)		Water-Quality Meter Type:	Quanta ~~Horiba U-22~~/LaMotte 2020
Total Volume Removed:	(gal) 26		Did well go dry:	Yes (No) got close to going dry

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet

Parameter:	1	2	3	7/2 4	5	6	7	8	9	10	11	12	13
Volume Purged (gal)	5.0	10	15	25									
Rate (mL/min)	—	—	—	—									
Depth to Water (ft.)	—	—	—	—									
pH	6.45	6.30	6.34	6.45									
Temp. (C)	15.76	15.61	18.06	23.32									
Conductivity (mS/cm)	1.58	1.71	1.71	1.60									
Dissolved Oxygen (mg/L)	0.93	1.23	1.65	2.06									
Turbidity (NTU)	>1000	>1000	>1000	1736									
Notes:	Brown	Brown	Brown										

Problems / Observations

Soft Bottom - Silty
Surge Block 5 min
Start: 1051 - 11:17 - 11 gallons
Started to get Low
Recharged - until 1330
Purged 4

7/2
DTW 4.24
DTB 20.13
Start 10:22 - 1025 5 gallons
1025 14.35
1030 10.20
1038 9.00
1058 5.87

卌

Site

WELL DEVELOPMENT LOG

Event

Sampling Personnel: Katie Bidwell / Perratt Wolff
Well ID: I-W-A6
Client / Job Number: Otto 3000 N441
Date: 7/1/2010
Weather: Overcast 70°
Time In: Time Out:

Well Information

Depth to Water:	(feet)	6.17	(from MP)
Total Depth:	(feet)	17.17	(from MP)
Length of Water Column:	(feet)	11.00	
Volume of Water in Well:	(gal)	1.76	

10 vol = 17.6

Well Type:		Flushmount		(Stick-Up)
Well Material:		(Stainless Steel)		PVC
Well Locked:		(Yes)		No
Measuring Point Marked:		Yes		(No)
Well Diameter:	1"	(2")	Other:	

Purging Information

Purging Method:	Bailer	Peristaltic	Waterra	Other: what
Tubing/Bailer Material:	Steel	(Polyethylene)	Waterra	Other:
Duration of Pumping:	(min)			
Average Pumping Rate:	(ml/min)		Water-Quality Meter Type:	Quanta ~~Horiba U-22~~/LaMotte 2020
Total Volume Removed:	(gal) 25		Did well go dry:	(Yes) No

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3785 ml = 0.1337 cubic feet

Parameter:	1	2	3	4	5 7/2	6	7	8	9	10	11	12	13
Volume Purged (gal)	0	To	10		25								
Rate (mL/min)	—	—			1gal/min								
Depth to Water (ft.)	—	—			—								
pH	6.84	6.68	6.88		6.96								
Temp. (C)	15.34	15.38	16.13		21.64								
Conductivity (mS/cm)	1.236	1.410	0.670		1.59								
Dissolved Oxygen (mg/L)	0.64	1.64	5.12		2.40								
Turbidity (NTU)	>1000	>1000	>1000		252								
Notes:	Brown	Brown	Brown		starts going	out to brown	Cloudy	before	Running		dry		

Problems / Observations

Med hard Bottom
Surge Block · 20 min
Started 10:06
Stop 10:24 – Dry (8 gall)
Rec dry - 16 gallons

7/2
DTW 5.67
DTB 17.18
0944 - 0948 - 5 gallons
Turbidity 252 NTU
No surging

↳ DTW · 13.48
0956 8.59
10.08 6.75

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AIR MONITORING LOG

Project Number:	Weather:	Date:
OH003000.NY41	Overcast very humid 80°s	6/28/17 - 6/29
Project Name:	**Location of Project:**	
Ashland Distribution Company	Rensselaer, New York	
Personnel Present:		
Katie Bidwell + Parratt Wolff 3-man crew		

Time	Background (Upwind of Work Zone)						Work Zone						Off-Site (Downwind of Work Zone)					
	PID	PDR	O_2	LEL	CO	H_2S	PID	PDR	O_2	LEL	CO	H_2S	PID	PDR	O_2	LEL	CO	H_2S
down not IW-A6																		
1250	3.0	—	20.9	0	3.0	0	2.0	—	20.7	0	1.0	0	0		20.7	0	0	0
1317	0	—	20.9	0	0	0	0.0	—	20.9	0	0	0	0	—	20.9	0	0	0
1335	0	—	20.9	0	0	0	0.0	—	20.9	0	1	0	0	—	20.9	0	0	0
1430 well 60.75+	0	—	20.9	0	0	0	0.0	—	20.9	0	0	0	0	—	20.9	0	0	0
1440	0	—	20.9	0	60	0	220	—	20.6	0	64	0	0	—	20.9	0	0	0
		—						—										
		—																
6/29 0710	0.1	—	20.9	0	2	0	0.2	—	20.9	0	0	0	0	—	20.9	0	1	0
0745	0.0		20.9	0	0	0	0.0	—	20.9	0	0	0	0	—	20.9	0	0	0
stopped drilling 0845																		
1050	well construction Complete																	
1245	start Logging out					IW-A4												
1300	0	—	20.9	0	2.0	0	0	—	20.9	0	2	0	0	—	20.9	0	2	0
* 1330	0	—	20.9	0	2.0	0	0	—	20.9	0	2-3	0	0	—	20.9	0	2	0
1409	0	—	21.2	0	2.0	0	0	—	21.2	0	2-3	0	0	—	21.2	0	2	0
1450 *	moved to IW-A2																	

Light rain in Sch. bag 9-11

Note:

Work Zone PID action level = 5 ppm or greater sustained period of 15 minutes or greater.

Downwind Perimeter PID action level = 5 ppm above background for 15 minutes.

Downwind Perimeter PDR (ug/m3) action level = 100 ug/m3 above background for 15 minutes.

