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VIA OVERNIGHT EXPRESS

April 12, 2013

Mr. Kevin Kelly
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204

Subject: **Phase 1 Interim Report**
Enhanced In-Situ Biodegradation Pilot Test
Former Powerex, Inc. Facility (Site No. 7-06-006)
Auburn, New York

Dear Kevin:

Enclosed please find the Phase 1 Interim Report associated with the enhanced in-situ biodegradation (EISB) pilot test at the North Evaporation Pit, which data show to be the most significant source area at the above-referenced site. The results from the first phase of the pilot test demonstrate the feasibility of injecting and distributing lactate and emulsified vegetable oil (EVO) in the I1 unit at the North Evaporation Pit. As expected, the results also show that the geochemical conditions in the I1 unit at and near the North Evaporation Pit are already favorable for the reductive dechlorination of trichloroethene (TCE) and its degradation products.

The General Electric Company (GE), Geosyntec Consultants, Inc. (Geosyntec) and O'Brien & Gere Engineers, Inc. (O'Brien & Gere) are ready to commence implementation of the second phase of the pilot test, during which lactate and EVO will be injected into the I1 unit at the North Evaporation Pit to enhance the degradation of chlorinate solvents.

As always, please contact me if you have any questions.

Sincerely,

Paul Wm. Hare
Program Manager, Northeast/Midwest Regions

enclosure (one physical copy, one electronic copy)

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13087

Prepared for

General Electric Company
Albany, New York

PHASE 1 INTERIM REPORT

Enhanced In-Situ Bioremediation Pilot Test

FORMER POWEREX, INC. FACILITY
SITE CODE 7-06-006
AUBURN, NEW YORK

Prepared by

Geosyntec
consultants

engineers | scientists | innovators

130 Research Lane, Suite 2
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April 12, 2013

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°C	degrees Celsius
ASTM	American Society for Testing and Materials
BAZ	biologically active zone
BiRD	biogeochemical reductive dechlorination
cm/sec	centimeters per second
CSIA	compound-specific isotope analysis
CVOCs	chlorinated volatile organic compounds
DHC	*Dehalococcoides ethenogenes*
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
1,1-DCA	1,1-dichloroethane
1,2-DCE	cis-1,2-dichloroethene
1,1-DCE	1,1-dichloroethene
EVO	emulsified vegetable oil
EISB	enhanced in-situ bioremediation
FFS	Focused Feasibility Study
FS	Feasibility Study
ft	feet
ft amsl	feet above mean sea level
ft/day	feet per day
GE	General Electric Company
gpm	gallons per minute
gpm/ft	gallons per minute per foot
HDPE	high-density polyethylene
HSA	hollow stem auger
IAROD	Interim Action Record of Decision
ID	inside diameter
IRI	Interim Remediation Investigation
IRM	Interim Remedial Measure
ISCR	in-situ chemical reduction
LDPE	low-density polyethylene
lbs	pounds
mg/kg	milligram per kilogram
mg/L	milligram per liter
mL/min	milliliters per minute
mV	millivolts
NAPL	non-aqueous phase liquid
N_{CL}	chlorine number
NGVD	National Geodetic Vertical Datum
NTU	Nephelometric Turbidity Unit
NYSDEC	New York State Department of Environmental Conservation

NYSDOH	New York State Department of Health
ORP	oxidation-reduction potential
PCE	tetrachloroethene
PIAP	Proposed Interim Action Plan
ppm	parts per million
psi	pounds per square inch
PTA	pilot test area
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RI	Remedial Investigation
RQD	rock quality designation
SBGWIA	Shallow Bedrock Groundwater Interim Action
S/cm	Siemens per centimeter
SCOs	Soil Cleanup Objectives
SU	standard units
TCA	1,1,1-trichloroethane
TCE	trichloroethene
TOC	total organic carbon
µg/L	microgram per liter
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
USGS	Unites States Geological Survey
VC	vinyl chloride
vcrA	vinyl chloride reductase
VFAs	volatile fatty acids
VOCs	volatile organic compounds

1. INTRODUCTION

1.1 Purpose and Scope

Geosyntec Consultants (Geosyntec) has been retained by the General Electric Company (GE) to prepare this Phase 1 Interim Report for the enhanced in-situ bioremediation (EISB) pilot test at the former Powerex, Inc. (Powerex) facility in Auburn, New York (the "Site"). This report presents results of the first phase (Phase 1) of the EISB pilot test to accelerate the removal of chlorinated solvents (specifically chlorinated ethenes such as trichloroethene [TCE] and its degradation products, cis-1,2-dichloroethene [1,2-DCE] and vinyl chloride [VC]) in shallow bedrock source area groundwater at the Site. Details of the pilot test are presented in the revised Remedial Investigation/Feasibility Study (RI/FS) Addendum No. 4 (also known as the EISB Pilot Test Work Plan [Work Plan]), prepared by Geosyntec dated June 29, 2012 and are discussed below.

The goal of the pilot test is to determine if EISB is a viable approach to enhancing the removal of chlorinated solvents in the shallow bedrock groundwater source areas at the Site, and if EISB can be used as an environmentally sustainable technology to replace the existing 2-PHASE Extraction™ system. The United States Environmental Protection Agency (USEPA) Region 2 has issued a "Clean and Green" policy in order to enhance the environmental benefits of site cleanup activities by promoting sustainable technologies (USEPA, 2010). New York State Department of Environmental Conservation (NYSDEC) has also developed a "Green Remediation" guidance document (DER-31) on the use of more sustainable technologies and their application at remedial sites in order to minimize the environmental footprint of site cleanup activities (NYSDEC, 2010). An in-situ bioremediation approach to contaminant conditions in the shallow bedrock source areas is consistent with such policies and guidance.

A secondary goal of the pilot test is to determine if electron donor (lactate and emulsified vegetable oil [EVO]) added in the shallower bedrock units within the footprint of the source zone will positively impact groundwater conditions in the deeper units, and in particular the migration of chlorinated volatile organic compounds (CVOCs) across the southern boundary of the former Powerex facility in the D3 interval (which consists of a gypsum-rich interval within the Forge Hollow Member of the Bertie Formation).

While the goal of the pilot test is to assess the viability of EISB for source area groundwater in the shallow bedrock unit (i.e., the "S" interval, which consists of the Moorehouse and Nedrow Members of the Onondaga Formation), the pilot test is being performed in the intermediate bedrock (specifically, the "I1" interval, which consists of the upper, limestone portion of the Manlius Formation) that underlies the shallow bedrock unit. This is due to the potential engineering and compliance complications of performing such a test in the shallow bedrock while the 2-PHASE Extraction™ system is operating, or resuming operation of the 2-PHASE Extraction™ system after performing such a test in the shallow bedrock. By performing the

EISB pilot test in the I1 interval, operation of the 2-PHASE Extraction™ system can continue in accordance with the Interim Action Record of Decision (IAROD) and Amended Order on Consent while the pilot test is implemented.

This report is divided into eight sections. The remainder of this section provides background information on the Site, including a summary of past solvent handling practices, prior investigation activities, and remedial actions that have been completed and/or are currently underway. Section 2 provides a summary of Site conditions. Section 3 provides an overview of chlorinated ethene biodegradation mechanisms, the use of bioremediation to treat source areas, and a summary of case studies involving the use of EISB in fractured bedrock. Section 4 presents an overview of the pilot test objectives and approach. Section 5 outlines the methods and procedures that were used to perform the Phase 1 activities. Section 6 presents the results from the Phase 1 testing activities. Section 7 presents the methodology for the Phase 2 and 3 activities, along with proposed changes to these phases of the pilot test based on results of the Phase 1 testing. Finally, references are provided in Section 8. Note that the remainder of Section 1, and Sections 2, 3, and 4, are largely unchanged from the Work Plan, with minor updates in Sections 1.2.4 and 4.2.

1.2 Site Background

The following information is, with only minor modifications, taken from RI/FS Work Plan Addendum No. 3 (O'Brien & Gere Engineers, Inc. [O'Brien & Gere], 2003), and summarizes the Site history, past waste solvent handling practices, previous investigations, the RI/FS, Interim Remedial Measures (IRMs), and Interim Actions at the Site.

1.2.1 Site History

The Site consists of 55.4 acres of land located on the boundary of the Town of Aurelius and the City of Auburn in Cayuga County, New York (Figure 1). GE purchased the property in 1951 and constructed a manufacturing plant where a variety of electric components, including radar equipment, printed circuit boards for high-fidelity equipment, and high-voltage semi-conductors were manufactured. The property was acquired by Powerex in January 1986. Powerex continued to manufacture high voltage semi-conductors until May 1990, when the plant was closed. In November 1990, GE purchased the property back from Powerex, largely to facilitate remedial activities. No manufacturing operations are currently conducted at the Site.

1.2.2 Past Waste Solvent Handling Practices

Past waste solvent practices at the Site included the placement of waste solvents into one, possibly two, unlined evaporation pits: the purported West Evaporation Pit; and the North Evaporation Pit. As described below, the purported West Evaporation Pit has never been physically identified; however, because of elevated concentrations of volatile organic compounds (VOCs) in the area, GE has routinely referred to this area as a purported pit location. As such, the term purported West Evaporation Pit is used to denote this area of elevated VOC detections.

Solvents were reportedly placed in the purported West Evaporation Pit located in the field just west of the plant building. The West Evaporation Pit is alleged to have been abandoned in 1962 by bulldozing. However, although VOCs have been detected in overburden soils and groundwater in the field west of the plant building, the actual existence, location, dimensions, and history of the purported West Evaporation Pit have not been determined. Aerial photographs show that an evaporation pit was not present in this field in July 1954. Additionally, there is no visible expression of a former evaporation pit in aerial photographs taken in June 1963, and analysis of samples from a series of 49 test pits installed in November 1989 failed to show any signs of the purported West Evaporation Pit.

The North Evaporation Pit was located north of the northwestern corner of the plant building. Reports suggest that use of this pit began in 1962 or 1963. During its use, the North Evaporation Pit received waste solvents that were gravity-fed to the pit through pipes from the Drum Storage Building located on the north side of the plant building. Use of the North Evaporation Pit was reportedly discontinued when the underground Waste Solvent Tank was installed in 1966 or 1967.

The Waste Solvent Tank was a 21,000-gallon, underground concrete tank located just outside the northwestern corner of the plant building. Waste solvents were periodically removed from the tank and transported off-site for reclamation or disposal. Powerex discontinued use of the Waste Solvent Tank in August 1988 and closed the tank in December 1988 in accordance with a NYSDEC-approved Closure Plan. The Waste Solvent Tank was subsequently removed as part of the Site Preparation Activities for the first phase of construction for the Shallow Bedrock Ground Water Interim Action.

Waste solvents were also stored in two small underground tanks located along the eastern side of the plant building. These two Laboratory Waste Solvent Tanks, which were installed in approximately 1960, were reportedly used to collect waste solvents that were gravity fed via underground piping from the Engineering Laboratory located just inside the eastern wall of the plant building. Periodically, the contents of these tanks were reportedly pumped into 55-gallon drums and subsequently taken to the Drum Storage Building and later emptied into the North Evaporation Pit. Use of the two tanks was reportedly discontinued in 1966 or 1967 when the Waste Solvent Tank and the drain lines that connected it to the Engineering Laboratory were installed. The two Laboratory Waste Solvent Tanks were removed in February 1994 as a NYSDEC-approved IRM performed under the Order on Consent executed with NYSDEC for the RI/FS.

1.2.3 Previous Investigations

Systematic studies of subsurface environmental conditions at the site have been performed and are ongoing. Initial studies included the Phase I through Phase IV Investigations, which preceded the commencement of the RI/FS that is being conducted pursuant to the Order on Consent executed with NYSDEC, as discussed below.

1.2.4 Remedial Investigation/Feasibility Study

An Order on Consent (Index No. A 7-0286-92-08) was executed between GE and NYSDEC on March 31, 1993. This order requires that GE perform a RI/FS for the Site, including both on- and off-site areas, and a RI/FS Work Plan was approved by NYSDEC and incorporated into the order. The RI/FS is currently in progress. The Order on Consent also allows GE to propose IRMs for NYSDEC's consideration. With NYSDEC's approval, GE has completed three such IRMs to date.

GE initially retained Dunn Engineering Company (Dunn) to perform the RI. Task 1L of the original RI/FS Work Plan involved a Biodegradation Study, which was completed by Beak Consultants, Ltd., and is documented in an April 1995 report. After the IAROD was issued, GE retained O'Brien & Gere to continue to perform the RI. All of the field activities associated with the RI have been completed, and an RI Report was submitted on June 15, 2012. NYSDEC approved the RI Report in a letter dated January 31, 2013.

GE retained O'Brien & Gere to perform the FS, and the screening of remedial technologies and the development and detailed evaluation of remedial alternatives is underway. Pursuant to the Order on Consent, the FS Report must be completed within 120 days after receipt of NYSDEC's approval of the RI Report. NYSDEC's approval was received on February 4, 2013, and the FS Report is therefore due on or before June 4, 2013.

1.2.5 Interim Remedial Measures

Three IRMs have been completed at the Site. Under the observation of Dunn, OBG Technical Services, Inc. (OBG Tech) excavated and removed the two Laboratory Waste Solvent Tanks and their contents in February 1994. This IRM was performed under the Order on Consent pursuant to the NYSDEC-approved Laboratory Waste Solvent Tanks IRM Work Plan dated September 1993. Soil from the base and walls of the excavations was sampled in accordance with the work plan, and VOCs were detected. The excavations were subsequently backfilled and the contingent investigative activities identified in the work plan were performed to determine the extent of VOCs in the vicinity of the two tanks. These investigative activities included soil borings radiating outward from the two tanks and the installation of overburden and shallow bedrock monitoring wells. The resulting data were incorporated into the Interim

Remedial Investigation (IRI) Report, and these source areas are to be addressed in the FS for the Site.

The second IRM involved the installation of additional fencing and gates at the Site. This Access Restriction IRM was performed by Atlas Fence, Inc. and was completed in December 1994. Construction observation was conducted by O'Brien & Gere. This IRM was also performed under the Order on Consent, in accordance with the NYSDEC-approved Access Restriction IRM Work Plan dated July 1994.

The third IRM focused on surface water, and represented the accelerated implementation of the surface water portion of the Interim Actions that were subsequently included in the IAROD issued by NYSDEC. Therefore, this IRM is discussed in the following section.

1.2.6 Interim Actions

To support development and implementation of Interim Actions addressing the surface water and groundwater in the shallow bedrock source areas, Dunn prepared an IRI Report, submitted to NYSDEC in January 1995, to document the investigative activities which had been performed to date pursuant to the NYSDEC-approved RI/FS Work Plan. The investigative activities conducted pursuant to implementation of the Laboratory Waste Solvent Tanks IRM Work Plan are also described in the IRI Report.

To expedite implementation of the Interim Actions, GE proposed to conduct certain pre-design investigation activities and also pilot test the use of dual-phase extraction technology (specifically, 2-PHASE Extraction™ patented by Xerox Corporation) at the Site. These activities were incorporated into the RI/FS via an Addendum No. 1 to the RI/FS Work Plan. The pre-design investigation activities included: sampling of sediments in the drainage ditch at the Site; a geotechnical assessment of three existing building foundations for possible reuse during the remedial program; and, a constant-head pumping test of the large-diameter well previously installed next to the North Evaporation Pit (designated PW-1). The pilot testing consisted of three dual-phase extraction tests; one test was performed on the large-diameter well previously installed next to the North Evaporation Pit, and the two other tests were performed on large-diameter wells installed in the Waste Solvent Tank area and in the purported West Evaporation Pit area (designated as PW-2 and PW-3, respectively).

After completing the pre-design investigation and pilot testing activities, O'Brien & Gere performed a Focused Feasibility Study (FFS) to evaluate various interim remedial alternatives for surface water and source area shallow bedrock groundwater. A FFS Report was submitted to NYSDEC in February 1995. An addendum to the FFS Report that evaluates two additional interim remedial alternatives for the shallow bedrock groundwater, both of which involve hybridized discharge options, was submitted to NYSDEC in September 1995.

In the FFS Report and its addendum, a number of interim remedial alternatives were developed to address the source area shallow bedrock groundwater at the Site. Alternative SBGW4D was the recommended remedial alternative and included the following activities:

- Extracting groundwater from the shallow bedrock unit in the primary source areas (i.e., the North Evaporation Pit, the Waste Solvent Tank area and the purported West Evaporation Pit area) and, as determined in the design phase, in the secondary source areas (i.e., the Laboratory Waste Solvent Tanks area);

- Constructing, starting up, and operating an on-site groundwater treatment system;

- Discharging treated groundwater by a combination of several methods including (a) recharge of treated or partially-treated (i.e., bioactive) water back to the shallow bedrock unit via injection wells, (b) discharge to the on-site storm sewer, (c) discharge via the sanitary sewer to the City of Auburn's wastewater treatment plant, and: possibly, (d) recharge to the ground surface via sprinkle irrigation during the growing season; and

- Conducting a comprehensive monitoring program to document effectiveness.