PDR Units = ug/m3

PID Units = ppm

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AIR MONITORING LOG

Project Number: OH003000.NY41	Weather: Sun 70°s Light N Breeze	Date: 6/30/2010 7/1/10
Project Name: Ashland Distribution Company	Location of Project: Rensselaer, New York	
Personnel Present: Katie Bidwell		

Time	Background (Upwind of Work Zone)						Work Zone						Off-Site (Downwind of Work Zone)					
6/30/10	PID	PDR	O_2	LEL	CO	H_2S	PID	PDR	O_2	LEL	CO	H_2S	PID	PDR	O_2	LEL	CO	H_2S
0822	Start Logging																	
0952	Stopped drilling																	
1335	Start drilling @			IW-A4														
1830	Turned monitor off																	
7/1/10	Set up @			IW-A2														
0730	Start																	
0810	0.0	—	20.9	0	0	0	2.3	—	20.9	0	3	0	0.2	—	20.9	0	1	0
0825	near Rig exhaust																	
0840	0.0	—	20.9	0	0	0	0.8	—	20.9	0	1	0	0.1	—	20.9	0	0	0
0900	0.1	—	20.9	0	0	0	1.1	—	20.9	0	1	0	0	—	20.9	0	0	0
0930	0.0	—	20.9	0	1	0	0.0	—	20.9	0	1	0	0.0	—	20.9	0	1	0

DW-A3

tion level = 5 ppm or greater sustained period of 15 minutes or greater.

ID action level = 5 ppm above background for 15 minutes.

PDR (ug/m3) action level = 100 ug/m3 above background for 15 minutes.

Week ending: 7/4/10

Project: Ashland Rensselear
Project number: OH00300 NY 41
Site: Ashland - Rensselear NY
Boring/Well ID: IW A2, A3, A5, A6

Prepared by: Katie Bidwell
Drilling contractor: Pascatti Wolff
Drilling method: HSA CME 55
Driller: Lee Penrod
Helper: John Chevalier Mike Wilson

Item	Unit	Mon 6/28	Tues 6/29	Wed 6/30	Thurs 7/1	Fri	Weekly Total
Mobe/Demobe	lump sum	1-Rig 1-Truck/Trailer			Rig offsite	Truck + Trailer offsite	
Rig set-up	per well	A6 A5	A5 A4 A2	A3 A4(2)	A2 A4(3)		
Drilling	per foot	10' 4'	12' 11.5' 20'	18' 6.7	20'-Redrill 7.0'		109.2
Split spoons	each	5 2'	7' 2' 10'	9' –	1		36
GW samples	each	—	—	—	—	—	—
Gamma log	each	—	—	—	—	—	—
Screen	per foot	10' S.S —	10' — —	10' –	10' –		40
Casing	per foot	5' –	8' – –	12' –	12' –		37
Gravel pack	per foot	—					
Sand seal	per foot	11.5' –	13.5' – –	12' –	18' –		55
Bentonite seal	per foot	1.0' –	2.5' –	6.5' –	6' –		16
Bentonite grout	per foot	–	—	—	—	—	—
Cement grout	per foot	1.0' –	1.0' –	1.0 –	1.0' –		4

Item	Unit	Mon	Tues	Wed	Thurs	Fri	Weekly Total
Well finishing/ manhole	per well						4
Development	per hour				2.5 hrs	5	7.5
Tanker truck	per week						
Standby time	per hour						
Delays	hours			3 hrs	2.5 to set well IW-A2		
	reason for delay			10' screen fell in hole IW-A2			

Barber rig/surface casing:

Mobe/demobe	lump sum						
Setup	per well						
Drill	per foot						
Surface casing	per foot						
Barber rig standby	per hour						

Miscellaneous equipment on site:

Baker tank							
~~Roll-off~~ Sump							4 2' PVC
Drums							16
hand cleared							6

7 Soil
7 water
2 decon Pad

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DAILY LOG

Page 1 of ____

Well(s) ____ Project/No. Ashland Site Location Rensselaer NY

Prepared by KB

Date	Time	Description of Activities Drum List.
		Drum List
	6/28/10	Drum #
		1- Soil cuttings IW IA-S, A6
		2 Soil " "
		3 Soil cuttings " 3 Total
	6/29/10	4 Soil cuttings IW-A5 4 Total
	*	5 decon water
	6/30/10	6 Soil cuttings
		7 IW-A2-A3, A4
		8 ↓ Soil
	*	9 decon water
	*	10 ~~Soil~~ cuttings water
	*	11 IW-2A water
	*	12 IW-2A water
	*	13 Decon water
	—	14 Decon PAD
	—	15 Decon PAD
	*	16 Development water
		16 Drums- Total
		7 - Soil
		7 Decon / Dev. water
		2- Decon Pad

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Appendix C

Boring Logs

Date Start/Finish: 6/29/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Lee Penrod
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" OD
Rig Type: CME 55
Sampling Method: 2' x 2" Split Spoon

Northing: 1384473.9
Easting: 695562.9
Casing Elevation: 32.30 AMSL

Borehole Depth: 24.2' bgs
Surface Elevation: 29.2 AMSL

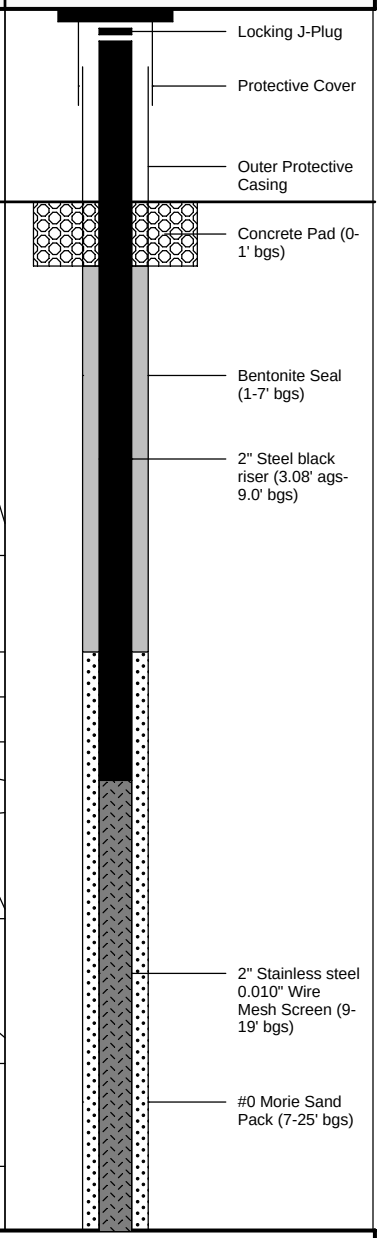
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-A2**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	30								
0									Air knife, vacuum, and hand clear to 5' bgs.
		NA	0-5	NA	NA	NA	NA		
	25								
5									Brown fine to coarse SAND and SILT, little fine angular to subangular Gravel, loose, wet. Little Clay, red Brick pieces at 5.3' bgs.
		1	5-7	0.8	1 1 5 2	6	0.0		Dark gray to gray SILT, some Clay, little coarse Sand, more sand between 0.75-0.80' of recovery, soft, wet.
		2	7-9	1.55	4 4 6 4	10	0.0		Dark gray SILT, some Clay and fine to coarse Sand, soft, wet. Brown with green mottling CLAY, little Silt, medium stiff, damp. WOOD.
	20								
10		3	9-11	1.0	4 5 5 5	10	0.0		Gray brown fine to coarse SAND and rounded to angular GRAVEL, loose, wet. Gray CLAY, some Silt and fine to coarse Sand, little Gravel, trace Wood in shoe, fine to medium Sand lense at 0.7' of recovery, very soft, wet. Brown fine to coarse SAND, little Silt and Clay, loose, wet.
		4	11-13	0.65	7 14 27 8	41	0.0		Brown fine to medium angular to subangular GRAVEL, little Silt and coarse Sand, loose, wet.
	15								
		5	13-15	0.65	12 14 6 10	20	0.0		Dark brown SILT and CLAY, little Wood, trace Gravel and Sand, soft, wet. Brown fine to coarse angular to subangular GRAVEL, little Silt and Clay, loose, stone in shoe, wet.
15									
		6	15-17	1.2	3 2	4	0.0		Brown to gray fine to coarse SAND and rounded to angular GRAVEL, some Silt, little to trace Clay, at 0.7' of recovery a little more Clay, loose, wet.