NYSDEC released a Proposed Interim Action Plan (PIAP) in February 1996 for public comment, and held a public meeting. After responding to comments, NYSDEC, in consultation with the New York State Department of Health (NYSDOH), issued an IAROD in March 1996. The Order on Consent was subsequently amended on May 12, 1997 to allow implementation of the IAROD. The Interim Actions, including subsequent enhancements, are described in RI/FS Work Plan Addendum No. 3 (O'Brien & Gere, 2003).

As stated previously, the FFS Report and associated addendum recommended alternative SBGW4D to address groundwater in the shallow bedrock source areas at the Site, and this alternative was adopted in the IAROD issued by NYSDEC. The 2-PHASE Extraction™ technology was selected to perform the groundwater extraction component of the Shallow Bedrock Ground Water Interim Action (SBGWIA) because it is the most aggressive method for accomplishing hydraulic control of groundwater at this Site. Currently, a total of thirteen recovery wells are operating at the Site. Through December 2011, more than 55,500,000 gallons of groundwater have been extracted, treated, and discharged by the SBGWIA system. Figures 2 and 3 illustrate the total mass of VOCs removed by the system since operation began in May 2001. As shown in Figure 2, the 2-PHASE Extraction™ system has removed more than 107,000 pounds (lbs) of VOCs, with more than 94,000 lbs being chlorinated (i.e., TCE, 1,2-DCE, VC). In recent years, however, VOC mass removal has diminished (as depicted in Figure 3). Based on this decline, it seems that an EISB approach is now a more viable option for VOC removal (through in-situ treatment rather than extraction) than the existing 2-PHASE Extraction™ system.

2. SUMMARY OF SITE CONDITIONS

2.1 Site Geology and Hydrogeology

The geology and hydrogeology at the Site has been investigated over several years and documented in previous reports, including the Phase IV Subsurface Investigation and IRI Reports (Dunn, 1991; Dunn, 1995). A detailed description is presented in the RI Report (O'Brien & Gere, 2012). However, for the purpose of this report, the following information provides a suitable high-level summary.

2.1.1 Geology

The Site is underlain by about 5 to 25 feet (ft) of overburden materials which are generally fine-grained and of low permeability. The average thickness is about 15 ft, with 8 ft of glaciolacustrine silts and clays overlaying 7 ft of glacial till. The contact between the overburden and the bedrock is irregular with a relief of about 15 ft. A thick sequence of carbonate bedrock strata underlies the overburden materials.

The bedrock strata dip gently to the south at approximately 35 ft per mile. Across the former Powerex facility, approximately 10 ft of change occurs in the elevation of the bedrock strata in a north-south direction. The upper portion of the bedrock (i.e., approximately 34 ft) is composed of limestones of the Onondaga Formation. As shown on Figure 4, the Onondaga Formation is divided into four members, which are, in descending order, the Seneca, Moorehouse, Nedrow and Edgecliff. However, at the former Powerex facility, the Seneca Member of the Onondaga Formation has been eroded away and the Moorehouse Member is the uppermost bedrock unit encountered. In the northern and northwestern portions of the Site, the Moorehouse Member has also been eroded away, and in those portions of the Site the Nedrow Member is the uppermost bedrock unit encountered.

Below the Onondaga Formation lies the Manlius Formation, which is separated from the Onondaga Formation by a discontinuous, thin, intervening remnant of the Springvale Member of the Bois Blanc Formation (formerly referred to as the Oriskany Sandstone). The upper portion of the Manlius Formation is a limestone and has an average thickness of about 15 ft. The lower portion of the Manlius Formation consists of a dolomite and averages about 24 ft in thickness.

The deeper carbonate bedrock units encountered at the Site are the limestones and dolomites of the Rondout, Cobleskill and the Bertie Formations. In the vicinity of the Site, the Rondout Formation averages about 30 ft in thickness and consists of argillaceous dolomites with shaley partings. The Cobleskill Formation is a limestone and averages about 16 ft thick. Below the Cobleskill Formation lies the dolomites of the Bertie Formation, which is divided into three members and are, in descending order, the Oxbow, Forge Hollow and the Fiddlers Green. The uppermost Oxbow Member is about 6.5 ft thick in the vicinity of the Site. The Forge Hollow

Member is approximately 50 ft thick at the Site and includes a 1.7- to 7.9-ft thick gypsum-rich interval within the upper portion of the unit. The lower Fiddlers Green Member is approximately 26 ft thick.

2.1.2 Hydrogeology

A conceptual model of the hydrogeologic system in the vicinity of the former Powerex facility has been developed based on information obtained during the various investigations performed at the Site. The conceptual model includes four hydrogeologic units: the overburden materials and the shallow, intermediate and deep bedrock.

The overburden hydrogeologic unit consists of fill materials, glaciolacustrine silts and clays and glacial till and, at the former Powerex facility, has a thickness ranging from 7.3 to 24.5 ft. Groundwater in the overburden unit occurs just below ground surface during the late fall, winter and early spring. However, the water table is "wicked" down by evapotranspiration during the growing season and significant desaturation of the overburden materials occurs. Recharge to the overburden occurs as a result of precipitation events. Groundwater flow is directed toward local discharge zones including various subsurface storm sewer drains, the drainage ditch and streams located off-site to the northwest and east.

Prior to operation of the SBGWIA system, a temporally persistent water-table divide occurred immediately east of the plant building and was oriented in a north-south direction. Source areas such as the North Evaporation Pit, purported West Evaporation Pit and Waste Solvent Tank area occur on the western side of this divide and groundwater flow from these areas was generally to the northwest.

Due to operation of the SBGWIA system, groundwater flow has been altered in the overburden unit in the vicinity of the groundwater extraction wells, most noticeably east of the plant building near the Laboratory Waste Solvent Tanks area where the extraction wells are screened within both the overburden and shallow bedrock. In addition, dewatering of the upper portion of the shallow bedrock unit has induced downward flow from the overburden unit in this and the other source areas (i.e., the North Evaporation Pit, purported West Evaporation Pit and Waste Solvent Tank areas).

The shallow bedrock unit is composed of the Moorehouse and Nedrow Members of the Onondaga Formation. This unit is thickest in the southern portion of the facility, where it averages about 26 ft thick, and pinches out to the north and northwest due to the southern dip of the bedrock strata. Figures 5a and 5b depict the potentiometric surface within the shallow bedrock during pre-pumping and pumping conditions, respectively. As shown on Figure 5a, prior to operation of the SBGWIA system, groundwater flow in the shallow bedrock hydrogeologic unit was directed toward the streams located off-site to the northwest and east. As a result, a north-south trending divide occurred in the potentiometric surface in the central portion of the facility. The North Evaporation Pit is located near but slightly west of the divide.

The purported West Evaporation Pit and Waste Solvent Tank areas are located along the western side of the divide, and shallow bedrock groundwater flow from these areas is generally directed toward the northwest.

As shown on Figure 5b, shallow bedrock groundwater flow in the southern portion of the former Powerex facility is generally to the north. The effect of groundwater extraction through operation of the SBGWIA system is easily observed by the depressions in the potentiometric surface in the vicinity of the extraction wells located near the North Evaporation Pit, the Waste Solvent Tank area, the purported West Evaporation Pit and the Laboratory Waste Solvent Tanks area.

To the northwest of the facility, shallow bedrock groundwater flow is influenced by extraction well PW-11 and may also be directed toward the "swallets" which are located approximately 1,700 to 2,000 ft northwest of the plant. Surface water flow in the stream to the northwest of the facility "sinks" at these swallets and appears to feed the deep bedrock hydrogeologic unit.

Flow in the shallow bedrock is believed to be primarily along bedding planes which may be widened by solution. The horizontal permeability of the shallow bedrock was calculated during the Phase IV investigation to be 250 to 500 times the vertical permeability. At the former Powerex facility, downward hydraulic gradients exist from the shallow to the intermediate bedrock units, and also from the intermediate to the deep bedrock units. Average water level differences between the I1 and I2 monitoring zones and between the I2 and underlying deep bedrock unit (i.e., the D1, D2 and D3 monitoring zones) are 13 ft and 19 ft, respectively.

As shown on Figure 4, the intermediate bedrock hydrogeologic unit is composed of the upper (i.e., limestone) portion of the Manlius Formation, including the interface between the Manlius and Onondaga Formations (i.e., I1 monitoring zone) and the lower (i.e., dolostone) portion of the Manlius Formation, including the interface between the Rondout and Manlius Formations (i.e., the I2 monitoring zone). Groundwater flow in the intermediate bedrock hydrogeologic system appears to be transitional between the generally northern flow direction in the shallow bedrock unit and a generally southward flow direction in the deep bedrock unit. The mean hydraulic conductivity of the upper and lower intermediate bedrock units is approximately 0.45 and 0.30 feet per day (ft/day), respectively. For comparison purposes, the mean hydraulic conductivity of the shallow bedrock unit is approximately 1.2 ft/day.

As shown on Figure 4, the deep bedrock hydrogeologic system is composed of three monitoring zones. In descending order, they are: the Rondout Formation (i.e., the D1 monitoring zone); the Cobleskill Formation, including the interface between the Cobleskill and Rondout Formations (i.e., the D2 monitoring zone); and the upper 15 ft of the Forge Hollow Member of the Bertie Formation, including the gypsum-rich interval (i.e., the D3 monitoring zone). Groundwater flow in the deep bedrock is generally to the south or south-southwest.

2.2 Nature and Extent of Contamination

The nature and extent of contamination at the Site has been investigated over several years and documented in previous reports, including the Phase IV Subsurface Investigation and IRI Reports (Dunn, 1991; Dunn, 1995). A detailed description is presented in the RI Report (O'Brien & Gere, 2012). The following information, adapted from the IRI Report (Dunn, 1995), provides a summary of the contaminant distribution in the source area soils, overburden groundwater and shallow bedrock (i.e., the S unit) groundwater at the Site. Because drilling from the shallow bedrock unit downward into the lower bedrock units would exacerbate contaminant migration, prior to this EISB pilot test there were no upper intermediate bedrock (i.e., I1 unit) or deeper monitoring wells within the source areas.

2.2.1 Subsurface Soils in Source Areas

Subsurface soil samples were obtained at or near the North Evaporation Pit during the Phase I and Phase IV investigations and were analyzed for VOCs. The most frequently detected VOCs were TCE, 1,2-DCE, acetone, xylenes, toluene and ethylbenzene. The maximum concentrations detected for TCE and xylenes were 12,000 and 6,700 milligrams per kilogram (mg/kg), respectively, suggesting that these compounds may be present as non-aqueous phase liquids (NAPLs) at some locations. The maximum concentration detected for acetone was 2,800 mg/kg, and the presence of this constituent is important to the intrinsic biodegradation of the CVOCs. The maximum concentrations of toluene, ethylbenzene and 1,2-DCE were somewhat lower at 96 mg/kg, 370 mg/kg and 96 mg/kg, respectively. During the Phase I investigation, methanol was detected at elevated concentrations in subsurface soil samples obtained from within the North Evaporation Pit and is considered to be a contaminant in subsurface soils at the North Evaporation Pit; the presence of this constituent is also important to the intrinsic biodegradation of CVOCs at the Site.

A detailed discussion of the extent of free and residual NAPL at the North Evaporation Pit and the other source areas is provided in the RI Report (O'Brien & Gere, 2012), and is based on the data presented in the Phase IV Subsurface Investigation and IRI Reports and also the results of numerous additional subsurface soil samples collected during later phases of the RI. Figure 6a depicts the various lines of evidence regarding the presence of dense non-aqueous phase liquid (DNAPL) in overburden soils, and Figure 6b depicts the probable and potential extent of DNAPL in overburden soils at the three primary source areas. These figures support the selection of the North Evaporation Pit, over the other source areas (including the other two primary source areas [namely, the Waste Solvent Tank and purported West Evaporation Pit areas]), for conducting the EISB pilot test.

Figure 7, which is from the RI Report (O'Brien & Gere, 2012), depicts the extent of VOCs above NYSDEC's industrial use Soil Cleanup Objectives (SCOs). Table 1, which is adapted from the RI Report (O'Brien & Gere, 2012), summarizes the number of soil samples that exceed the industrial use SCOs and mean soil VOC concentrations by source area. As is evident in Figures 6a and 6b and Table 1, most exceedances of the industrial use SCO for TCE occur within the North Evaporation Pit area. The mean concentration of TCE is also greatest in the soil samples collected within the North Evaporation Pit area. These data support the selection of the North Evaporation Pit, over the other source areas (including the other two primary source areas), for conducting the EISB pilot test.

2.2.2 Overburden Groundwater

The most comprehensive ‘snapshot’ of groundwater quality information available to date for the overburden unit was collected during the Phase IV investigation. The most frequently detected VOCs were TCE, 1,2-DCE, VC, acetone, toluene, xylenes and methylene chloride. Three of these VOCs (i.e., acetone, toluene and methylene chloride) are recognized by USEPA as common laboratory contaminants, but are nevertheless believed to be present in localized areas at the Site. Additionally, while not detected frequently, tetrachloroethene (PCE) and 1,1,1-trichloroethane (TCA) were also detected at the Site in localized areas. Methanol was detected at the North Evaporation Pit and Waste Solvent Tank areas based on analyses of subsurface soil samples at and near the North Evaporation Pit and analytical results from groundwater samples obtained from the shallow bedrock unit near the North Evaporation Pit and adjacent to the former Waste Solvent Tank. Results showed that the lateral extent of acetone, methylene chloride and methanol in groundwater in the overburden unit was limited. The limited extent of acetone and methanol, both of which are completely miscible in water and very mobile, is believed to be due to rapid biodegradation, as confirmed by the biodegradation study performed during the early portion of the RI.

Groundwater in the immediate vicinity of the three primary source areas exhibited VOC concentrations exceeding their respective groundwater standards by several orders of magnitude. Groundwater from overburden monitoring well DGC-8S, located near the North Evaporation Pit, exhibited elevated concentrations of TCE, 1,2-DCE, acetone and toluene. In the Waste Solvent Tank area, well DGC-9S exhibited elevated concentrations of these same four compounds. However, the concentration of PCE, 1,2-DCE, 1,1-dichloroethene (1,1-DCE), TCA, 1,1-dichloroethane (1,1-DCA) methylene chloride, ethylbenzene and xylenes also exceeded their respective groundwater standards in this well. Groundwater from monitoring wells DGC- 12S and DGC- 121, both located in the overburden in the vicinity of the purported West Evaporation Pit, exhibited concentrations of TCE, 1,2-DCE, VC and acetone in excess of their respective groundwater standards.

At the former Laboratory Waste Solvent Tanks (which are secondary source areas at the Site), VOC concentrations in overburden groundwater were also found to exceed New York State's groundwater standards. Specifically, the standards for TCE, 1,2-DCE, 1,l-DCE and VC were exceeded in wells DGC- 14S and/or DGC-15S.

Isoconcentration contour maps for TCE, 1,2-DCE and VC in the overburden groundwater are presented in Figures 8a, 8b and 8c, respectively, and indicate that concentrations of these VOCs decrease rapidly in the overburden groundwater with increasing distance from the source areas. There is no evidence of off-site migration of TCE, 1,2-DCE or VC within the overburden.

2.2.3 Shallow Bedrock Groundwater

The results of groundwater samples obtained during the Phase II and III investigations documented the presence of VOCs in groundwater within the shallow bedrock unit at elevated concentrations in the vicinity of the primary source areas (namely, the North Evaporation Pit, Waste Solvent Tank and purported West Evaporation Pit areas). Numerous additional shallow bedrock wells were installed during the subsequent investigation phases. A detailed discussion of these results is provided in the RI Report (O'Brien & Gere, 2012).

During the RI, analytical results for VOCs indicate that shallow bedrock groundwater exceeds New York State's groundwater standards in several wells. The isoconcentration contour map for TCE in the S unit is presented in Figure 8d. The analytical results indicate that the highest TCE concentrations were generally detected in monitoring wells located near the primary source areas, namely well DGC-8B, located near the North Evaporation Pit, well DGC-9B, located adjacent to the former Waste Solvent Tank, and well DGC-12B, located in the vicinity of the purported West Evaporation Pit. Moreover, the concentrations of TCE in wells DGC-8B and DGC-9B are sufficiently high to indicate the potential presence of NAPL at or upgradient from these wells, and a small amount of NAPL was recovered from recovery well PW-1, located near the North Evaporation Pit, during an initial pump test. TCE was also detected in wells DGC-14B and DGC-15B, located near the former Laboratory Waste Solvent Tanks, but at concentrations roughly three to four orders of magnitude lower than in well DGC-8B.

1,2-DCE and VC were the two most frequently detected VOCs in shallow bedrock groundwater. The isoconcentration contour maps for 1,2-DCE and VC are shown in Figures 8e and 8f, respectively. 1,2-DCE and VC appear to migrate away from the primary source areas in the shallow bedrock groundwater to the northwest and to the northeast of the primary source areas.

As shown in Figures 8d through 8f, the highest concentrations of TCE and its degradation products (i.e., 1,2-DCE and VC) in the shallow bedrock groundwater are located just west (downgradient) and within the North Evaporation Pit area. VOC concentration data from the existing 2-PHASE Extraction™ system also demonstrates that most of the contaminant mass (i.e., mass of TCE, 1,2-DCE and VC) is being removed by recovery wells located next to or immediately downgradient from the North Evaporation Pit (e.g., recovery wells PW-1, PW-4 and PW-9), with lesser amounts of contaminant mass being removed by recovery wells located at or near the other source areas. This is shown in Figure 9 (which is from the RI Report [O'Brien &

Gere, 2012]), and is further support for performing the EISB pilot test in the North Evaporation Pit area.

2.3 Summary of Known/Ongoing Degradation Processes in Shallow Bedrock

Results from past bioremediation studies (Beak, 1995) establish that VOCs are being biodegraded in a biological active zone (BAZ) in the shallow bedrock groundwater, which has formed and is being maintained by the presence of acetone and methanol. The BAZ is located in the vicinity of the primary source areas (North Evaporation Pit, purported West Evaporation Pit, and Waste Solvent Tank areas), appears to be horseshoe-shaped, and extends to the northwest (near wells B-7S and B-8S) and east-northeast (near DGC-1B) of the North Evaporation Pit and Waste Solvent Tank area, and to the west of the purported West Evaporation Pit area. Results from subsequent investigations of shallow bedrock groundwater at the Site have also revealed the presence of a robust population of *Dehalococcoides ethenogenes* (DHC) microorganisms in the shallow bedrock that are capable of dechlorinating TCE and its daughter products to ethene. A detailed discussion about the identification of these microorganisms within the shallow bedrock is provided in the RI Report (O'Brien & Gere, 2012).

Although TCE and its daughter products (primarily 1,2-DCE and VC) are undergoing biodegradation in the BAZ, lower concentrations of these VOCs are present on the downgradient side of the BAZ (i.e., primarily to the northwest, but to a lesser degree also to the northeast). Isotopic analysis of the methane in the groundwater samples collected during the biodegradation study clearly shows that intrinsic bioremediation is operating in the shallow bedrock hydrogeologic unit (Beak, 1995).

Although there were no I1 monitoring wells located in or near the North Evaporation Pit prior to this EISB pilot test that could be used to directly assess the extent of biodegradation within the I1 unit, it is likely that groundwater conditions in the I1 unit are very similar to those in the shallow bedrock and that biodegradation of VOCs is likely occurring in the I1 unit. Data to support this will be collected during the EISB pilot test.

3. BIOREMEDIATION OVERVIEW

The following sections provide background information regarding: biotic and abiotic degradation mechanisms of CVOCs (Section 3.1); the application of EISB for source area treatment (Section 3.2); and the application of EISB in fractured rock settings (Section 3.3).

3.1 Degradation Mechanisms of TCE and Daughter Products

3.1.1 Anaerobic Biodegradation

In anaerobic environments, chlorinated ethenes (such as TCE and its degradation products) act as electron acceptors in a process called reductive dehalogenation (specifically, reductive dechlorination). Reductive dechlorination involves the sequential removal of chlorine atoms from the ethene molecule. Each step requires the input of two electrons and two molecules of hydrogen. The electrons and hydrogen come from the oxidation of an electron donor. The extent of dechlorination has been shown to vary in anaerobic dechlorination studies, depending upon the flow and availability of electrons within the anaerobic microbial community (i.e., interspecies hydrogen transfer). For example, in some studies, 1,2-DCE and/or VC were found to accumulate while other studies demonstrated complete dechlorination to non-toxic ethene, carbon dioxide, water and chloride. The electron flow and availability within an anaerobic microbial community is related to the catabolic capabilities of microbial groups or species that are present, and the availability of a suitable electron donor. Figure 10 shows the biodegradation pathways for the chlorinated ethenes detected at the Site.

Microorganisms capable of degrading chlorinated ethenes are common in aquifers. Biodegradation of organic compounds can be enhanced by adding amendments in a process known as biostimulation. Typically, the required amendments are electron donors (i.e., a carbon source) for the degradation of chlorinated ethenes through reduction (dehalogenation) reactions (anaerobic), or electron acceptors for chlorinated ethene degradation through oxidation reactions (aerobic). The reductive mechanism is typically the most efficient and viable degradation pathway for chlorinated ethenes, and the one considered for this Site.

At some sites indigenous microorganisms are not capable of completely degrading the chlorinated ethenes to the desired end products or the population of indigenous microorganisms is insufficient to demonstrate degradation in a reasonable time frame. In these cases, bioremediation may require the addition of both amendments and microorganisms, the latter of which involves a process referred to as bioaugmentation. Even when indigenous microorganisms are present, bioaugmentation can help to shorten the timeframe required to attain an increased level of bioactivity and hasten the degradation of chlorinated ethenes. Several anaerobic microbial consortia have been isolated that completely reduce TCE to ethene, a non-toxic end product. One such microbial consortium (referred to as KB-1®) degrades TCE to ethene when added at sites where this activity is otherwise deficient (Major et al., 2002). KB-1® is a naturally occurring, non-pathogenic microbial culture that contains DHC, the only group of microorganisms documented to promote the complete dechlorination of chlorinated ethenes to non-toxic ethene. At sites where DHC are absent, PCE and TCE dechlorination typically stalls at 1,2-DCE, despite ample electron donor availability. Since DHC are capable of completely dechlorinating PCE and TCE to ethene, the presence of DHC at sites contaminated with these chlorinated ethenes can aid in achieving remedial goals. However, at sites where an appropriate microbial community exists that is capable of dechlorinating PCE and TCE to ethene, but where an insufficient availability of electron donors persists, the addition of electron donors can help promote biodegradation of PCE and TCE to ethene.

As discussed in Section 2.3 above, VOCs are being biodegraded in a BAZ in the shallow bedrock groundwater in and near the primary source areas. Acetone and methanol are being biodegraded (likely to acetic acid and hydrogen) in the BAZ and support a diverse anaerobic microbial community consisting of acetogenic, sulfate-reducing, and methanogenic bacteria, along with a robust population of DHC. Although there were no I1 monitoring wells located within the primary source areas prior to this EISB pilot test, it is likely that reducing conditions also exist in the I1 unit in the source areas, and more specifically beneath the North Evaporation Pit where the EISB pilot test will be performed. Data to support this will be collected during the EISB pilot test.

3.1.2 Aerobic Biodegradation

The aerobic biodegradation of chlorinated ethenes is understood to be the result of cometabolic oxidation mediated by the powerful oxygenase enzymes found in many aerobic bacteria (e.g., methanotrophic and Pseudomonas bacteria). These enzymes are extremely non-specific and react with chlorinated ethenes to bring about their transformation. Oxidation reactions usually require the input of molecular oxygen, and thus proceed under aerobic conditions. Recent studies have shown, however, that some chlorinated ethenes, such as 1,2-DCE and VC, can undergo aerobic biodegradation under conditions of limited oxygen (i.e., dissolved oxygen [DO] concentrations <0.1 milligrams per liter [mg/L]) (Gossett, 2010). Three general mechanisms have been suggested for the action of oxygenase enzymes: incorporation of oxygen in the carbon-hydrogen bond; oxidation of the chlorine substituent; and oxidation of a carbon-carbon double bond via epoxidation. The first two reactions result in the production of alcohols that are easily biodegraded. The epoxide formed in the third reaction is very unstable and spontaneously decomposes.

Although it is possible that aerobic conditions may be present within the bedrock groundwater in some areas of the Site, results from past bioremediation studies (Beak, 1995) and subsequent groundwater investigations conducted during the RI indicate that conditions within the source area overburden and shallow bedrock intervals (and probably the underlying I1 interval) are generally anaerobic. Thus, the aerobic biodegradation process described above is not believed to be a significant process for the shallow bedrock or I1 bedrock source area groundwater at the Site.

3.1.3 Abiotic Degradation

In addition to the biotic processes for biodegradation of chlorinated ethenes discussed in Sections 3.1.1 and 3.1.2 above, non-biological (or abiotic) degradation process can also exist in subsurface groundwater environments. He et al. (2009) recently reported on the role of reactive minerals in degrading chlorinated organic compounds in groundwater. The authors noted that iron and sulfur minerals are common corrosion products in zero-valent iron reactive barriers, and many of these minerals can transform or degrade chlorinated organic compounds. If the ambient concentrations of sulfate are high, reactive iron and sulfur minerals can be expected to form during in-situ anaerobic bioremediation of chlorinated hydrocarbons (e.g., TCE and its daughter products). Abiotic degradation of TCE tends to favor dichloro-elimination reactions to produce acetylene over a sequential hydrogenolysis reaction to produce 1,2-DCE and VC (Butler and Hayes, 2000). Abiotic processes can also degrade chlorinated ethenes to glycolate, acetate, formate, and carbon dioxide (Darlington et al., 2008). While anaerobic biological reactions follow the hydrogenolysis pathways exclusively, the degradation of hydrocarbons through abiotic reactions may avoid the production of toxic daughter products such as VC. However, because the production of 1,2-DCE and VC during abiotic degradation of TCE is not significant, and since the occurrence of acetylene is very short-lived (and thus not generally analyzed for in groundwater samples), it is much more difficult to observe direct evidence of abiotic degradation than it is for degradation by biotic processes. Recent work approached from an engineered perspective has shown that abiotic degradation via biogeochemical reductive dechlorination (BiRD) and in-situ chemical reduction (ISCR) processes (Stroo and Ward, 2010) can play an important role in the overall degradation of chlorinated ethenes.

A variety of iron-bearing soil minerals can degrade chlorinated hydrocarbons. Iron sulfides (disordered mackinawite, mackinawite, and pyrite), iron oxides (magnetite), green rust, and iron-bearing clays have been shown to support complete or nearly complete transformation of PCE, TCE, and carbon tetrachloride. These minerals have been identified in aquatic environments, typically in iron-reducing and/or sulfate-reducing environments. Mineral surfaces act as electron donors and/or reaction mediators to increase the rate of reductive dechlorination. Results from a microcosm study performed using groundwater and fine-grained iron sulfide-rich material from the D3 unit at the Site revealed that abiotic degradation contributes to the significant attenuation of TCE and its daughter products in the D3 unit at the Site (GE, 2011; Harkness et al., 2011). Compound-specific isotope analysis (CSIA) confirmed the losses were at least partially due to degradation and not sorption or other sampling losses. Although abiotic degradation processes are occurring within the D3 unit at the Site, abiotic degradation is not believed to be a significant process for degradation of TCE and its daughter products in the shallow bedrock and I1 units due to the lack of a significant source of sulfate in these units, unlike the gypsum-rich bedrock in the D3 unit.

3.2 EISB for Treatment of Source Areas

As discussed earlier, EISB is the use of bioaugmentation and/or biostimulation to create anaerobic conditions in groundwater and promote contaminant biodegradation for the purposes of minimizing contaminant migration and/or accelerating contaminant mass removal (ITRC, 2005). The majority of the contaminants in the source areas at the Site are DNAPLs in their pure form. DNAPLs are liquids that are heavier (denser) than water, are not completely miscible in water (typically concentrations in the hundreds to thousands of parts per million [ppm]), and occur as a separate phase from the water. Although dechlorinating organisms can withstand very high dissolved concentrations of solvents (e.g., greater than 100,000 micrograms per liter [µg/L]), EISB does not work directly on free-phase DNAPL (ITRC, 2005). Instead, EISB technology relies on solubilization and degradation processes that occur at and near the water-DNAPL interface, respectively. These processes result in enhanced removal through the following proven or proposed mechanisms (ITRC, 2005):

- Increasing the concentration gradient by degradation of the dissolved compounds, thereby increasing the dissolution and diffusion rates;
- Effectively increasing the solubility of chlorinated solvents beyond the DNAPL interface by transforming highly chlorinated species (e.g., PCE and TCE) to daughter products that have significantly lower sorption coefficients (e.g., 1,2-DCE and VC); and
- Possibly increasing the solubility of the DNAPL constituents due to addition of the electron donor solution directly and/or indirectly through the effects of its fermentation products.

The basic requirements for successful EISB implementation for chlorinated ethene DNAPLs include sufficient electron donor distribution, appropriate geochemical conditions, sufficient nutrients, and a capable microbial community (ITRC, 2005). As discussed in Sections 2.3 and 3.1.1, a BAZ with a robust population of microorganisms capable of completely biodegrading TCE and its daughter products to ethene already exists in the shallow bedrock groundwater at the Site. However, lower concentrations of these VOCs are present on the downgradient side of the BAZ, possibly due to nutrient limitations which decrease the efficiency of the BAZ in certain areas. In cases such as this, the most common EISB treatment approach is enhanced reductive dechlorination, which consists of adding organic substrates (i.e., electron donors) to ensure highly reducing conditions and to provide the hydrogen needed by dechlorinating organisms (ITRC, 2005). Several key EISB source area treatment demonstrations are highlighted below.

3.3 Application of EISB in Fractured Rock Settings

Several field demonstrations have shown the ability of the EISB technology, either through biostimulation (addition of electron donors alone), bioaugmentation (addition of TCE-degrading bacteria) or both, to treat PCE and TCE in fractured bedrock settings. For example, Sorenson et al. (2001) conducted an EISB field demonstration to treat a TCE source area in a fractured basalt aquifer in Idaho. High concentrations of electron donor (sodium lactate) were injected into the subsurface. Rapid biostimulation was observed and enhanced reductive dechlorination of TCE was observed after the initial lactate injection. Accelerated mass transfer of TCE was also observed due to enhanced dissolution of the TCE DNAPL.

Geosyntec conducted EISB demonstrations involving bioaugmentation to treat TCE in fractured bedrock at the Caldwell Trucking Superfund Site in Fairfield, New Jersey. The field demonstration involved EISB of a TCE DNAPL source area in fractured basaltic bedrock in a test area measuring approximately 120 ft wide and 40 ft long. Results indicate an order of magnitude decline in PCE and TCE concentrations, with an accompanied increase in the concentration of 1,2-DCE, VC and ethene. There is currently evidence that 1,2-DCE production has peaked and is starting to decline. TCE concentrations in the well containing the highest TCE concentration (680 mg/L) have declined by 90%.

At the former Naval Air Warfare Center in West Trenton, New Jersey, a large-scale pilot study was designed to test EISB as a remedy for the in-situ treatment of TCE- impacted groundwater in bedrock (Geosyntec, 2010). The approach included the addition of a culture containing TCE-degrading bacteria and EVO to sustain growth and activity. The treatment plot has an areal extent of approximately 9,000 square feet and is up to 115 ft deep. The concentration of TCE in the pilot test monitoring wells during the study ranged from 206 µg/L to 17,000 µg/L TCE. The pilot test lasted four years and demonstrated that bioaugmentation was effective in degrading TCE in the treatment plot. Based on the concentration of total organic carbon in groundwater monitoring wells, the electron donor substrate was utilized in approximately one year.

4. OVERVIEW OF PILOT TEST OBJECTIVES AND APPROACH

4.1 Pilot Test Objectives

As stated in Section 1, the primary objective of the pilot test is to determine if EISB is a viable alternative to the existing SBGWIA system for groundwater in the shallow bedrock source areas at the Site (using the I1 interval as a surrogate for the shallow bedrock unit due to continued operation of the 2-PHASE Extraction™ system) and to determine if EISB can be used as an environmentally sustainable technology to replace the existing 2-PHASE Extraction™ system.

A secondary objective of the EISB pilot test is to determine if, given sufficient time, the addition of electron donor in the shallower bedrock unit will positively impact the concentrations of VOCs in the deep bedrock (i.e., D3) wells along the southern boundary of the former Powerex facility. This "top-down" approach relies on the hydraulic gradient and density-driven movement of the electron donor vertically through the system. The use of a denser-than-water electron donor fluid helps to mimic DNAPL migration, and has the potential to deliver electron donor to the deeper units to promote biodegradation.

The performance criteria that will be used to evaluate the performance of EISB in the I1 and D3 intervals during the pilot test, as well as expectations for each of the criteria, are provided in Table 2.

4.2 Overview of Pilot Test Approach

The pilot test area (PTA) is shown in Figure 11 and measures 180 ft by 150 ft and encompasses the entire North Evaporation Pit. The pilot test will consist of injecting electron donors (lactate and EVO) into the I1 bedrock unit via multiple injection wells installed within the PTA. The pilot test injection and monitoring well installations are being performed in two separate phases in order to assess the direction of groundwater flow within the I1 unit before all of the monitoring wells are installed. During Phase 1, all six injection wells and seven of the monitoring wells were installed for water level measurements, hydraulic testing and tracer testing as discussed in Section 5. The remaining pilot test monitoring wells will be installed during Phase 2 as discussed in Section 7. Figure 12 illustrates the layout of the pilot test injection wells and monitoring wells as presented in the Work Plan; as shown on Figures 13 and 21, the six injection wells and seven monitoring wells installed during the Phase 1 activities were located as originally proposed.