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Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Client: Ashland Inc.

Well/Boring ID: **IW-A2**

Borehole Depth: 24.2' bgs

Site Location:
130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		6	15-17	1.2	2 2	4	0.0		Brown to gray fine to coarse SAND and rounded to angular GRAVEL, some Silt, little to trace Clay, at 0.7' of recovery a little more Clay, loose, wet.	
		7	17-19	1.0	3 2 2 7	4	0.0		Gray SILT, some Sand and fine to medium GRAVEL, trace Clay, loose, wet.	2" Stainless steel 0.010" Wire Mesh Screen (9-19' bgs) #0 Morie Sand Pack (7-25' bgs)
10		8	19-21	0.6	27 16 17 15	33	0.0		Gray fine to coarse SAND and rounded to subrounded GRAVEL, some to little Silt, trace Clay, loose, wet.	2" Sch 40 PVC Sump (19-21' bgs)
20									Gray fine to coarse angular to subangular GRAVEL, some Silt and Clay, little coarse Sand, loose, wet.	
		9	21-23	0.8	15 6 11 17	17	0.0		Gray SILT, little Clay, trace fine Gravel, soft, wet.	Sand Backfill (21-24.2' bgs)
					9				Gray fine to medium SAND and SILT, little Clay, trace fine rounded Gravel, wet.	
5		10	23-25	0.9	11	NA	0.0		Gray fine to medium SAND, little Silt and rounded to subangular Gravel, trace Clay, loose, wet.	
					50/0.2				Gray SAND and GRAVEL, dry (in shoe). Possibly on Bedrock, smooth drilling.	
25									Split spoon refusal at 25' bgs.	
0										
30										
-5										
35										

ARCADIS
Infrastructure, environment, buildings

Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Date Start/Finish: 6/30/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Lee Penrod
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" OD
Rig Type: CME 55
Sampling Method: 2' x 2" Split Spoon

Northing: 1384446
Easting: 695559.9
Casing Elevation: 31.57 AMSL

Borehole Depth: 23' bgs
Surface Elevation: 28.9 AMSL

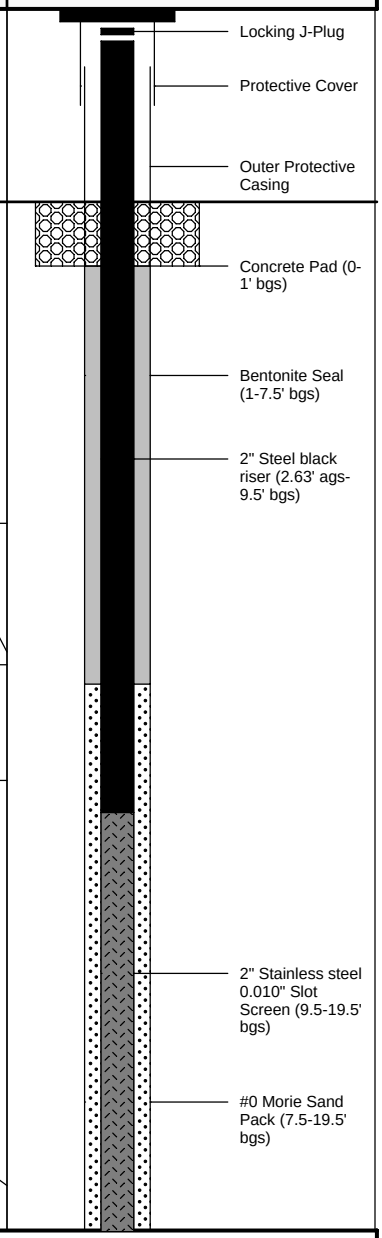
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-A3**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	30								
0									Air knife, vacuum, and hand clear to 5' bgs.
	25	NA	0-5	NA	NA	NA	NA		
5		1	5-7	0.6	4 2 2 2	6	0.0		Gray SILT, some Clay, medium to coarse Sand and rounded to subrounded Gravel, little Brick, loose, wet.
									Very dark brown SILT, and medium to coarse Sand, loose, wet.
		2	7-9	1.8	3 2 2 6	10	0.0		Dark gray Silty CLAY, some fine to coarse Sand and black medium to coarse Sand lenses, little fine rounded to subrounded Gravel, very soft to loose, odor, wet.
	20								
10		3	9-11	0.9	12 11 8 8	10	0.0		Dark brown to brown Silty CLAY, some medium to coarse Sand, little rounded to subrounded Gravel, soft, wet.
		4	11-13	1.15	5 6 7 4	41	0.0		
	15	5	13-15	0.9	4 8 7 11	20	0.0		
15			15-17	1.0	6 26	4	0.0		Brown SILT and fine to medium rounded to angular GRAVEL, little fine to coarse Sand, trace Clay, loose, wet.



Well/Boring Construction

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Infrastructure, environment, buildings

Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery; WOR = Weight of Rod.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Client: Ashland Inc.