Following the Phase 2 well installations, groundwater samples will be collected from the pilot test injection and monitoring wells in order to establish baseline geochemical conditions, VOC concentrations, and microbiological activity in the vicinity of the North Evaporation Pit, the Waste Solvent Tank area and the purported West Evaporation Pit area. Once baseline sampling is complete, the electron donor delivery system will be installed and instrumented, and the injection of electron donors will be initiated. Electron donor addition to the PTA is expected to be conducted for a period of up to six weeks. The PTA may also be bioaugmented with a dehalorespiring microbial culture (e.g., KB-1®) to increase the rate and extent of anaerobic reductive dechlorination.

Performance of the pilot test within the I1 interval will be assessed by monitoring a suite of different parameters as listed below and summarized in Table 3:

- Total organic carbon (TOC) will be used to monitor the distribution of electron donors (lactate and EVO) throughout the treatment area;
- Subsequent biological activity will be measured by changes in geochemical parameters such as DO, nitrate, dissolved iron, sulfate, sodium/chloride ratios, potassium concentrations and oxidation-reduction potential (ORP);
- Increases in population of DHC with the vinyl chloride reductase [vcrA] gene;
- TCE biodegradation will be evidenced by the decline in TCE and daughter product concentrations and the production of ethene and chloride;
- Decrease in chlorine number (N_{CL}), as calculated using concentrations of TCE, 1,2-DCE, and VC;

- Increase in $\delta^{13}C$ for TCE, 1,2-DCE and VC; and
- Increase in the rate of VOC mass removal over time.

VOC concentrations in the D3 wells located along the southern boundary of the former Powerex facility will also be monitored to determine if, given sufficient time, the addition of electron donor in the shallower bedrock units will positively impact the concentrations of VOCs in these deep bedrock wells. Concentrations of other select parameters (see Table 13) in these wells will also be monitored to assess groundwater conditions in the D3 unit at the southern boundary of the former Powerex facility.

The collected data will be used to estimate TCE biodegradation rates and the effectiveness of the EISB technology for the Site.

5. PHASE 1 METHODOLOGY

The Phase 1 pilot test field activities began in August 2012 and were completed in February 2013. Field work was performed by representatives from Geosyntec, O’Brien & Gere, and ARCADIS U.S., Inc. (ARCADIS) as discussed in the following sections.

5.1 Well Installation

5.1.1 Installation of New Bedrock Injection and Monitoring Wells

As discussed in Section 4.2, six new I1 injection wells designated PT-INJ-1 through PT-INJ-6 were installed at the North Evaporation Pit. Additionally, seven new I1 monitoring wells designated PT-MW-1 through PT-MW-7 were installed, five near the North Evaporation Pit and one each at the Waste Solvent Tank and purported West Evaporation Pit areas. The new I1 injection and monitoring wells were installed by Parratt Wolff, Inc. of East Syracuse, New York, with oversight by O’Brien & Gere. The locations of the new I1 injection and monitoring wells are presented in Figure 13. The target interval for each new well was the I1 interval, which consists of the upper limestone portion of the Manlius Formation, including the contact between the Manlius Formation and overlying Edgecliff Member of the Onondaga Formation and the contact between the upper (i.e., limestone) and lower (i.e., dolostone) portions of the Manlius Formation.

At each well location, a borehole was advanced through the overburden to the overburden-bedrock interface utilizing a combination of 8¼-inch hollow stem auger (HSA) and 9⅞-inch mud rotary drilling techniques. The borehole was advanced into the top of the bedrock a minimum of 2 ft. The top of the bedrock was identified by prolonged grinding of the rotary bit.

The overburden was sealed off by grouting a 6-inch inside diameter (ID) iron casing into the rock socket prior to shallow bedrock drilling. The casing was lowered into each borehole and a cement-bentonite grout was tremied into the annular space surrounding the casing, filling the annular space to ground surface. The grout was allowed to set overnight before any further bedrock drilling was performed. The grout material consisted of Type I Portland cement mixed with either a powdered or granular bentonite. The grout mixture was prepared in accordance with American Society for Testing and Materials (ASTM) D5092-90, such that approximately 3 to 5 lbs of bentonite was mixed with 6½ to 7 gallons of water per 94-pound sack of cement.

Each borehole was advanced through the shallow bedrock unit to a target depth corresponding to approximately 1 foot above the interface between the Edgecliff Member of the Onondaga Formation and the Manlius Formation. At each of the seven I1 monitoring well locations and at injection well location PT-INJ-1, shallow bedrock drilling was completed utilizing wireline coring techniques with triple tube core barrels equipped with a HQ3 diamond core bit. Following completion of rock coring at these locations, the borehole was reamed using a 5⅞-inch roller bit to facilitate the installation of a 4-inch ID telescoping casing. At each of the other five I1 injection well locations (i.e., PT-INJ-2 through PT-INJ-6), no coring was performed and the shallow bedrock drilling was completed using a 5⅞-inch roller bit.

The shallow bedrock unit was subsequently sealed off by grouting a 4-inch ID iron casing into the 5⅞-inch rock socket prior to the advancement of the borehole into the intermediate bedrock unit. The casing was lowered into each borehole and a cement-bentonite grout was tremied into the annular space surrounding the casing, filling the annulus to ground surface. The grout was allowed to set overnight before any further bedrock drilling was performed.

After setting the second casing, each borehole was drilled to its total depth using wireline coring techniques with triple tube core barrels equipped with a HQ3 diamond core bit. The target total depth of each borehole was just below the interface between the upper (i.e., limestone) portion of the Manlius Formation and the lower (i.e., dolostone) portion of the Manlius Formation.

Following extraction of the rock core from the bottom of each borehole, the core was described by a qualified O'Brien & Gere geologist and recorded along with related depth, identification of visible fractures, percent recovery and percent rock quality designation (RQD) information. Recovered rock core was placed in labeled core boxes for storage at the site. Detailed information is presented on the core logs in Attachment A. Additional information regarding ground surface elevation, depth to bedrock, depth to the bottom of the casings, the diameter of the casings and the total depth of each borehole is presented on Table 4.

In accordance with the Work Plan, injection wells PT-INJ-1 through PT-INJ-6 were completed as open bedrock boreholes in the I1 interval. However, at monitoring well locations PT-MW-1 through PT-MW-7, the boreholes required stabilization to minimize the potential for bedrock fragments collapsing into the borehole. At these seven locations, 3-inch ID schedule 40 polyvinyl chloride (PVC) well screens and riser pipes were placed in the open borehole, but without the installation of a sand pack, bentonite seal or annular grout seal. Thus, the well screens and riser pipes in the I1 monitoring wells can be easily removed.

For each I1 monitoring and injection well, a lockable cap was installed on top of the 4-inch iron casing that was grouted into the shallow bedrock unit. Table 5 is a summary of the monitoring well construction and survey data, including ground surface and measuring point elevations and open intervals. For detailed information, refer to the well completion logs provided in Attachment B.

5.1.2 Well Development

The injection and monitoring wells installed as part of the Phase 1 pilot test activities were developed following installation to:

- Remove fine-grained materials from the formation;
- Reduce the turbidity of groundwater within the borehole; and,
- Enhance the hydraulic connection between the bedrock borehole and the formation.

Each newly constructed injection and monitoring well was developed as soon as practicable, but not less than 24 hours after installation. Well development activities were performed by O'Brien & Gere.

In accordance with the Work Plan, the goal for well development was to obtain groundwater which exhibited a turbidity of less than or equal to 50 Nephelometric Turbidity Units (NTUs). If this goal could not be obtained, then well development continued until the turbidity level stabilized or until an amount of groundwater equivalent to 10 well volumes was removed. In addition, pH, temperature and specific conductivity measurements were obtained at regular intervals during development to monitor development effectiveness.

Each injection and monitoring well was developed using dedicated high-density polyethylene (HDPE) tubing with one-way check valves and attached surge blocks. Water was evacuated from the well casings by rapidly raising or lowering the tubing and attached foot valve with a Waterra inertial pump system. Addition of a surge block helped to loosen and remove the fine-grained material from within and around the well screen or open section of the borehole.

The specific dates of well development are included on the well completion logs provided in Attachment B.

5.1.3 Surveying

The location and elevations of each newly installed I1 well were surveyed for horizontal and vertical control and were incorporated into the existing site base map. For each of the monitoring wells, the top of the riser pipe and the top of the protective steel casing were surveyed vertically to the nearest 0.01 ft. The top of the protective casing at each injection well was also surveyed vertically to the nearest 0.01 ft. The ground surface at each well location was surveyed to the nearest 0.1 ft. Surveying activities were performed by Richard Rybinski of Richard Rybinski Land Surveying of Manlius, New York, with oversight by O'Brien & Gere.

Survey elevations are based on Benchmark T35 which is referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29). Benchmark T35 was established by the United States Geological Survey (USGS) in 1932 and has a published elevation of 631.37 feet above mean sea level (ft amsl). Horizontal control is referenced to the New York State Plane Coordinate System using the North American Datum of 1983. Survey information for the newly installed wells, including ground surface, steel casing, and measuring point elevations, as well as the easting and northing values for each location are presented in Table 5.

5.2 Water Level Monitoring

5.2.1 Spot Measurements of Water Levels

In accordance with Section 4.3.3 of the Work Plan, water level measurements were obtained from each newly installed I1 injection and monitoring well and also pre-existing I1 interval monitoring wells B-26I1, B-28I1, B-29I1 through B-34I1, B-41I1 and B-42I1 on October 15, 2012. In addition, water level measurements were obtained from each of the I1 injection wells and the I1 monitoring wells listed above on November 12, 2012 and February 5, 2013 in conjunction with the water levels obtained pursuant to the SBGWIA monitoring program. Water level measurements were also obtained from each of the I1 injection and monitoring wells and select shallow bedrock monitoring wells on December 12, 2012 and January 16, 2013 during the near continuous water level monitoring program to benchmark the logged data and allow for calibration of the data loggers, if necessary.

Spot water level measurements were performed by O'Brien & Gere, and were obtained with an electric water level indicator. The electronic water level measurement method involved lowering a probe into the well, which, upon contact with groundwater, completed an electric circuit. At the instant the circuit is closed, the water level indicator provided an audible and/or visual alarm. The depth to water was measured to the nearest 0.01 ft using the marked measuring point on the riser pipe or casing as a reference and was recorded on a field log with the approximate times of measurement. Depths to water were converted to water level elevations with respect to mean sea level using the surveyed measuring point as a reference. The water level probe was washed with deionized distilled water and Alconox between each measurement, and nitrile gloves were worn by the field personnel during measurement.

5.2.2 Near Continuous Water Level Monitoring

As discussed in Section 4.3.3 of the Work Plan, one of objectives of the Phase 1 work was to assess the direction of groundwater flow within the I1 unit in the vicinity of the North Evaporation Pit, to the extent that it is not complicated by the effect of groundwater pumping in the overlying shallow bedrock unit. Therefore, each of the newly installed I1 monitoring and injection wells and certain shallow bedrock wells located near the North Evaporation Pit were fitted with pressure transducers and data loggers to provide data on the interaction of the S and I1 units under variable pumping conditions (due to the routine pulsed pumping schedule and/or more frequent pulsing performed specifically for the Phase 1 work) in the shallow bedrock unit.

The near continuous water level monitoring was initiated by O'Brien & Gere immediately after the completion of the constant head testing on October 29, 2012 (see Section 5.6) and was discontinued on January 16, 2013 in preparation for the tracer test. A summary of the pulsed pumping schedule during the water level logging is presented on Table 6.

Water level fluctuations were monitored using two-channel data loggers and associated pressure transducers manufactured by In-Situ, Inc. (In-Situ). One channel was utilized to collect water level elevation data and the other channel was used to collect temperature data. Water level elevation and groundwater temperature measurements were obtained using a 15-minute recording interval. The pressure transducers used in this testing had a range of 15 and 30 pounds per square inch (psi), or approximately 34.5 and 69 ft of water, respectively. The reported accuracy is within 0.05 % of the full range, or approximately 0.017 and 0.034 ft of water, respectively.

The data loggers were installed as dedicated equipment, whereby all the components of the data logger were installed within the monitoring well and any extra extension cables were coiled within the protective casing. In this manner, the protective casing could be locked during the monitoring period.

At the beginning of the monitoring period, water level measurements were collected from each of the wells in which data loggers were installed. These water levels were used to reference the instrumentation. Water level measurements were also collected manually during the monitoring period in order to benchmark the logged data and allow for calibration, if necessary.

At the end of the monitoring period, the water level elevation data were transferred from the data loggers to a portable computer for processing. In addition, the water levels collected manually were converted to elevations using the surveyed measuring points.

Climatic data (i.e., precipitation and temperature) were obtained from the Cayuga Lock No. 1 weather station via a web-based data retrieval system offered by the Northeast Regional Climate Center located at Cornell University, Ithaca, New York. This weather station is located approximately seven miles west-northwest of the facility.

5.3 Hydraulic Testing

5.3.1 Hydraulic Conductivity Testing

Hydraulic conductivity tests were performed on each of the newly installed I1 injection and monitoring wells to estimate the hydraulic conductivity of the geologic materials immediately surrounding each well. O'Brien & Gere performed the hydraulic conductivity tests on each well using conventional testing methods. Conventional testing methods involved the use of a solid PVC slug or a three-gallon slug of deionized, distilled water to create a rapid perturbation of the static water level followed by monitoring the recovery of water levels toward equilibrium.

Prior to conducting each test, background water levels were collected manually and digitally using an In-Situ data logger and associated pressure transducer. The data logger and cable were cleaned after use in each well using a phosphate-free detergent, distilled water wash and rinse and then wiped dry using paper towels. Following the installation of the data logger, the water level in each well was allowed to re-equilibrate to static conditions prior to starting the test. Once the groundwater recovered to the pre-disturbed level, the data logger was programmed to record water levels on a logarithmic scale, and the test was performed. When feasible the hydraulic conductivity tests were performed until a minimum of 90% recovery was achieved.

As illustrated by the data collected during the hydraulic conductivity tests (see Section 6.2), all of the I1 monitoring and injection wells exhibited a normal response (versus an oscillatory response) to the slug injection/withdrawal and were analyzed using the Hvorslev (1951) method. Analysis of the hydraulic conductivity test data was performed by O'Brien & Gere.

The principle behind Hvorslev's method is that a plot of recovery data (H-h) versus time (t) theoretically follows an exponential decline. If normalized to the initial perturbation (H-Ho), recovery data follows a straight line on a semi-log plot. Horizontal hydraulic conductivity (K) is then calculated as follows:

$K = r2ln(L/R)/2LTo$

where:

K = hydraulic conductivity;

r = radius of riser in which water level fluctuations occur;

L = length of saturated well screen/sand pack/open hole;

R = radius of well screen/sand pack; and

To = basic time lag.

The basic time lag (To) is determined from the straight-line fit (on a semi-log plot) to the recovery data and is the time at which 37% recovery has occurred. The computer program used to calculate horizontal hydraulic conductivity by this method utilizes linear regression techniques applied to the recovery data after logarithmic transformations:

Ln (H-h/H-Ho) = bo = b1t

where:

H = head at equilibrium;

h = head at some time (t);

Ho = head at t=0;

bo = y-intercept;

b1 = slope; and

t = time.

This methodology results in a quantitative and objective "forcing" of a straight line to the recovery data. The slope (b1) and y-intercept (bo) can be used to find To and thus K. The accuracy of fit can be assessed using the coefficient of determination (R2) and residuals.

The Hvorslev method assumes that the aquifer tested is homogeneous. Additionally, application of the above equations to bedrock wells assumes that sufficient joints and bedding planes intersect the intake so as to behave like a porous medium with Darcian flow conditions.

5.3.2 Constant Head Testing

Constant head testing was performed on each of the six newly installed I1 injection wells. O’Brien & Gere performed the constant head tests by injecting treated groundwater from the existing 2-PHASE Extraction™ system through a drop pipe and into each injection well. At each injection well, the rate of injection was adjusted in an attempt to maintain constant heads of about 5 and 10 ft above static water level, except for injection well PT-INJ-1 in which heads of approximately 5 and 25 ft above static water level were targeted. The rate of flow during each test was monitored using an in-line flow meter. Additionally, the total volume of water injected into the formation during each test was monitored using the totalizer on the flow meter. Water level elevation data were obtained from the test I1 injection well, the other nearby I1 injection wells and each of the newly installed I1 monitoring wells using pressure transducers and associated data loggers.

5.3.3 Cross-hole Testing

The cross-hole testing included in Section 4.4.3 of the Work Plan was not performed. This part of the Phase 1 work was eliminated based on the additional monitoring performed during, and the results obtained from, the constant-head tests.

5.4 Conservative Tracer Test

Tracer testing was conducted to provide additional information about the I1 aquifer hydraulics, aid in finalizing the locations of the remaining I1 monitoring wells to be installed at the beginning of Phase 2, and refine the electron donor delivery system and approach. The tracer test was performed by Geosyntec as outlined in Section 4.5 of the Work Plan and as detailed below.

The tracer test was performed at the Site in late January 2013 and involved injecting water containing dissolved bromide (i.e., potassium bromide) and helium tracers into the I1 formation within the North Evaporation Pit via the central injection well (i.e., PT-INJ-1, see Figure 13) and then following the tracer solution with ‘clean’ water (chase water, without the bromide and helium tracers). The water for the tracer solution and chase water was treated groundwater from the existing 2-PHASE Extraction™ system.

The tracer solution was formulated by dissolving potassium bromide and helium gas into approximately 1,050 gallons of water in a holding tank to produce the desired tracer concentrations of roughly 500 mg/L bromide and 1.5 mg/L helium. A submersible pump was used to continuously mix the contents of the tank throughout the test. The test was initiated on January 29, 2013 when tracer solution was injected into PT-INJ-1 at a rate of approximately 1 gallon per minute (gpm) for a period of approximately 17.5 hours. Following injection of 1,050 gallons of tracer solution, 930 gallons of chase water from a second holding tank was injected into PT-INJ-1 at a rate of approximately 1 gpm for an additional 15.5 hours. The tracer solution and chase water were injected into PT-INJ-1 through a drop pipe in the well. Submersible pumps located in the holding tanks were used to deliver the tracer solution and chase water from the holding tanks to PT-INJ-1, and injection flow rates and pressures were monitored throughout the test using an in-line flow meter and pressure gauge fitted to the injection piping. Additionally, the total volume of tracer solution and chase water injected into the formation during the test was monitored using the totalizer on the flow meter.

Groundwater samples were collected from all six of the pilot test injection wells (PT-INJ-1 through PT-INJ-6) on January 23, 2013 prior to initiating the tracer injection (i.e., background samples), and then hourly during the injection period (except for PT-INJ-1, which was not sampled during the injection period as this well served as the injection well for the tracer test). Samples were also collected from five PTA monitoring wells (PT-MW-3 through PT-MW-7) on January 22, 2013 prior to initiating the tracer injection (i.e., background samples). Collection of background samples was performed by Geosyntec using the procedures outlined in Section 5.5 below, and background samples were submitted for laboratory analysis of bromide and helium. A summary of the field parameters measured for each injection and monitoring well during background sample collection is presented on the low flow groundwater sampling logs presented in Attachment E. Collection of groundwater samples from five PTA monitoring wells (PT-MW-3 through PT-MW-7) also occurred on January 30, 2013 during the chase water injection period. For this sampling event, Geosyntec used dedicated submersible pumps and low-density polyethylene (LDPE) tubing for each well. The pump intake was set at the mid-point of the well screen and a volume of groundwater equivalent to twice the tubing volume was purged from the well prior to collecting the sample. Quality assurance/quality control (QA/QC) samples for each sampling event consisted of field blanks and field duplicates. All purge water was containerized and treated on-site using the SBGWIA system.

Field analysis of bromide in samples was undertaken as a screening-level tool to indicate breakthrough and tailing of the bromide tracer. Field analysis of all bromide samples was performed by Geosyntec using an ion-selective electrode. Select samples were also sent to Accutest Laboratories in Dayton, New Jersey for analysis of bromide, and to Eurofins Lancaster Laboratories, Inc. in Lancaster, Pennsylvania for analysis of helium. Laboratory result summary packages are included in Attachment F.

5.5 Groundwater Sample Collection and Analysis

In accordance with Section 4.5.1 of the Work Plan, groundwater samples were collected from existing shallow bedrock extraction wells PW-1, PW-4, PW-12 and PW-13 (all located in the North Evaporation Pit area) by O'Brien & Gere on February 1, February 4 and February 8, 2013 for laboratory analysis of potassium and bromide (the two components of the tracer used during the tracer test). In addition, although not required by the Work Plan, O'Brien & Gere also collected groundwater samples on February 1, 2013 from the five PTA monitoring wells (PT-MW-3 through PT-MW-7) for laboratory analysis of sodium, chloride, potassium and bromide.

Each of the four groundwater extraction wells discussed above were in operation on each date of sampling. Therefore, to perform the sampling, each extraction well had to be shut down to gain access to the well to collect the groundwater sample. Because the wells had been in operation, no purging was performed and the groundwater samples were obtained as grab samples using dedicated bailers. The extraction wells were placed back into operation immediately following each sampling event.

Prior to the collection of groundwater samples from the pilot test monitoring wells, each well was purged prior to sampling using low flow sampling techniques. Purge water was containerized and treated on-site using the SBGWIA system.

A Grundfos and/or monsoon submersible pump and dedicated LDPE tubing were used to purge and collect groundwater samples from each monitoring well. The pump intake was set at the mid-point of the well screen. A direct in-line water quality indicator was installed between the monitoring well and the purge-water container so field measurements could be recorded.

The monitoring wells were purged at a rate of about 150 to 500 milliliters per minute (mL/min). This flow rate was adjusted during purging to minimize groundwater drawdown within the well. To provide additional information on general groundwater conditions, the following field parameters were recorded during the sampling event:

- Temperature in degrees Celsius (°C);
- pH in standard units (SU);
- Specific conductivity in Siemens per centimeter (S/cm);
- ORP in millivolts (mV);
- DO in mg/L; and,
- Turbidity in NTU.

The flow rate and field parameter data were measured at approximately 3 to 5 minute intervals until stabilization was achieved. Stabilization was defined as follows: pH within ±0.1 SU; specific conductivity within ±0.3% S/cm; ORP within ±10 mV; and, DO and turbidity within ±10%. A summary of the field parameters measured for each monitoring well is presented on the low flow groundwater sampling logs presented in Attachment E.

Upon stabilization and prior to sampling, the in-line water quality meter was removed to allow sampling to occur directly from the dedicated LDPE tubing. New nitrile gloves were donned prior to collection of each groundwater sample. Groundwater samples were collected directly from the tubing used to purge the well. Sample containers were labeled with the sample identification, date, time, project identification, and required laboratory analysis. The same information was recorded in the field book. Immediately after sampling, each groundwater sample was placed in a cooler containing wet ice. Chain-of-custody documentation was maintained as described in the Work Plan.

A QA/QC sample consisting of a blind field duplicate sample was also collected. Groundwater samples were analyzed by Columbia Analytical Services, a division of ALS

Environmental, in Rochester, New York. Laboratory result summary packages are included in Attachment F.

6. PHASE 1 OBSERVATIONS AND RESULTS

6.1 Geology in Pilot Test Area

Two cross sections were prepared by O'Brien & Gere to depict the overburden, shallow bedrock and intermediate bedrock in the PTA. The location of each cross-section is shown on Figure 14. Figure 15 presents cross section (A-A'), starting at existing monitoring well DGC-8B, located northwest of the pit, and extending southeastward through the pit to new monitoring well PT-MW-7. Figure 16 presents cross section (B-B'), starting near the Waste Solvent Tank area, and extending northeastward through the North Evaporation Pit to extraction well PW-12.

As shown on Figures 15 and 16, the overburden materials in the vicinity of the North Evaporation Pit are generally thinner in the area north and northwest of the pit and increase in thickness to the south, ranging in thickness from about 11.5 to about 18 ft. Also as shown on Figures 15 and 16, the upper portion of the bedrock in the immediate vicinity of the North Evaporation Pit is composed of limestones of the Moorehouse, Nedrow and Edgecliff Members of the Onondaga Formation. Below the Onondaga Formation lies the Manlius Formation, which is considered the intermediate bedrock hydrogeologic unit at the site. The new monitoring and injection wells installed during Phase 1 extended into the upper (i.e., limestone) portion of the Manlius Formation (designated as the I1 interval).

In the vicinity of the North Evaporation Pit, the thickness of the Moorehouse Member of the Onondaga Formation ranges from 5.7 to 8.7 ft and has an average thickness of about 6.9 ft. The thickness of the Nedrow Member ranges from 9.1 to 10.4 ft and has an average thickness of about 9.7 ft. The thickness of the Edgecliff Member of the Onondaga Formation ranges from 9.3 to 10.0 ft and has an average thickness of about 9.5 ft. The thickness of the upper Manlius Formation (i.e., the I1 unit) ranges from 13.5 to 13.9 ft and has an average thickness of about 13.7 ft.

6.2 Hydraulic Testing

In-situ hydraulic conductivity tests were performed in each of the newly installed I1 monitoring and injection wells as part of the Phase 1 work. A summary of the type of slug test, number of tests performed at each well, number of tests analyzed for each well, the analysis method and the length of the open hole is provided in Table 7. Additional details on the data analysis are presented in Attachment C. The bulk rock horizontal hydraulic conductivity of the I1 unit in the vicinity if the North Evaporation Pit (i.e., monitoring wells PT-MW-3 through PT-MW-7 and injection wells PT-INJ-1 through PT-INJ-6) ranged from 0.13 to 13.5 ft/day (4.56E-05 to 4.77E-03 centimeters per second [cm/sec]), with a geometric mean of approximately 2.82

ft/day (9.95E-04 cm/sec). Five of the six newly installed I1 injection wells (PT-INJ-1, PT-INJ-2, PT-INJ-3, PT-INJ-5 and PT-INJ-6) had relatively similar hydraulic conductivities ranging from 4.31 to 10.51 ft/day (1.52E-03 to 3.72E-03 cm/sec). The hydraulic conductivity of injection well PT-INJ-4 was roughly an order of magnitude lower than the other injection wells at 0.68 ft/day (2.42E-04 cm/sec).

Constant head testing was also performed on each of the six newly installed I1 injection wells. At each injection well, the rate of injection was adjusted in an attempt to create and maintain constant heads of about 5 and 10 ft above static water level, except for injection well PT-INJ-1 in which heads of approximately 5 and 25 ft above static water level were targeted. Table 8 summarizes the results of the constant head testing. The table includes a summary of the injection rate, change in groundwater level during each step of the test, an estimate of the specific capacity of each injection well and the total volume of water injected during each constant head test. The results of the constant head testing are presented graphically in Attachment D. As shown on Table 8, the injection rates during the 5-foot constant head tests ranged from 0.3 to 1.2 gpm with an arithmetic mean injection rate of about 0.83 gpm. The injection rates during the 10-foot constant head tests ranged from 0.9 to 1.95 gpm with an arithmetic mean injection rate of about 1.42 gpm. The injection rate during the 25-foot constant head test at well PT-INJ-1 was 3.5 gpm.

As shown on Table 8, an estimate of the specific capacity for each injection well was made using the injection rate and change in groundwater level during each constant head test. The specific capacity estimates ranged from 0.06 to 0.21 gallons per minute per foot (gpm/ft) with an arithmetic mean specific capacity of about 0.15 gpm/ft. The total volume of water injected into each injection well ranged from 367 gallons at injection well PT-INJ-4 to 2,138 gallons at injection well PT-INJ-1; the total for all six injection wells was 4,865 gallons. The results of the constant head testing coupled with the available head at each injection well demonstrate that a sustainable injection rate of 0.5 gpm (which was assumed in the Work Plan) can be achieved, and probably exceeded, for each of the six I1 injection wells.

As shown graphically in Attachment D, the near continuous water level logging data obtained during the constant head tests document the hydraulic response associated with injection into each of the I1 injection wells. During the testing of each injection well, a marked response was observed at the other five injection wells. Significant hydraulic responses to the injections were also observed at the various I1 monitoring wells located in the North Evaporation Pit area. These data demonstrate good connectivity in the I1 within the PTA. This connectivity was confirmed by the results of the tracer test (see Section 6.4).

6.3 Water Level Monitoring

Water level elevation data are presented in Table 9. As expected and confirmed by the data presented on Table 9, the water level elevations in the I1 monitoring and injection wells in the

PTA are lower than the water level elevations in nearby S monitoring wells. Based on the water level elevation data presented on Table 9 for February 5, 2013, the average water level elevations in the S and the I1 hydrogeologic units in the North Evaporation Pit area were 628.17 and 608.75 ft amsl, respectively, a difference of approximately 19.4 ft. As noted on Table 6, all of the shallow bedrock pumping wells associated with the SBGWIA system were in continuous operation during the February 5, 2013 water level monitoring event, and had been since December 24, 2012, so this difference is representative of pumping conditions. A greater difference might be observed under non-pumping conditions. The average ground surface elevation in the PTA is approximately 639.6 ft amsl, which is approximately 30.8 ft higher than the average water level elevation in the I1 monitoring and injection wells in the North Evaporation Pit area on February 5, 2103. Thus, the available head for injection into the I1 unit is significant even with gravity discharge.

Figure 17 shows the potentiometric surface in the PTA for the I1 hydrogeologic unit on February 5, 2013. As shown on Figure 17, the groundwater flow direction in the I1 unit is generally to the south in the vicinity of the North Evaporation Pit.

Figure 18 presents graphical representations of the near continuous water level elevation data recorded at each of the newly installed I1 monitoring and injection wells and select shallow bedrock monitoring wells located in the North Evaporation Pit area during the pulsed pumping performed as part of the Phase 1 pilot test work. The purpose of this monitoring was to provide data on the interaction of the S and I1 units under variable pumping conditions. As shown on Figure 18, with the exception of I1 monitoring wells PT-MW-1 and PT-MW-2 (which are not located at or near the North Evaporation Pit), all of the I1 injection and monitoring wells responded to the variable pumping of extraction wells PW-1, PW-4, PW-12 and PW-13 (all of which are located around the North Evaporation Pit). This is best illustrated by the hydraulic response observed when these four extraction wells were turned off on December 17, 2013 and subsequently restarted on December 24, 2013 (Interval between I and J as indicated on Figure 18).

6.4 Conservative Tracer Test

The helium results were not useful, as none of the background or tracer test groundwater samples submitted for laboratory analysis of helium yielded detectable concentrations. It is speculated that the helium either did not fully dissolve into the tracer solution water or came out of solution prior to sample collection or during sample transport to the laboratory. Thus, the remainder of this section will focus on the bromide results obtained during the test.

Table 10 presents a summary of the laboratory-measured bromide concentrations for groundwater samples collected from the pilot test injection wells (PT-INJ-1 through PT-INJ-6) and five PTA monitoring wells (PT-MW-3 through PT-MW-7) prior to and during the tracer test, as well as laboratory-measured bromide concentrations for samples collected from the tracer solution tank. Bromide concentrations in background samples from the pilot test injection and monitoring wells were below the laboratory reporting limits. The concentration of bromide in the tracer solution tank was approximately 425 mg/L (with measured concentrations of 424 mg/L and 428 mg/L at the start and end of the tracer solution injection period, respectively). Figure 19 presents the bromide breakthrough profiles for the pilot test injection wells that were used as monitoring wells during the tracer test (PT-INJ-2 through PT-INJ-6). Both laboratory-measured bromide concentrations as well as bromide concentrations inferred from field analysis using an ion-selectrive electrode are shown in Figure 19. Field-measured concentrations of bromide were generally higher than bromide concentrations measured by the laboratory. Field results are only considered to be partially quantitative due to the limitations of the field instrument and served solely as a screening-level tool to indicate breakthrough and tailing of the bromide tracer.

Once injection of the tracer solution was initiated, bromide was quickly (i.e., within a few hours, even before injection of the chase water) observed in all five surrounding injection wells (PT-INJ-2 through PT-INJ-6). Laboratory-measured bromide concentrations reached the concentration of the tracer solution after only a few hours for wells PT-INJ-2 and PT-INJ-5, within seven hours for PT-INJ-3 and within nine hours for PT-INJ-6 (Figure 19). At well PT-INJ-4, the laboratory-measured bromide concentrations reached levels that were more than 60% of the injected bromide concentration. Bromide was also detected at high concentrations (134 to 180 mg/L) in pilot test monitoring wells PT-MW-3 and PT-MW-6 during the water injection period, while lower concentrations of bromide (<10mg/L) were observed in pilot test monitoring wells PT-MW-3, PT-MW-4 and PT-MW-7 during the same period. Figure 20 depicts the peak laboratory-measured bromide concentrations in the five pilot test injection wells and the five PTA monitoring wells during the tracer test and post-test sampling periods (i.e., from January 29 through February 1, 2013).

The sustained injection rate during the tracer test was double the 0.5 gpm rate that was assumed in the Work Plan for Phase 2. Based on results of the in-situ hydraulic conductivity and constant head pumping tests (see Section 6.2), the potassium lactate and/or EVO injection rates into the I1 unit during Phase 2 could be further increased if desired.

A simple calculation was performed to estimate the effective porosity of the I1 unit based on breakthrough of the bromide in injection wells PT-INJ-2 through PT-INJ-6. It was assumed that breakthrough occurred when the bromide concentration reached one half the maximum value based on the field measurements. The results are shown in Table 11. The calculated effective porosities ranged from 0.00064 to 0.0038, with an arithmetic mean of 0.0018. This mean value has been used to help calculate the Phase 2 injection volumes for lactate and EVO (see Section 7.2 below).