Well/Boring ID: **IW-A3**

Borehole Depth: 23' bgs

Site Location:
130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		6	15-17	1.0	15 18	4	0.0		Brown SILT and fine to medium rounded to angular GRAVEL, little fine to coarse Sand, trace Clay, loose, wet.	
		6	17-19	1.0	7 9 14 9	4	0.0		Brown fine to medium rounded to angular GRAVEL, some fine to coarse Sand and Silt, very loose, wet.	
10		7	19-21	1.7	WOR WOR 4 5	33	0.0		Gray CLAY, little Silt, soft, wet.	
20		8	21-23	1.5	5 4 6 7	17	0.0		Gray CLAY, little Silt, trace fine Sand and fine rounded Gravel, wet.	
	5								Targeted end of boring based on bedrock in IW-A2 at 24.2' bgs.	
25										
	0									
30										
	-5									
35										

2" Stainless steel 0.010" Slot Screen (9.5-19.5' bgs)

#0 Morie Sand Pack (7.5-19.5' bgs)

2" Sch 40 PVC Sump (19.5-21.5' bgs)

ARCADIS
Infrastructure, environment, buildings

Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery; WOR = Weight of Rod.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Date Start/Finish: 6/29/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Lee Penrod
Drilling Method: Hollow Stem Auger
Auger Size: NA
Rig Type: CME 55
Sampling Method: 2' x 2" Split Spoon

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 11.5' bgs
Surface Elevation: NA

Descriptions By: Katie Bidwell

Well/Boring ID: **IW-A4**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0	NA	0-5	NA	NA	NA	NA		Air knife, vacuum, and hand clear to 5' bgs.	
5	-5	1	5-7	1.0	20 18 20 14	38	0.0		Gray fine to coarse SAND, some Silt, little fine to medium angular to subangular Gravel, loose, wet.	
		NA	NA	NA	NA	NA	NA		Gray fine to coarse SAND and fine to medium angular to subangular GRAVEL, some Silt, trace Clay, loose, wet.	Boring backfilled to grade with grout (0-11.5' bgs).
10	-10	2	8-10	0.5	30 50/ 0.1	NA	0.0		CONCRETE.	
		3	10-11	NR	NA	NA	NA		Gray SAND and angular to subangular GRAVEL, little Silt, trace Clay, loose, wet. (Possibly inbetween concrete)	
15	-15								No recovery. Possibly on metal or rebar.	
									Split spoon refusal at 11.5' bgs.	

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Remarks: bgs = below ground surface; NA = Not Available/Not Applicable.

Injection well was abandoned due to refusal on concrete at depth that was over 5' thick. Four attempts were made to redrill within a 5' radius and hit refusal at each attempt.

Date Start/Finish: 6/28-6/29/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Lee Penrod
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" OD
Rig Type: CME 55
Sampling Method: 2' x 2" Split Spoon

Northing: 1384387.1
Easting: 695554
Casing Elevation: 29.20 AMSL

Borehole Depth: 19' bgs
Surface Elevation: 26.9 AMSL

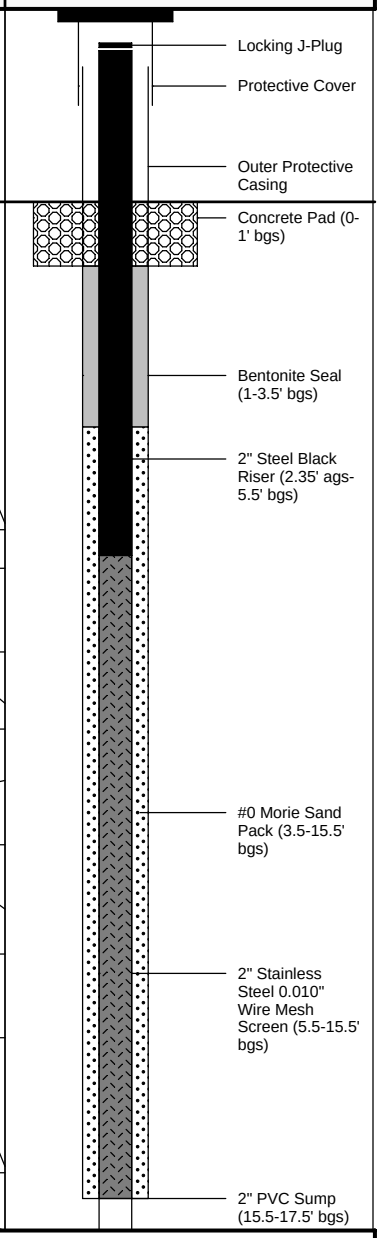
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-A5**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
	25	--	0-5	NA	NA	NA	NA		Air knife, vacuum, and hand clear to 5' bgs.
5		1	5-7	1.35	NA	NA	0.0		Gray CLAY, trace fine to coarse Sand and Roots, soft, dry. Brown CLAY, little Silt, dense, dry. Gray CLAY and SILT, some fine to medium Sand, little fine Gravel, soft, damp.
	20	2	7-9	1.6	NA	NA	0.0		Gray SILT, some Clay and fine to coarse Sand, wet. Gray CLAY and SILT, trace fine Sand, soft, moist. Grayl CLAY, some Silt and fine Sand, trace fine to medium angular to subangular Gravel, loose, damp.
10		3	9-11	1.2	NA	NA	0.2		Brown little gray CLAY and SILT, little fine to medium rounded to angular Gravel, soft, wet. Brown CLAY and SILT, some fine to coarse Sand and fine Gravel, soft, wet.
	15	4	11-13	1.4	NA	NA	0.3		Brown and gray CLAY and SILT, trace fine to medium Sand lenses, mottled, soft, wet. Brown SILT, some Clay and fine to medium Gravel, Gravel increases with depth, loose, wet.
		5	13-15	0.6	NA	NA	0.1		Brown CLAY and SILT, some fine to medium Gravel, soft, wet. Brown CLAY, SAND, GRAVEL, and SILT, soft, wet.
15		6	15-17	1.0	NA	NA	0.0		Brown CLAY and SILT, trace fine Gravel, medium dense, wet. Second attempt (15.5-17.5). Gray CLAY in shoe, suction felt when pulling the augers.



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Infrastructure, environment, buildings

Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Blow counts not collected during drilling.

Client: Ashland Inc.