6.5 Shallow Bedrock Groundwater Monitoring

As presented in Table 12, groundwater samples were obtained on three dates following completion of the tracer test from extraction wells PW-1, PW-4, PW-12 and PW-13 (all of which are located around the North Evaporation Pit) for laboratory analysis of potassium and bromide (the two components of the tracer) to assess the connectivity between the S and I1 monitoring intervals. The first sampling event was conducted on February 1, 2013, two days after completing the tracer test. The subsequent sampling events were conducted on February 4 and 8, 2013, five and nine days after completing the tracer test. As shown in Table 12, bromide was not detected at or above the laboratory reporting limit of 1 mg/L at extraction wells PW-1 and PW-13 during any of the three sampling events. However, bromide was detected at concentrations of 2.5 and 1.3 mg/L in the samples collected on February 1, 2013 (the first sampling event, two days after the tracer test was completed) from extraction wells PW-4 and PW-12. Subsequently, bromide was not detected in the samples collected from extraction well PW-4 on February 4 and 8, 2013. Bromide was detected at an estimated concentration of 0.9 mg/L in the sample collected from extraction well PW-12 on February 4, 2013, but was not detected in the sample collected on February 8, 2013.

Groundwater samples were also collected on eight dates from the main separator of the SBGWIA system for laboratory analysis of bromide. During these sampling events, the groundwater coming into the main separator was from extraction wells PW-1, PW-4, PW-6, PW-7, PW-9, PW-10, PW-12 and PW-13; groundwater from the other extraction wells was going through the auxiliary separator. Collection of samples from the main separator was performed by ARCADIS. As shown on Table 11, bromide was detected at a concentration of 1.5 mg/L in the main separator sample collected on January 30, 2013 (the last day of the tracer test).

The bromide data from the pumping wells and the main separator to the SBGWIA system demonstrate movement of some tracer solution from the I1 unit upward into the S unit in response to the ongoing pumping.

Potassium was detected in all of the samples collected from extraction wells PW-1, PW-4, PW-12 and PW-13 on February 1, 4 and 8, 2013 at concentrations ranging from an estimated 1,070 µg/L at PW-12 to 2,020 µg/L at PW-4. Potassium was also detected in four of the eight samples collected from the main separator to the SBGWIA system at concentrations ranging from an estimated 2,100 µg/L to 2,200 µg/L (potassium was not detected in the other four samples). The concentrations of potassium in the four extraction wells and the main separator are indicative of background conditions, and, in contrast to the bromide data, do not provide any further evidence of the upward movement of tracer solution from the I1 to S units.

6.6 Intermediate Bedrock Groundwater Monitoring

As discussed in Section 5.4, Geosyntec collected groundwater samples on January 22, 2013 from five PTA monitoring wells (PT-MW-3 through PT-MW-7) and on January 23, 2013 from the six pilot test injection wells for laboratory analysis of bromide and helium (see Table 10 for bromide results). O'Brien & Gere also collected groundwater samples on February 1, 2013 from five PTA monitoring wells (PT-MW-3 through PT-MW-7) for laboratory analysis of sodium, chloride, potassium and bromide (see Section 5.5 and Table 12). The injection and monitoring wells were sampled using low flow methods, including the measurement of certain field parameters (e.g., DO, ORP and pH) during purging. The field parameter data are presented on the sampling logs in Appendix E. As expected, the pH data are quite neutral, with values ranging from 6.5 to 7.2 SU for all wells except PT-INJ-4, which had an anomalously high pH value of 8.6 SU. The DO results are quite low, ranging from 0.17 to 0.91 mg/L, and the ORP results are negative, ranging from -57 to -164 mV. These data show that conditions within the I1 unit at and near the North Evaporation Pit are favorable for the reductive dechlorination of CVOCs, especially when one considers the potential impact of the tracer test on these sampling results (aerated groundwater from the 2-PHASE Extraction™ system was used for the tracer solution and chase water).

Based on the laboratory analysis results provided in Table 12, the molar ratio of chloride to sodium is significantly higher than unity for the five PTA monitoring wells sampled on February 1, 2013. The molar ratio ranges from 3.96 and 3.99 for PT-MW-3 and PT-MW-6, respectively, to 11.9 and 12.9 for PT-MW-4 and PT-MW-7, respectively. Moreover, the two wells with the lowest chloride:sodium molar ratios (PT-MW-3 and PT-MW-6) are the same wells that had the highest bromide concentrations, and were therefore likely most influenced by the tracer solution that was injected two days before the sampling event. The concentrations of bromide in the other three monitoring wells were lower by almost one order of magnitude or more, and the chloride:sodium molar ratios were much higher, ranging from 6.94 to 12.9. The chloride:sodium molar ratio in the treated groundwater from the 2-PHASE Extraction™ system is not known, but available data for the concentration of chloride within the treatment system ranges from 48.8 to 76.1 mg/L, considerably lower than the concentrations of chloride in PT-MW-7 and PT-MW-4 (173 and 185 mg/L, respectively). Thus, the molar ratio of chloride to sodium in at least two of the five PTA monitoring wells suggests that reductive dechlorination of CVOCs may already be occurring in the I1 unit at and near the North Evaporation Pit.

7. PHASE 2 PILOT TEST ACTIVITIES

The Phase 2 and Phase 3 pilot test activities will be performed in accordance with the Work Plan except as modified below based on the Phase 1 results. Additional details are also provided below for certain Phase 2 and Phase 3 activities.

7.1 Additional Monitoring Wells

The Work Plan included the installation of up to 14 new monitoring wells during the pilot test, with seven I1 monitoring wells installed during Phase 1 and up to seven additional I1 monitoring wells to be installed during Phase 2. As discussed in Section 6.3 and shown on

Figure 17, groundwater flow in the I1 unit is generally to the south in the vicinity of the North Evaporation Pit. Adequate coverage for the pilot test can be achieved by installing six additional I1 monitoring wells in the PTA as part of the Phase 2 activities: two additional monitoring wells located within the PTA south of the North Evaporation Pit (designated PT-MW-9 and PT-MW-10); two additional monitoring wells located within the PTA southwest of the North Evaporation Pit (designated PT-MW-8 and PT-MW-11); one additional monitoring well located within the PTA south-southwest of the North Evaporation Pit (designated PT-MW-12); and one additional monitoring well located within the PTA northeast of the North Evaporation Pit (designated PT-MW-13). These six new I1 monitoring wells are shown in Figure 21 along with the I1 injection and monitoring wells that were installed during Phase 1. The additional Phase 2 monitoring wells will be installed, developed, surveyed any hydraulically tested using the same methodology as for the Phase 1 monitoring wells (see Sections 5.1.1, 5.1.2, 5.1.3 and 5.3.1).

7.2 Baseline Sampling

The anticipated number of baseline groundwater samples presented in the Work Plan has been modified to reflect the change to the number of I1 monitoring wells that will be installed during Phase 2, as discussed in Section 7.1. The revised number of groundwater samples anticipated during the baseline sampling is presented in Table 12.

7.3 Lactate and EVO Addition

Per the Work Plan, biostimulation of the indigenous microorganisms will involve the addition of electron donors (both lactate and EVO) via the six pilot test injection wells. As a soluble electron donor, lactate is both quickly metabolized by bacteria and also migrates at approximately the same velocity as groundwater when dissolved in groundwater. EVO is metabolized more slowly than lactate and also tends to either deposit within, and/or adhere to, aquifer materials due to its general immiscible nature, forming a slow-release electron donor source.

Biostimulation using lactate will be conducted first to facilitate rapid biodegradation in the PTA and to provide a source for migration into deeper units. Potassium lactate will be added either as a 60% solution (as purchased) or, if needed, diluted by combining potassium lactate and fully treated water from the existing 2-PHASE Extraction™ system in a storage tank to achieve somewhat more dilute solutions. Using the lowest and mean effective porosity estimates for the I1 unit calculated in Section 6.4, between 78,000 lbs (or about 6,985 gallons, assuming an effective porosity of 0.00064) and 220,000 lbs (or about 19,705 gallons, assuming an effective porosity of 0.0018) of potassium lactate solution (as purchased) will be injected into the I1 unit via the six pilot test injection wells (i.e., approximately 13,000 to 36,700 lbs [or about 1,165 to 3,285 gallons] in each injection well). Use of an injection rate of 0.5 to 1 gpm is planned, although the results of the Phase 1 pilot test activities suggest that a higher injection rate is possible. The lactate injections will be followed with injection of chase water (i.e., a minimum of two well volumes for each injection well) in order to push any residual electron donor out of the injection wells.

Following lactate injections, groundwater samples will be collected on at least two occasions from select injection wells and PTA monitoring wells (PT-MW-3 through PT-MW-13) for laboratory analysis of bromide, TOC and/or volatile fatty acids (VFAs). After a minimum of two weeks, EVO will be injected into the PTA to serve as a longer-term, slow-release electron donor in the I1 unit. To prepare the EVO solution, fully treated water from the existing 2-PHASE Extraction™ system will be amended with EVO to a target concentration of up to 5%. It is envisioned that between 580 lbs (or about 70 gallons, assuming an effective porosity of 0.00064) and 1,600 lbs (or about 195 gallons, assuming an effective porosity of 0.0018) of EVO (as purchased) will be injected into the I1 unit via the six pilot test injection wells (i.e., approximately 97 to 267 lbs, or 12 to 33 gallons, of EVO [as purchased] in each injection well). An injection rate of 1 gpm is planned. The injection of EVO into the I1 unit will be limited to three injection wells at a time so that the stagnation points during the injection are not constant. The EVO injections will be followed with injection of chase water (i.e., a minimum of five well volumes for each injection well) in order to push any residual electron donor out of the injection wells.

Fully treated water from the existing 2-PHASE Extraction™ system will be used as make-up water for both the lactate and EVO solutions (and also for the chase water injections). Nutrients in the form of ammonia-nitrogen phosphate (ammonium phosphate dibasic), yeast extract and/or vitamin B12 will be added with the electron donors, either by incorporation into the donor materials by the electron donor vendors or by mixing with the donors in the field. Potassium bromide will also be added to the lactate solution for use as a tracer; sufficient potassium bromide will be added to the lactate to achieve a tracer concentration of up to 1,000 mg/L bromide.

Injection of the lactate and EVO solutions into the I1 injection wells will be accomplished using either a gravity feed approach or through the use of a metering pump (i.e., pressurized injection). In-line flow sensors will be used to measure the flow rate and total volume of injected electron donor solution. The lactate solution will be continuously mixed in the storage tank throughout the injection period. During EVO solution injections, an in-line mixing column will be used to ensure adequate mixing of the EVO and treated water prior to delivery. The injection system will be fitted with a manual sampling port downstream of the mixing column to allow collection of samples for measuring target electron donor concentrations in the amended treated water. Electron donor (lactate and EVO) and treated water will be contained in storage tanks. Lines will be fitted with backflow preventers to prevent back-siphoning during shutdown periods. The key electron donor delivery components will be housed in a locked, serviced (electrical), temperature-controlled trailer or shed. Figure 22 presents the process and instrumentation diagram (P&ID) for the electron donor injection system (and is unchanged from the Work Plan).

As noted in Sections 6.3 and 6.5, the results of the near continuous water level elevation logging and the bromide data obtained from the four extraction wells and main separator indicate that there is some connectivity between the S and I1 monitoring intervals in the vicinity of the North Evaporation Pit. Due to the documented movement of some bromide tracer from the I1 unit upward into the S unit during and shortly after the tracer test, it is recommended that extraction wells PW-1, PW-4, PW-12 and PW-13 be shut down during periods when lactate and/or EVO are being injected into the pilot test injection wells, and that these four extraction wells remain shut down for a period of two to four weeks after such injections to avoid the potential for induced upward migration of electron donors into the shallow bedrock in the vicinity of the North Evaporation Pit.

7.4 Performance Monitoring

The performance monitoring schedule outlined in the Work Plan has been modified to reflect the change to the number of I1 monitoring wells that will be installed during Phase 2, as discussed in Section 7.1. The revised number of groundwater samples anticipated during the performance monitoring phase is presented in Table 12.

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TABLES

TABLE 1: SUBSURFACE SOIL SCREENING CRITERIA EXCEEDANCES
Former Powerex, Inc. Facility, Auburn, NY

Volatile Organic Compounds	Mean[a] Detected Concentration (mg/kg)					Number of Industrial Use Screening Criteria[b] Exceedances[c,d]				
	North Evaporation Pit Area	Concrete Waste Solvent Tank Area	Purported West Evaporation Pit Area	Laboratory Waste Solvent Tanks Area	Purported Fire Training Pit Area	North Evaporation Pit Area	Concrete Waste Solvent Tank Area	Purported West Evaporation Pit Area	Laboratory Waste Solvent Tanks Area	Purported Fire Training Pit Area
1,1,1-Trichloroethane	6.9	9.4	--	0.006	--	0	0	--	0	--
1,1,2,2-Tetrachloroethane	0.99	--	0.001	--	--	--	--	--	--	--
1,1,2-Trichloroethane	0.97	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	0.35	--	0.003	--	--	0	--	0	--
1,1-Dichloroethene	--	0.40	0.002	0.006	0.01	--	0	0	0	0
1,2-Dichlorobenzene	0.36	--	--	--	--	0	--	--	--	--
1,2-Dichloroethane	--	--	0.044	0.002	--	--	--	0	0	--
1,2-Dichloroethene (total)	--	8.7	0.95	0.71	0.33	--	0	0	0	0
1,2-Dichloropropane	--	--	--	--	0.011	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--	--	--	--	--
2-Butanone	--	0.01	0.002	0.05	0.02	--	0	0	0	0
2-Chloroethyl vinyl ether	--	--	--	--	--	--	--	--	--	--
2-Hexanone	0.055	--	--	0.01	--	--	--	--	--	--
4-Methyl-2-pentanone	0.009	--	--	--	0.011	--	--	--	--	--
Acetone	343	43	40	4.1	0.47	6	0	0	0	0
Benzene	0.001	0.002	0.0006	0.004	--	0	0	0	0	--
Bromodichloromethane	--	--	--	--	0.03	--	--	--	--	--
Bromoform	--	--	--	--	--	--	--	--	--	--
Bromomethane	--	0.56	0.36	--	0.001	--	--	--	--	--
Carbon disulfide	--	0.002	0.09	0.01	0.004	--	--	--	--	--
Carbon tetrachloride	1.9	--	0.003	--	--	0	--	0	--	--
Chlorobenzene	0.84	--	--	--	1.1	0	--	--	--	0
Chloroethane	--	--	--	--	--	--	--	--	--	--
Chloroform	--	0.3	--	--	--	--	0	--	--	--
Chloromethane	--	0.64	0.23	--	0.001	--	--	--	--	--
cis-1,2-Dichloroethene	3.8	6.1	0.62	0.18	0.31	0	0	0	0	0
cis-1,3-Dichloropropene	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	29	11	0.33	0.08	0.01	0	0	0	0	0
m&p-Xylenes	11	--	--	--	--	0	--	--	--	--
Methyl isopropyl ketone	1.2	--	--	--	--	--	--	--	--	--
Methylene chloride	1.2	6.8	0.27	0.01	0.02	0	0	0	0	0
o-Xylene	2.9	14.2	0.11	0.03	--	0	0	0	0	--
Styrene	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	4	83	0.46	0.02	4.7	0	2	0	0	0
Toluene	23	6	2.1	0.004	0.03	0	0	0	0	0
trans-1,2-Dichloroethene	0.54	0.00	0.02	0.01	0.01	0	0	0	0	0
trans-1,3-Dichloropropene	--	--	--	--	--	--	--	--	--	--
Trichloroethene	617	309	86	14	0.60	18	7	4	0	0
Trichlorofluoromethane	20	--	1	--	--	--	--	--	--	--
Vinyl acetate	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.00	0.39	0.003	0.97	0.08	0	0	0	0	0
Xylenes (total)	281	43	3.4	0.3	0.03	4	0	0	0	0

Notes:

mg/kg - Milligrams per kilogram.

[a] - Mean (arithmetic) concentrations were calculated using detected concentrations only.

[b] - Subsurface soil screening criteria: Part 375-6.8 (b) restricted use Soil Cleanup Objectives (SCOs) for industrial use.

[c] - There are no Part 375-6.8 (b) SCOs for total 1,2-dichloroethene. The Part 375-6.8 (b) SCOs for cis-1,2-dichloroethene are used because this is the primary isomer of 1,2-dichloroethene found on-site.

[d] - Indicates there are no Part 375-6.8 (b) SCOs for individual isomers of xylene. The Part 375-6.8 (b) SCOs apply to mixed xylene, and are used for individual isomers in the above statistical analysis.

- Number of items.

-- - Compound was not detected and/or compound does not have a Part 375-6.8 (b) SCO for industrial use.

Duplicate samples were included in the data set used to generate this table.

TABLE 2: PILOT TEST CRITERIA
Former Powerex, Inc. Facility, Auburn, NY

Pilot Test Criteria	Expectations
Intermediate Bedrock (I1) Interval	
1) Reduction in VOC concentrations in pilot test area	Change in VOC (TCE, 1,2-DCE, VC) concentrations in pilot test area over baseline conditions based on groundwater samples collected from the monitoring wells.
2) More efficient VOC mass removal compared to existing 2-PHASE Extraction™ system	EISB will have lower O&M costs versus existing 2-PHASE Extraction™ system for a given VOC mass removal, or EISB will have greater VOC mass removal than existing 2-PHASE Extraction™ system at the same O&M cost.
3) Greater energy efficiency compared to existing 2-PHASE Extraction™ system (i.e., decreased energy consumption)[a,b]	EISB will consume less energy than existing 2-PHASE Extraction™ system for a given VOC mass removal, or will remove more VOC mass at the same energy consumption level than the existing 2-PHASE Extraction™ system.
4) Decrease in chlorine number (N_{CL}) in pilot test area	Decrease in N_{CL} (calculated using concentrations of TCE, 1,2-DCE and VC) in pilot test area over baseline conditions based on groundwater samples collected from the monitoring wells.
5) Increase in δ^{13}C for TCE, 1,2-DCE and VC in pilot test area	Increase in the ratio of ^{13}C to ^{12}C for TCE, 1,2-DCE and VC in pilot test area over baseline conditions based on groundwater samples collected from monitoring wells.
6) Increase in VOC mass removal rate in pilot test area	The rate of VOC mass removal with time will increase within the pilot test area following addition of electron donor.
7) Increase in chloride, TOC and potassium concentrations in pilot test area	Increase in chloride, TOC and potassium concentrations in pilot test area over baseline conditions based groundwater samples collected from the monitoring wells.
8) Increase in Cl/Na ratio in pilot test area	Increase in ratio of chloride to sodium concentrations in pilot test area over baseline conditions based groundwater samples collected from the monitoring wells.
9) Increase in population of DHC with the vcrA gene in pilot test area	Addition of electron donor will promote increased growth of DHC with the vcrA gene in the I1 interval within the pilot test area.
10) Reduction in ORP and sulfate and dissolved oxygen concentrations in pilot test area	Addition of electron donor will enhance reducing conditions in the pilot test area; decreases in ORP and in concentrations of dissolved oxygen and sulfate are expected over baseline conditions based on groundwater samples collected from the monitoring wells.
Deep Bedrock (D3) Interval	
11) Increase in TOC, VFAs, or potassium in D3 wells along the southern Site boundary	VFAs include lactic and acetic acids and other lactate fermentation products. TOC is a surrogate measure for these compounds. Potassium is directly associated with lactate. These are all indicators that electron donor has reached the D3 wells.
12) Changes in VOC concentrations or VOC ratios (e.g., DCE/TCE) in D3 wells along the southern Site boundary	Changes in VOC concentrations or ratios indicate biological activity upgradient of Site boundary due to the presence of additional electron donor.
13) Increase in chloride or Cl/Na ratio in D3 wells along the southern Site boundary	Increases in chloride or chloride/sodium indicate accelerated biodegradation of TCE and daughter products upgradient of Site boundary.
14) Decrease in chlorine number (N_{CL}) in D3 wells along the southern Site boundary	Decrease in N_{CL} (calculated using concentrations of TCE, 1,2-DCE and VC) over baseline conditions based on groundwater samples collected from the D3 wells along the southern Site boundary.

Notes:

[a] - Critieria conforms to demonstration metrics oulined in the USEPA Region 2 “Clean & Green” policy.

[b] - Criteria conforms to NYSDEC concepts and techniques for "Green Remediation".

1,2-DCE - cis-1,2-dichloroethene.

TABLE 3: REPRESENTATIVE GROUNDWATER DATA
Former Powerex, Inc. Facility, Auburn, NY

Analyte	Specific Parameters of Interest	Rationale/Use
Field Parameters	DO, ORP, pH, conductivity, temperature	Primarily to monitor significant shifts in redox conditions and pH
Field Test Kits	Nitrate, sulfide, ferrous iron, dissolved manganese	Assess nitrate, sulfate, iron and manganese reduction
Inorganic Chemistry	Anions (chloride, nitrate, sulfate, bromide, sulfide)	Assess extent of VOC degradation; assess nitrate and sulfate reduction; monitor bromide transport during tracer test and electron donor additions
	Dissolved Metals (ferrous iron, manganese, sodium, potassium)	Monitor the occurrence of iron and manganese reduction; monitor changes in ratio of chloride to sodium; monitor incraeses in potassium
Organic Chemistry	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	Assess the extent of VOC degradation
	DHGs (methane, ethane, ethene, acetylene[a])	Assess the extent of VOC degradation and whether anaerobic degradation processes are occurring to completion
	VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	Assess the extent of VOC degradation and whether anaerobic degradation processes are occurring
	Total Organic Carbon (TOC)	Quantify presence of organic matter in groundwater and assess extent of increase due to electron donor addition
	TCE, 1,2-DCE and VC Carbon Isotopes (^{13}C, ^{12}C)[b]	Changes in $^{13}C/^{12}C$ fraction of TCE, 1,2-DCE and VC will be used to assess biological transformation of these compounds
Microbiology	Total biomass[c], *Dehalococcoides* (DHC)[c], vcrA[c]	Assess the growth and distribution of biomass and DHC with the vcrA gene

Notes:

1,2-DCE - cis-1,2-dichloroethene.

[a] - Analyses for acetylene will only be performed during baseline sampling, and only for select wells.

[b] - Analyses for carbon isotopes will be contingent upon results of dechlorination data (e.g., VOCs, DHGs, etc.).

[c] - Analyses for total biomass, DHC and vcrA will be contingent upon results of dechlorination data (e.g., VOCs, DHGs, etc.).

Table 4
Drilling Information for Phase I Pilot Test Boreholes

Former Powerex, Inc. Facility
Auburn, New York

Well	Ground Elevation (ft amsl)	Bedrock Info		Overburden Casing Info		Shallow Bedrock Casing Info		Borehole Info	
		Depth (ft bgs)	Elevation (ft amsl)	Diameter (inches)	Depth (ft bgs)	Diameter (inches)	Depth (ft bgs)	Diameter (inches)	Total Depth (ft bgs)
Phase I Pilot Test Monitoring Wells									
PT-MW-1	637.4	15.5	621.9	6.0	17.7	4.0	46.8	4.0	65.8
PT-MW-2	637.9	15.7	622.2	6.0	18.8	4.0	41.4	4.0	59.8
PT-MW-3	638.9	15.7	623.2	6.0	17.0	4.0	42.2	4.0	56.5
PT-MW-4	638.0	13.2	624.8	6.0	16.0	4.0	40.0	4.0	54.8
PT-MW-5	637.2	15.0	622.2	6.0	16.6	4.0	39.0	4.0	54.4
PT-MW-6	637.3	14.0	623.3	6.0	16.0	4.0	39.0	4.0	54.1
PT-MW-7	638.8	19.0	619.8	6.0	21.5	4.0	43.6	4.0	58.7
Phase I Pilot Test Injection Wells									
PT-INJ-1	640.8	17.0	623.8	6.0	19.0	4.0	43.1	4.0	58.1
PT-INJ-2	637.9	15.5	622.4	6.0	17.5	4.0	40.0	4.0	54.2
PT-INJ-3	640.2	16.5	623.7	6.0	18.5	4.0	41.5	4.0	56.3
PT-INJ-4	638.6	16.0	622.6	6.0	18.0	4.0	40.5	4.0	55.8
PT-INJ-5	639.7	16.5	623.2	6.0	18.7	4.0	41.0	4.0	57.3
PT-INJ-6	640.4	17.5	622.9	6.0	19.5	4.0	41.5	4.0	57.1

Notes:

1. "ft amsl" designates feet above mean sea level.
2. "ft bgs" designates feet below ground surface.
3. Vertical datum is NGVD 1929.

Table 5
Construction Details for Phase 1 Pilot Test Monitoring and Injection Wells

Former Powerex, Inc. Facility
Auburn, New York

		Surveyed Elevations		Horizontal coordinates			Open Rock				Screen			
							Depth		Elevation		Depth		Elevation	
Well	Date Completed	Measuring Point (ft amsl)	Ground Surface (ft amsl)	Easting	Northing	Total Depth (ft bmp)	Top (ft bgs)	Bottom (ft bgs)	Top (ft amsl)	Bottom (ft amsl)	Top (ft bgs)	Bottom (ft bgs)	Top (ft amsl)	Bottom (ft amsl)
Phase I Pilot Test Monitoring Wells														
PT-MW-1[a]	09/11/12	639.79	637.4	816348.6	1063818.5	68.05	46.8	65.8	590.6	571.6	45.9	65.1	591.5	572.3
PT-MW-2[a]	09/11/12	637.68	637.9	816537.3	1063980.2	59.37	41.4	59.8	596.5	578.1	39.9	59.1	598.0	578.8
PT-MW-3[a]	09/20/12	641.56	638.9	816618.3	1064118.5	58.76	42.2	56.5	596.7	582.4	41.7	55.8	597.2	583.1
PT-MW-4[a]	09/19/12	640.66	638.0	816679.4	1064149.4	57.37	40.0	54.8	598.0	583.2	40.0	54.1	598.0	583.9
PT-MW-5[a]	09/17/12	639.83	637.2	816524.2	1064173.6	56.99	39.0	54.4	598.2	582.8	39.6	53.7	597.6	583.5
PT-MW-6[a]	09/20/12	639.78	637.3	816560.8	1064182.2	56.42	39.0	54.1	598.3	583.2	39.3	53.4	598.0	583.9
PT-MW-7[a]	09/17/12	641.41	638.8	816654.9	1064088.2	60.78	43.6	58.7	595.2	580.1	43.9	58.0	594.9	580.8
Phase I Pilot Test Injection Wells														
PT-INJ-1	09/26/12	643.11	640.8	816591.5	1064154.3	60.25	43.1	58.1	597.7	582.7	---	---	---	---
PT-INJ-2	09/25/12	639.81	637.9	816589.0	1064175.1	56.03	40.0	54.2	597.9	583.7	---	---	---	---
PT-INJ-3	10/01/12	642.76	640.2	816609.2	1064161.0	58.85	41.5	56.3	598.7	583.9	---	---	---	---
PT-INJ-4	09/25/12	641.22	638.6	816605.1	1064140.3	58.43	40.5	55.8	598.1	582.8	---	---	---	---
PT-INJ-5	10/01/12	642.12	639.7	816580.4	1064139.4	59.54	41.0	57.3	598.7	582.4	---	---	---	---
PT-INJ-6	10/02/12	642.80	640.4	816570.7	1064160.6	59.56	41.5	57.1	598.9	583.3	---	---	---	---

Notes:

1. "ft amsl" designates feet above mean sea level.
2. "ft bmp" designates feet below measuring point.
3. "ft bgs" designates feet below ground surface.
4. "a" designates PVC installed to stabilize borehole. 3-inch ID schedule 40 polyvinyl chloride well screens and riser pipes were placed in the open borehole, but without the installation of a sand pack, bentonite seal or annular grout seal.
5. "---" designates depth or elevation not applicable.
6. Vertical datum is NGVD 1929.
7. Horizontal coordinates (easting and northing) are measured in NAD83 State Plane coordinate system.
8. Survey information measured by Richard Rybinski Land Surveying of Manlius, New York.

Table 6
Pulsed Pumping Schedule for Phase 1 of Pilot Test

Former Powerex, Inc. Facility
Auburn, New York

Date	Well ID										Notes
	PW-1	PW-2	PW-3	PW-4	PW-5	PW-8	PW-9	PW-10	PW-12	PW-13	
Monday, October 22, 2012	**X**	**X**	O	**X**	**X**	O	O	O	**X**	**X**	PW-1, -2, -4, -5, -12 and -13 still off from drilling program
Tuesday, October 23, 2012	**X**	**X**	O	**X**	**X**	O	O	O	**X**	**X**	
Wednesday, October 24, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	PW-2 and PW-5 on
Thursday, October 25, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Friday, October 26, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Saturday, October 27, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Sunday, October 28, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Monday, October 29, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Tuesday, October 30, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Wednesday, October 31, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Thursday, November 01, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Friday, November 02, 2012	**X**	O	O	**X**	O	**X**	**X**	**X**	**X**	**X**	PW-8, PW-9 and PW-10 off
Saturday, November 03, 2012	**X**	O	O	**X**	O	**X**	**X**	**X**	**X**	**X**	
Sunday, November 04, 2012	**X**	O	O	**X**	O	**X**	**X**	**X**	**X**	**X**	
Monday, November 05, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	PW-1 and PW-4 on
Tuesday, November 06, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Wednesday, November 07, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Thursday, November 08, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Friday, November 09, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	Last day of constant head testing
Saturday, November 10, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Sunday, November 11, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Monday, November 12, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Tuesday, November 13, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Wednesday, November 14, 2012	O	**X**	**X**	O	**X**	**X**	**X**	**X**	**X**	**X**	PW-2, PW-3 and PW-5 off
Thursday, November 15, 2012	O	**X**	**X**	O	**X**	**X**	**X**	**X**	**X**	**X**	
Friday, November 16, 2012	O	**X**	**X**	O	**X**	**X**	**X**	**X**	**X**	**X**	
Saturday, November 17, 2012	O	**X**	**X**	O	**X**	**X**	**X**	**X**	**X**	**X**	
Sunday, November 18, 2012	O	**X**	**X**	O	**X**	**X**	**X**	**X**	**X**	**X**	
Monday, November 19, 2012	O	**X**	O	O	**X**	**X**	**X**	**X**	**X**	**X**	PW-3 on
Tuesday, November 20, 2012	O	**X**	O	O	**X**	**X**	**X**	**X**	**X**	**X**	
Wednesday, November 21, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	PW-2 and PW-5 on
Thursday, November 22, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Friday, November 23, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Saturday, November 24, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Sunday, November 25, 2012	O	O	O	O	O	**X**	**X**	**X**	**X**	**X**	
Monday, November 26, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	PW-12 on
Tuesday, November 27, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	
Wednesday, November 28, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	
Thursday, November 29, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	
Friday, November 30, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	

Table 6
Pulsed Pumping Schedule for Phase 1 of Pilot Test

Former Powerex, Inc. Facility
Auburn, New York

Date	Well ID										Notes
	PW-1	PW-2	PW-3	PW-4	PW-5	PW-8	PW-9	PW-10	PW-12	PW-13	
Saturday, December 01, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	
Sunday, December 02, 2012	O	O	O	O	O	**X**	**X**	**X**	O	**X**	
Monday, December 03, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	PW-13 on
Tuesday, December 04, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	
Wednesday, December 05, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	
Thursday, December 06, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	
Friday, December 07, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	
Saturday, December 08, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	
Sunday, December 09, 2012	O	O	O	O	O	**X**	**X**	**X**	O	O	
Monday, December 10, 2012	O	O	O	O	O	O	O	O	O	O	PW-8, PW-9 and PW-10 on
Tuesday, December 11, 2012	O	O	O	O	O	O	O	O	O	O	
Wednesday, December 12, 2012	O	O	O	O	O	O	O	O	O	O	
Thursday, December 13, 2012	O	O	O	O	O	O	O	O	O	O	
Friday, December 14, 2012	O	O	O	O	O	O	O	O	O	O	
Saturday, December 15, 2012	O	O	O	O	O	O	O	O	O	O	
Sunday, December 16, 2012	O	O	O	O	O	O	O	O	O	O	
Monday, December 17, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	PW-1, PW-4, PW-12 and PW-13 off
Tuesday, December 18, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Wednesday, December 19, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Thursday, December 20, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Friday, December 21, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Saturday, December 22, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Sunday, December 23, 2012	**X**	O	O	**X**	O	O	O	O	**X**	**X**	
Monday, December 24, 2012	O	O	O	O	O	O	O	O	O	O	PW-1, PW-4, PW-12 and PW-13 on
Tuesday, December 25, 2012	O	O	O	O	O	O	O	O	O	O	
Wednesday, December 26, 2012	O	O	O	O	O	O	O	O	O	O	
Thursday, December 27, 2012	O	O	O	O	O	O	O	O	O	O	
Friday, December 28, 2012	O	O	O	O	O	O	O	O	O	O	
Saturday, December 29, 2012	O	O	O	O	O	O	O	O	O	O	
Sunday, December 30, 2012	O	O	O	O	O	O	O	O	O	O	
Monday, December 31, 2012	O	O	O	O	O	O	O	O	O	O	

Notes:

1. "X" designates the well is off; "O" designates well is on.
2. Pumping wells PW-6, PW-7 and PW-11 not shown, but remained on for duration of test.
3. All pumping wells remained on after December 31, 2012 through performance of the Phase 1 tracer test on January 29 and 30, 2013 and completion of the associated post-tracer test monitoring on February 8, 2013, at which point pulsed pumping resumed in accordance with the schedule previously approved by NYSDEC.