Well/Boring ID: IW-A5

Borehole Depth: 19' bgs

Site Location:
130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
10	6	15-17	1.0	NA	NA	0.0		Brown CLAY and SILT, trace fine Gravel, medium dense, wet. Second attempt (15.5-17.5). Gray CLAY in shoe, suction felt when pulling the augers.	2" Sch 40 PVC Sump (15.5-17.5' bgs)
	7	17-19	0.4	4 5 8 8	13	0.0		Brown to gray CLAY, some Silt, Sand and angular to subrounded Gravel, soft, wet. Second attempt. Gray CLAY in shoe, soft, slough in split spoon.	
20								End of boring 19' bgs.	
5									
25									
0									
30									
-5									
35									

ARCADIS
Infrastructure, environment, buildings

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Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Blow counts not collected during drilling.

Date Start/Finish: 6/28/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Lee Penrod
Drilling Method: Hollow Stem Auger
Auger Size: 4.25" OD
Rig Type: CME 55
Sampling Method: 2' x 2" Split Spoon

Northing: 1384356.7
Easting: 695550.3
Casing Elevation: 28.85 AMSL

Borehole Depth: 15.5' bgs
Surface Elevation: 26.7 AMSL

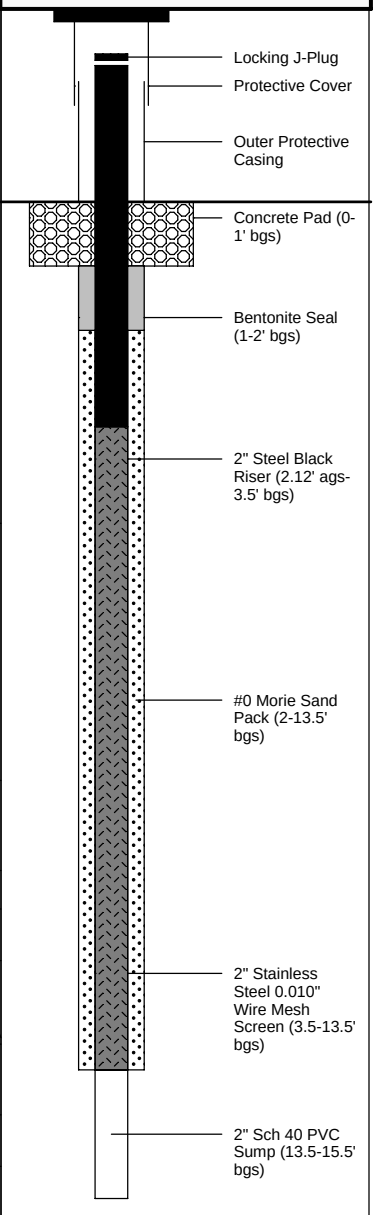
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-A6**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
	25	NA	0-5	NA	NA	NA	NA		Air knife, vacuum, and hand clear to 5' bgs.
5		1	5-7	0.5	NA	NA	0.7		Brown gray CLAY and SILT, some to little Sand and fine to medium Gravel, soft, medium odor, wet.
	20	2	7-9	0.3	NA	NA	0.1		
10		3	9-11	2.0	NA	NA	0.2		Brown gray CLAY, some Silt, little fine Gravel, soft to medium dense, wet to moist.
									Brown CLAY, little Silt, gray lenses, dry.
	15								Gray little brown CLAY and SILT, little fine to medium rounded Gravel and Sand, soft, moist to wet.
		4	11-13	1.8	NA	NA	0.4		Brown fine to coarse SAND, some to little fine rounded Gravel, loose, wet.
									Fine to coarse GRAVEL at top, loose, wet.
		5	13-15	2.0	NA	NA	0.2		Brown CLAY, little Silt, soft, dense, gray at the top, gray lenses, wet to moist
15									Gray CLAY and SILT, soft, wet.
									End of boring 15' bgs. Augered to 15.5' bgs to set the sump.



ARCADIS
Infrastructure, environment, buildings

Remarks: bgs = below ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Blow counts not collected during drilling.

Date Start/Finish: 4/6/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Mickey Marshall
Drilling Method: Hollow Stem Auger
Sampling Method: 2' x 2" Split Spoon
Rig Type: Track-mounted Geoprobe 7822DT HSA

Northing: 1384327.5
Easting: 695536.8
Casing Elevation: 31.13 AMSL

Borehole Depth: 17' bgs
Surface Elevation: 28.7 AMSL

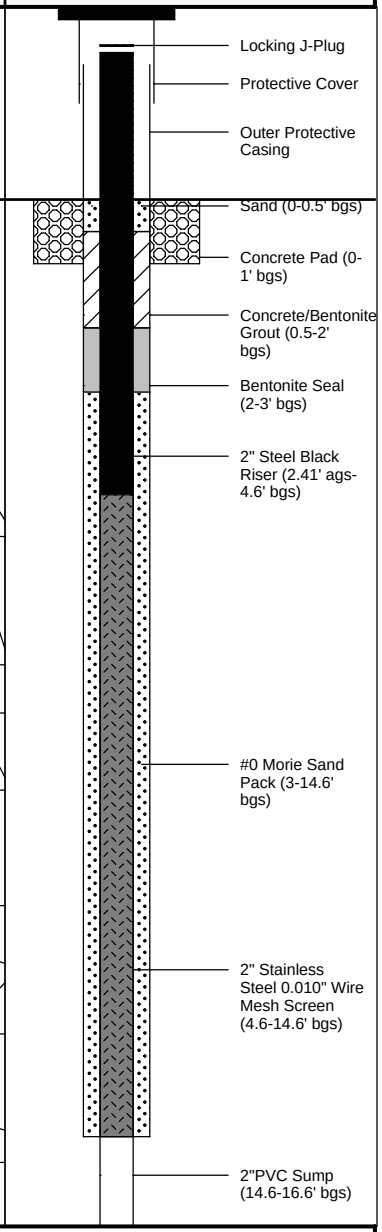
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-A7**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
30						
0						Air knife, vacuum, and hand clear to 5' bgs.
	NA	0-5	NA	NA		
25						
5						Dark brown fine to coarse SAND, little fine Gravel, loose, moist.
	1	5-7	1.5	0.0		Brown/gray Silty CLAY, medium dense, damp to very moist at 5.7 ' bgs. Damp immediately below 5.8' bgs.
						Dark brown SILT and fine to coarse SAND, some Clay and fine to medium Gravel, loose, wet.
	2	7-9	1.9	0.0		Brown/gray CLAY, little Silt, medium dense, damp.
20						Gray CLAY, little Silt, less dense, wet at 8.5' bgs, then moist to 9' bgs.
						Brown SILT, some Clay and fine to coarse Sand, soft to loose, wet.
10	3	9-11	1.4	0.0		Brown CLAY, little Silt, medium dense, moist to damp.
	4	11-13	1.5	0.0		Brown to gray CLAY, little Silt, soft, moist. Fine Sand seams at 11.5' (wet) and 11.8' (with silt and moist) bgs.
						Brown fine to medium SAND and SILT, trace fine Gravel, loose, wet.
						Light brown to gray CLAY, little Silt, stiff, damp.
15	5	13-15	2	10.8		Brown to gray (at 13.4' bgs) fine to coarse SAND, little Silt and fine Gravel, loose, wet.
						Gray CLAY, little Silt and fine to coarse Sand, soft, wet.
15	6	15-17	1.9	11.4		Brown turning to gray at 15.3' bgs CLAY, little Silt, soft to very soft, wet.



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Remarks: bgs = below ground surface; NA = Not Available/Not Applicable; HSA = Hollow Stem Auger; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Client: Ashland Inc.

Well/Boring ID: **IW-A7**

Borehole Depth: 17' bgs

Site Location:
130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	6	15-17	1.9	11.4		Brown turning to gray at 15.3' bgs CLAY, little Silt, soft to very soft, wet.	2"PVC Sump (14.6-16.6' bgs)

10
20
5
25
0
30
-5
35

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Infrastructure, environment, buildings

Remarks: bgs = below ground surface; NA = Not Available/Not Applicable; HSA = Hollow Stem Auger; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Date Start/Finish: 4/5/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Micky Marshall
Drilling Method: Geoprobe with HSA
Sampling Method: 2' x 2" Split Spoon
Rig Type: Geoprobe 7822 DT

Northing: 1384795
Easting: 695608.7
Casing Elevation: 25.99 AMSL

Borehole Depth: 13' bgs
Surface Elevation: 24.3 AMSL

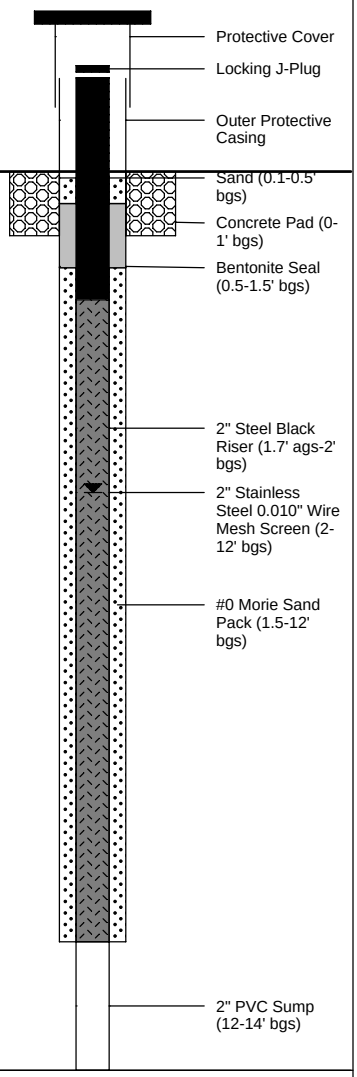
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-B2**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
25 / 0						Air knife, vacuum, and hand clear to 5' bgs.
20 / 5	--	0-5	NA	NA		
	1	5-7	1.0	0.0		Dark gray fine to coarse SAND and fine rounded to angular GRAVEL, loose, wet. Gray CLAY and SILT, some fine to coarse Sand, trace Gravel, very soft, wet. Gray fine to medium SAND, some Silt, loose, wet.
15 / 10	2	7-9	1.6	0.0		Gray fine to medium SAND and SILT, wet. Gray fine to coarse SAND and SILT, some fine rounded to subrounded Gravel, little Clay, loose, wet. Brown/gray SILT and CLAY, medium stiff, dry.
	3	9-11	1.8	0.0		Gray SILT and CLAY, soft, wet. Gray CLAY, little Silt, very soft, wet to very moist.
	4	11-13	1.7	0.0		
10 / 15						



ARCADIS
Infrastructure, environment, buildings

Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Date Start/Finish: 4/6/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Micky Marshall
Drilling Method: Geoprobe with HSA
Sampling Method: 2' x 2" Split Spoon
Rig Type: Geoprobe 7822 DT

Northing: 1384765.9
Easting: 695603.9
Casing Elevation: 25.36 AMSL

Borehole Depth: 13' bgs
Surface Elevation: 23.9 AMSL

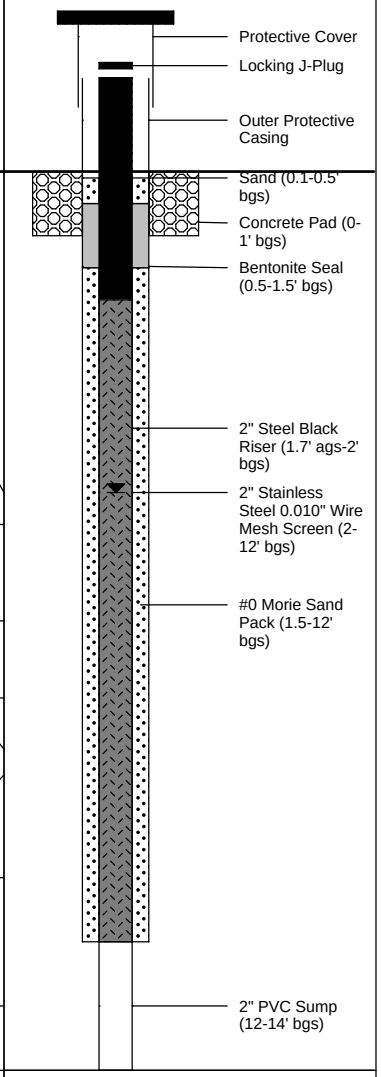
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-B3**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
25 / 0						Air knife, vacuum, and hand clear to 5' bgs.
	--	0-5	NA	NA		
20 / 5						Brown-gray fine to coarse SAND and SILT, little fine to medium round to subrounded Gravel, trace Clay, loose, soft, wet.
	1	5-7	1.0	0.0		Brown with gray lenses Silty CLAY, medium stiff, wet to moist.
	2	7-9	2	0.0		Brown-gray lenses in Gray SILT, some fine to coarse Sand and round to angular fine Gravel, soft to very soft, wet
15 / 10						Brown with gray lenses CLAY, little Silt, medium stiff, wet to dry 8.2-9' bgs.
						Gray-brown SILT, some fine to coarse Sand, trace rounded to subrounded fine Gravel, very soft, wet.
	3	9-11	1.8	0.0		Brown/blue-gray CLAY, little Silt, stiff, wet.
	4	11-13	1.4	0.0		Gray CLAY, little Silt and fine to coarse Sand, very soft, wet.
10 / 15						



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Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Date Start/Finish: 4/5/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Micky Marshall
Drilling Method: Geoprobe with HSA
Sampling Method: 2' x 2" Split Spoon
Rig Type: Geoprobe 7822 DT

Northing: 1384737.9
Easting: 695598.7
Casing Elevation: 25.76 AMSL

Borehole Depth: 13' bgs
Surface Elevation: 24 AMSL

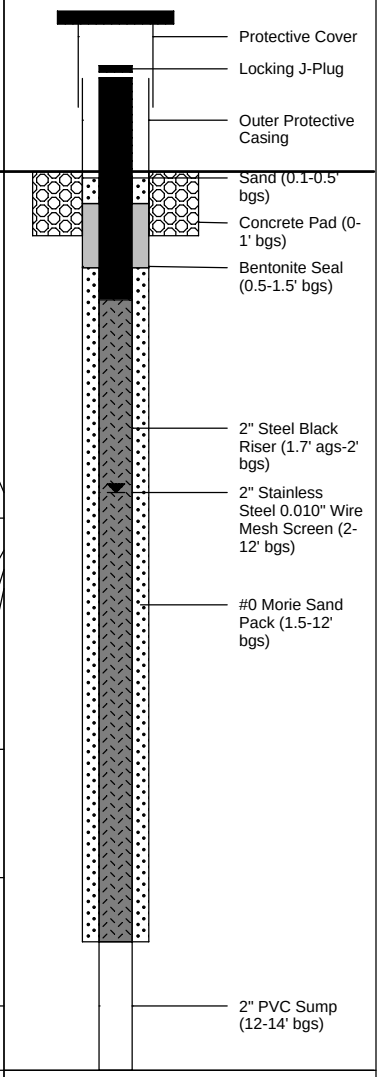
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-B4**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	25						
0							Air knife, vacuum, and hand clear to 5' bgs.
		--	0-5	NA	NA		
	20						
5							Brown-gray fine to coarse SAND, some Silt, little fine round to subrounded Gravel, loose, wet.
		1	5-7	1.8	0.0		Gra SILT, little Clay to some coarse Sand, trace round to subrounded Gravel, soft, moist.
							Brown, dark to light gray Silty CLAY, trace fine Gravel, medium stiff, damp.
							Black SILT and fine SAND, loose, wet.
		2	7-9	1.5	0.0		Brown with some dark gray CLAY, little Silt, medium dense, dry.
	15						
10		3	9-11	NR	NA		No recovery.
		4	11-13	1.5	0.0		Gray CLAY, little Silt, very soft, wet.
	10						
15							



ARCADIS
Infrastructure, environment, buildings

Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Date Start/Finish: 4/7/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Micky Marshall
Drilling Method: Geoprobe with HSA
Sampling Method: 2' x 2" Split Spoon
Rig Type: Geoprobe 7822 DT

Northing: 1384706.3
Easting: 695599.3
Casing Elevation: 30.75 AMSL

Borehole Depth: 16.5' bgs
Surface Elevation: 28.6 AMSL

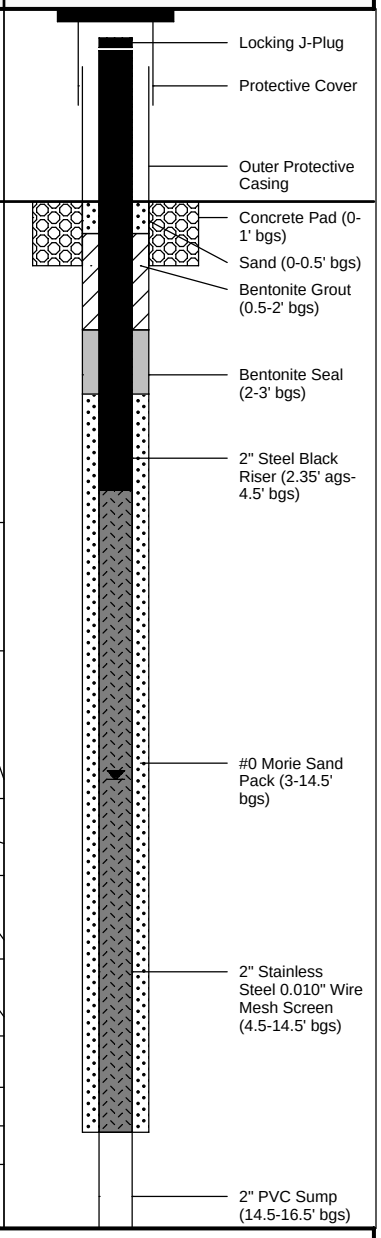
Descriptions By: Katie Bidwell

Well/Boring ID: **IW-B5**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	30						
0							Air knife, vacuum, and hand clear to 5' bgs.
	25	--	0-5	NA	NA		
5		1	5-7	NA	0.0		No recovery - void.
		2	7-9	NA	0.0		No recovery - void.
	20						Brown fine to coarse SAND and SILT, little rounded to angular Gravel, little Clay, loose, wet.
10		3	9-11	1.7	0.2		Brown/blue-gray CLAY, little Silt, stiff, wet.
							Brown fine rounded GRAVEL, loose, wet.
							Brown/gray CLAY, little Silt, stiff, moist.
		4	11-13	1.9	0.3		Brown fine to coarse SAND, some Silt, trace fine rounded Gravel, loose, wet.
							Brown-gray CLAY, little Silt, trace fine rounded Gravel, moist to wet.
							Brown fine to coarse SAND and SILT, trace fine rounded Gravel, loose, wet.
	15	5	13-15	2	0.1		Brown with gray CLAY, some Silt, trace fine to coarse Gravel, dense, wet.
15							Gray fine to medium SAND, trace coarse Gravel, loose, wet.
							Gray CLAY, little Silt, very soft, wet.
		6	15-17	1.3	0.0		Gray CLAY, some Silt, very soft, wet.



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Remarks: bgs = below ground surface; ags = above ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

Client: Ashland Inc.

Well/Boring ID: **IW-B5**

Borehole Depth: 16.5' bgs

Site Location:
130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	6	15-17	1.3	0.0		Gray CLAY, some Silt, very soft, wet.	2" Sch 40 PVC Sump (14.5-16.5' bgs)
						End of boring at 16.5' bgs.	

10
20
5
25
0
30
-5
35

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Sump set in native clay using a split spoon to clear the hole.

Riser height ags obtained from survey information rather then field observations.

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Date Start/Finish: 4/1/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Mickey Marshall
Drilling Method: 4" driven steel casing
Sampling Method: 2' x 2" Split Spoon
Rig Type: Tripod

Northing: 1384547.6
Easting: 695563.8
Casing Elevation: 25.4 AMSL

Borehole Depth: 13' bgs
Surface Elevation: 25.6 AMSL

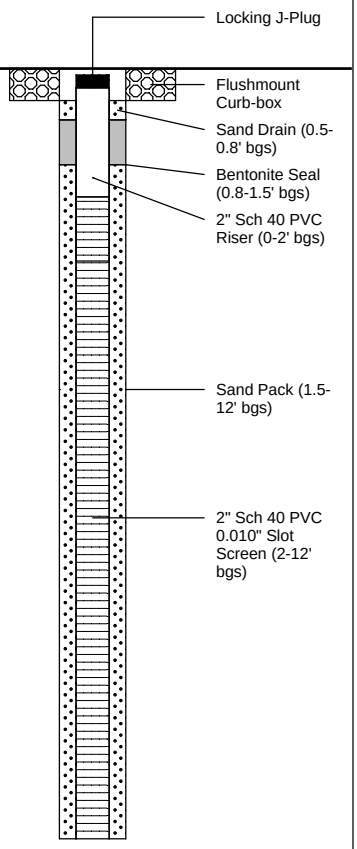
Descriptions By: Katie Bidwell

Well/Boring ID: **MW-20**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 25						Air knife, vacuum, and hand clear to 5' bgs.
	NA	0-5	NA	NA		
5 / 20	1	5-7	0.7	14		Dark gray coarse to medium SAND, some fine rounded to angular Gravel, little Silt, loose, sheen, strong odor, wet. Dark gray SILT, little coarse Sand and fine rounded Gravel, soft, sheen, odor, wet.
	2	7-9	1.5	98		Dark gray coarse to medium SAND, some fine rounded to subrounded Gravel, little Silt, very loose, sheen, odor, wet. Gray CLAY and SILT, little coarse Sand and fine rounded to sub-angular Gravel, medium plasticity, soft, sheen, odor, wet. Dark gray coarse to medium SAND, some fine rounded to subrounded Gravel, trace Silt, loose, sheen, odor, wet.
10 / 15	3	9-11	0.8	10		Gray to light gray CLAY, some Silt, little fine rounded to subrounded Gravel, trace interbedded coarse Sand, sheen, odor, wet. Dark gray CLAY and SILT, some coarse Sand and fine rounded to subrounded Gravel, medium stiff, wet.
	4	11-13	NR	NA		Dark gray CLAY, little Silt, coarse Sand and fine Gravel, soft, medium plasticity, moist to wet. Gray CLAY, trace fine rounded Gravel and Sand, brown to green lenses, plastic, soft, odor, moist. No Recovery.
15 / 10	5					End of boring 13' bgs.



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Remarks: bgs = below ground surface; NA = Not Available/Not Applicable; AMSL = Above Mean Sea Level, NR = No Recovery.

Date Start/Finish: 4/1/2010
Drilling Company: Parratt-Wolff Inc.
Driller's Name: Mickey Marshall
Drilling Method: Hollow Stem Auger
Sampling Method: 2' x 2" Split Spoon
Rig Type: Tripod

Northing: 1384587
Easting: 695461.6
Casing Elevation: 27.97 AMSL

Borehole Depth: 13' bgs
Surface Elevation: 26.4 AMSL

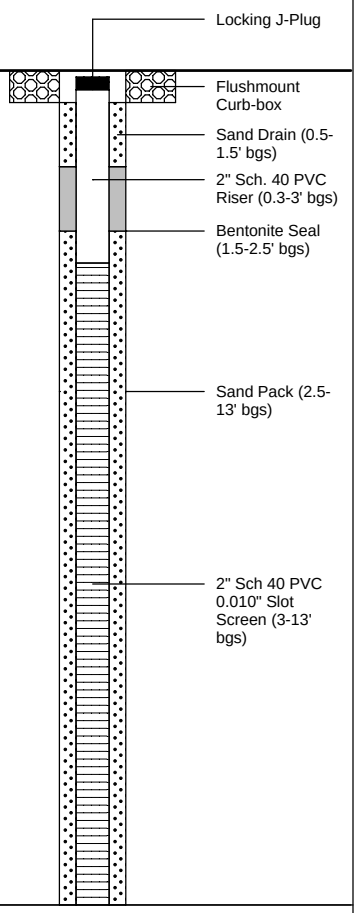
Descriptions By: Katie Bidwell

Well/Boring ID: **MW-21**

Client: Ashland Inc.

Location: 130 South St.
Rensselaer, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	25	NA	0-5	NA	NA		Air knife, vacuum, and hand clear to 5' bgs.
5	20	1	5-7	1.9	0.0		Brown CLAY and SILT, little fine angular to subangular Gravel, trace coarse Sand and Roots, very soft, moist to wet. Brown CLAY, trace fine Sand at the top of the sample, gray interbedding, medium stiff, damp. Brown CLAY, some fine Sand and Silt, gray interbedding, soft, wet.
		2	7-9	1.9	0.0		Brown CLAY, some Silt, little fine angular to subangular Gravel, gray to red interbedding, low dense, damp. Brown CLAY and SILT, little fine angular to subangular Gravel, gray interbedding, soft, wet. Brown CLAY, little Silt, trace fine rounded to angular Gravel, gray to dark brown interbedding, wet.
10	15	3	9-11	1.5	0.0		Brown CLAY, some fine Sand and Silt, gray interbedding, low dense, moist. Blue green SILT, little fine to coarse Sand, fine angular to subangular Gravel and Clay, dark brown to red interbedding, dense, damp.
		4	11-13	1.6	0.0		Brown CLAY, little fine Sand, trace Gravel and gray Silt, trace Roots, medium dense, dry. Blue green CLAY, little fine rounded to angular Gravel and fine to coarse Sand, trace Silt, fine to coarse Sand seam at 1.3' of recovery, soft, plastic, moist to wet. Brown gray CLAY, little Silt, fine Sand and Gravel, interbedding, moist.
15							Brown gray CLAY, soft. Gray brown CLAY, little fine Silt, fine Gravel and coarse Sand, dense, wet. End of boring 13' bgs.



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