Table 7
Hydraulic Conductivity Test Data

Former Powerex, Inc. Facility
Auburn, New York

Well ID	Slug Test Type	Number of Tests	Number Analyzed	Analysis Method	Average K value (cm/sec)	Average K value (ft/day)	Open Hole Length (feet)	Transmissivity (ft^2/day)
PT-MW-1	Conventional	6	3	Confined - Hvorslev	2.03E-02	57.53	14.9	857.16
PT-MW-2	Conventional	2	1	Confined - Hvorslev	1.54E-05	0.04	8.6	0.38
PT-MW-3	Conventional	3	3	Confined - Hvorslev	6.31E-04	1.78	14.4	25.70
PT-MW-4	Conventional	3	3	Confined - Hvorslev	4.56E-05	0.13	14.8	1.91
PT-MW-5	Conventional	5	3	Confined - Hvorslev	6.81E-04	1.93	15.4	29.70
PT-MW-6	Conventional	6	6	Confined - Hvorslev	4.77E-03	13.51	15.1	204.01
PT-MW-7	Conventional	4	3	Confined - Hvorslev	3.32E-04	0.94	15.1	14.18
PT-INJ-1	Conventional	5	5	Confined - Hvorslev	3.49E-03	9.87	15.0	148.04
PT-INJ-2	Conventional	5	5	Confined - Hvorslev	2.54E-03	7.20	14.2	102.27
PT-INJ-3	Conventional	6	5	Confined - Hvorslev	3.72E-03	10.51	14.8	155.61
PT-INJ-4	Conventional	2	2	Confined - Hvorslev	2.42E-04	0.68	15.3	10.47
PT-INJ-5	Conventional	3	3	Confined - Hvorslev	1.52E-03	4.31	16.3	70.27
PT-INJ-6	Conventional	6	6	Confined - Hvorslev	2.50E-03	7.09	15.6	110.54

Notes:

1. "cm/sec" designates centimeters per second.
2. "ft/day" designates feet per day.
3. "ft^2/day" designates square feet per day.

Table 8
Constant Head Test Data

Former Powerex, Inc. Facility
Auburn, New York

	5-Foot Head Test			10-Foot Head Test			25-Foot Head Test			
Well ID	**Injection Rate (gpm)**	**Change in Groundwater Level (ft)**	**Calculated Specific Capacity (gpm/ft)**	**Injection Rate (gpm)**	**Change in Groundwater Level (ft)**	**Calculated Specific Capacity (gpm/ft)**	**Injection Rate (gpm)**	**Change in Groundwater Level (ft)**	**Calculated Specific Capacity (gpm/ft)**	**Total Volume of Water Injected (gal)**
PT-INJ-1	0.3	5.1	0.06	---	---	---	3.5	24.3	0.14	2138
PT-INJ-2	1.2	5.7	0.21	1.4	9.6	0.15	---	---	---	655
PT-INJ-3	1.05	5.4	0.19	1.95	10.2	0.19	---	---	---	460
PT-INJ-4	0.5	5.7	0.09	0.9	10.3	0.09	---	---	---	367
PT-INJ-5	1.05	5.3	0.20	1.55	10.3	0.15	---	---	---	639
PT-INJ-6	0.9	4.9	0.18	1.3	9.8	0.13	---	---	---	606

Notes:

1. "gpm" designates gallons per minute.
2. "ft" designates feet.
3. "gal" designates gallons.
4. "gpm/ft" designates gallons per minute per foot of head increase.
5. "---" designates test not performed.

Table 9
Water Level Measurements
Former Powerex, Inc. Facility
Auburn, New York

Well	Geologic Unit	Measuring Point Elevations			MP	15-Oct-12	12-Nov-12	12-Dec-12	16-Jan-13	05-Feb-13
		Steel	PVC	Ground						
DGC-8B	S	639.29	639.11	636.8	2	NM	620.32	619.38	623.71	619.62
DGC-9BR	S	636.32	---	636.7	1	NM	626.24	628.35	630.47	628.91
DGC-12B	S	639.29	639.01	637.8	2	NM	626.94	630.30	631.51	629.79
IW-1	S	638.99	---	638.4	1	NM	NM	627.79	630.37	NM
OW-1	S	639.14	---	637.4	1	NM	620.57	623.37	628.28	624.89
OW-4	S	638.78	---	637.5	1	NM	625.18	627.13	629.59	628.51
OW-5	S	639.32	---	637.8	1	NM	626.06	627.35	629.65	628.77
B-26I$_1$	I$_1$	629.51	629.29	627.8	2	612.46	618.40	NM	NM	623.58
B-28I$_1$	I$_1$	628.18	627.88	626.9	2	610.69	613.79	NM	NM	619.45
B-29I$_1$	I$_1$	640.63	640.39	638.5	2	612.17	613.98	NM	NM	622.70
B-30I$_1$	I$_1$	631.33	631.18	629.8	2	612.02	613.22	NM	NM	618.63
B-31I$_1$	I$_1$	644.00	643.85	641.8	2	603.46	604.98	NM	NM	615.94
B-32I$_1$	I$_1$	640.04	639.62	637.0	2	604.34	605.29	NM	NM	614.46
B-33I$_1$	I$_1$	644.24	644.06	642.1	2	578.40	578.62	NM	NM	589.67
B-34I$_1$	I$_1$	643.99	643.74	642.0	2	585.46	585.23	NM	NM	599.92
B-41I$_1$	I$_1$	633.32	633.07	631.2	2	604.75	609.04	NM	NM	614.21
B-42I$_1$	I$_1$	643.28	642.96	640.5	2	605.21	606.44	NM	NM	613.38
PT-MW-1	I$_1$	639.79	638.93	637.39	1	586.01	586.08	589.97	607.11	605.03
PT-MW-2	I$_1$	637.68	637.12	637.91	1	586.47	584.55	587.87	603.17	599.64
PT-MW-3	I$_1$	641.56	640.68	638.87	1	598.59	602.71	602.08	608.73	608.62
PT-MW-4	I$_1$	640.66	638.34	638.01	1	599.17	602.68	602.14	608.66	608.59
PT-MW-5	I$_1$	639.83	638.36	637.24	1	599.41	603.18	602.57	609.06	609.02
PT-MW-6	I$_1$	639.78	638.86	637.33	1	599.37	603.09	602.49	609.01	608.99
PT-MW-7	I$_1$	641.41	640.61	638.80	1	597.95	601.01	600.43	607.51	607.12
PT-INJ-1	I$_1$	643.11	---	640.83	1	599.40	603.11	602.47	608.99	608.96
PT-INJ-2	I$_1$	639.81	---	637.92	1	599.37	603.08	602.47	608.98	608.96
PT-INJ-3	I$_1$	642.76	---	640.19	1	599.39	603.11	602.46	608.96	608.97
PT-INJ-4	I$_1$	641.22	---	638.62	1	600.58	604.83	603.80	608.79	609.11
PT-INJ-5	I$_1$	642.12	---	639.73	1	599.39	603.10	602.46	608.96	608.94
PT-INJ-6	I$_1$	642.80	---	640.36	1	599.38	603.10	602.47	608.97	608.98

Notes:

1. "S" designates shallow bedrock unit and "I$_1$" designates upper intermediate bedrock unit.
2. "MP" designates measuring point identifier.

Measuring Point Identifiers	
Steel:	1
PVC:	2
Ground:	3

3. Elevations are in feet above mean sea level (ft amsl) and are referenced to benchmark T35, established by the United States Geological Survey in 1932. The published elevation of this benchmark is 631.37 ft amsl (NGVD 1929).
4. Depths are in feet below measuring point (ft bmp).
5. "---" designates not applicable.
6. "NM" designated not measured.

TABLE 10: SUMMARY OF TRACER TEST LABORATORY-MEASURED BROMIDE DATA
Former Powerex, Inc. Facility, Auburn, NY

Date	Tracer Test Period	Elapsed Time[1] (hr)	Tracer Solution Tank	PT-INJ-1	PT-INJ-2	PT-INJ-3	PT-INJ-4	PT-INJ-5	PT-INJ-6	PT-MW-3	PT-MW-4	PT-MW-5	PT-MW-6	PT-MW-7
			Bromide Concentration[2] (mg/L)											
1/22/2013	Background	N/A								0.040 B	0.028 B	0.12 B	0.065 B	0.048 B
1/23/2013		N/A		0.056 B	0.068 B	0.071 B	0.063 B	0.12 B	0.11 B					
1/29/2013	Tracer Solution Injection	0	424											
1/29/2013		1			24.1	63.6	0.13	215	21.3					
1/29/2013		3			--	--	--	406	--					
1/29/2013		4			386	--	--	--	--					
1/29/2013		7			421	411	--	--	326					
1/29/2013		8			--	--	134	418	384					
1/29/2013		10			**425**	**422**	153	--	--					
1/29/2013		11			--	--	--	415	--					
1/30/2013		14			--	--	188	--	--					
1/30/2013		16	**428**		--	--	--	**421**	--					
1/30/2013		17			--	--	249	--	--					
1/30/2013	Chase Water Injection	18			425	390	**263**	419	368					
1/30/2013		19			354	226	161	286	**390**					
1/30/2013		23			--	--	--	--	150					
1/30/2013		25			65.3	63.4	--	--	--					
1/30/2013		28			--	--	--	--	--	**134**	**0.093 B**	**7.6**	**180**	**2.3**
1/30/2013		33			37.2	38.8	--	--	--					
1/30/2013		34			--	--	54.5	27.7	80.6					

Notes:

[1] - elapsed time from start of tracer solution injection; tracer solution injection occurred from 0 to 17.5 hours; chase water injection occurred from 17.5 to 33 hours

[2] - bromide concentration in samples submitted for laboratory analysis

N/A - not applicable

mg/L - milligrams per liter

B - result was greater than laboratory method detection limit (MDL) but less than laboratory reporting limit (RL)

-- - sample not analyzed by laboratory

Cells shaded grey indicate sample was not collected

Concentrations in bold indicate peak bromide concentrations for each well as measured in samples submitted for laboratory analysis

TABLE 11: SUMMARY OF ESTIMATED EFFECTIVE POROSITY BASED ON TRACER TEST BROMIDE BREAKTHROUGH DATA

Former Powerex, Inc. Facility, Auburn, NY

Observation Well	Distance from PT-INJ-1 (*r*) (ft)	I1 Unit Thickness (*h*) (ft)	Injection Rate (Q) (gpm)	Time to Tracer Breakthrough (t) (min)	Estimated Porosity
PT-INJ-2	20	15	1	120	0.00085
PT-INJ-3	20	15	1	90	0.00064
PT-INJ-4	20	15	1	540	0.0038
PT-INJ-5	20	15	1	90	0.00064
PT-INJ-6	20	15	1	420	0.0030
				Mean	0.0018

Notes:

ft - feet

gpm - gallons per minute

min - minutes

[1] - time to tracer breakthrough assumed to be time when bromide concentration at observation well measured one half of the maximum bromide concentration based on field measurements

Estimated porosities calculated using the equation:

$$\eta = \frac{Q \times t}{(\pi \times r^2 \times h)}$$

Table 12

Tracer Test Analytical Results

Former Powerex, Inc. Facility
Auburn, New York

	7/25/2012	8/1/2012	8/22/2012	9/5/2012	1/21/2013	1/30/2013	2/1/2013	2/4/2013	2/8/2013
Bromide (mg/L)									
Main Separator	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.5**	1.0 U	---	1.0 U
PW-1	---	---	---	---	---	---	1.0 U	1.0 U	1.0 U
PW-4	---	---	---	---	---	---	**2.5**	1.0 U	1.0 U
PW-12	---	---	---	---	---	---	**1.3**	**0.9 J**	1.0 U
PW-13	---	---	---	---	---	---	1.0 U	1.0 U	1.0 U
PT-MW-3	---	---	---	---	---	---	**132**	---	---
PT-MW-4	---	---	---	---	---	---	**2.9**	---	---
PT-MW-5	---	---	---	---	---	---	**2**	---	---
PT-MW-6	---	---	---	---	---	---	**97.4**	---	---
PT-MW-7	---	---	---	---	---	---	**11.2**	---	---
Potassium (ug/L)									
Main Separator	2000 U	**2100**	**2100**	**2100**	**2200**	2000 U	2000 U	---	2000 U
PW-1	---	---	---	---	---	---	**1280 J**	**1370 J**	**1510 J**
PW-4	---	---	---	---	---	---	**1550 J**	**2020**	**1760 J**
PW-12	---	---	---	---	---	---	**1070 J**	**1150 J**	**3190 J**
PW-13	---	---	---	---	---	---	**1730 J**	**1720 J**	**1860 J**
PT-MW-3	---	---	---	---	---	---	**7890**	---	---
PT-MW-4	---	---	---	---	---	---	**11300**	---	---
PT-MW-5	---	---	---	---	---	---	**1780 J**	---	---
PT-MW-6	---	---	---	---	---	---	**14900**	---	---
PT-MW-7	---	---	---	---	---	---	**2950**	---	---
Chloride (mg/L)									
PT-MW-3	---	---	---	---	---	---	**89.2**	---	---
PT-MW-4	---	---	---	---	---	---	**185**	---	---
PT-MW-5	---	---	---	---	---	---	**52.2**	---	---
PT-MW-6	---	---	---	---	---	---	**73.2**	---	---
PT-MW-7	---	---	---	---	---	---	**173**	---	---
Sodium (ug/L)									
PT-MW-3	---	---	---	---	---	---	**14600**	---	---
PT-MW-4	---	---	---	---	---	---	**10600**	---	---
PT-MW-5	---	---	---	---	---	---	**4920**	---	---
PT-MW-6	---	---	---	---	---	---	**11900**	---	---
PT-MW-7	---	---	---	---	---	---	**8690**	---	---

Notes:
1. "U" indicates parameter not detected; the value shown is the reporting limit.
2. "---" indicates the compound was not analysed.
3. "J" indicates analyte detected at an estimated concentration below the reporting limit but above the detection limit.
4. Detections are bolded.
5. Tracer solution injected on January 29, 2013; chase water injected on January 30, 2013

TABLE 13: ANTICIPATED GROUNDWATER SAMPLING SCHEDULE FOR PHASES 2 AND 3[a]
Former Powerex, Inc. Facility, Auburn, NY

Event(s)	Well(s)	Parameter[b]	Number of Samples per Event	Number of QA/QC Samples per Event[c]	Frequency per Event	Number of Events	Total Number of Samples
Intermediate Bedrock (I1) Interval							
Baseline	PT-INJ-1 to PT-INJ-6; PT-MW-1 to PT-MW-13	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	19	3	Once	1	22
		DHGs (methane, ethane, ethene, acetylene[d])	19	1	Once	1	20
		VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	19	1	Once	1	20
		Anions (chloride, nitrate, sulfate, bromide)	19	1	Once	1	20
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	19	1	Once	1	20
		TOC	19	1	Once	1	20
		TCE, 1,2-DCE and VC Carbon Isotopes (^{13}C, ^{12}C)[e]	Up to 19	1	Once	1	Up to 20
		Total biomass[f], DHC[f], vcrA[f]	Up to 19	1	Once	1	Up to 20
Phase 2 Donor Injections	PT-INJ-1 to PT-INJ-6; PT-MW-3 to PT-MW-13	Anions (bromide)	Up to 17	1	At least twice	1	Up to 36[g]
		TOC	Up to 17	1	At least twice	1	Up to 36[g]
		VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	Up to 17	1	At least twice	1	Up to 36[g]
Year 1, Q1 & Q3 Year 2, Q1 & Q3* Year 3, Q1* & Q3*	PT-MW-3 to PT-MW-13	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	11	3	Once	6	84
		DHGs (methane, ethane, ethene)	11	1	Once	6	72
		Anions (chloride, nitrate, sulfate, bromide)	11	1	Once	6	72
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	11	1	Once	6	72
		TOC	11	1	Once	6	72
Year 1, Q2 & Q4 Year 2, Q2 & Q4* Year 3, Q2* & Q4*	PT-MW-3 to PT-MW-13	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	11	3	Once	6	84
		DHGs (methane, ethane, ethene)	11	1	Once	6	72
		VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	11	1	Once	6	72
		Anions (chloride, nitrate, sulfate, bromide)	11	1	Once	6	72
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	11	1	Once	6	72
		TOC	11	1	Once	6	72
		TCE, 1,2-DCE and VC Carbon Isotopes (^{13}C, ^{12}C)[e]	Up to 11	Up to 1	Once	6	Up to 72
		Total biomass[f], DHC[f], vcrA[f]	Up to 11	Up to 1	Once	6	Up to 72
	PT-MW-2	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	1	-	Once	6	6
		DHGs (methane, ethane, ethene)	1	-	Once	6	6
		Anions (chloride, nitrate, sulfate, bromide)	1	-	Once	6	6
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	1	-	Once	6	6
		TOC	1	-	Once	6	6
Deep Bedrock (D3) Interval							
Baseline	B-31D3, B-32D3, B-33D3, B-53D3	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	4	1	Once	1	5
		DHGs (methane, ethane, ethene)	4	1	Once	1	5
		VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	4	1	Once	1	5
		Anions (chloride, nitrate, sulfate, bromide)	4	1	Once	1	5
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	4	1	Once	1	5
		TOC	4	1	Once	1	5
Year 1, Bi-Monthly[h]	B-31D3, B-32D3, B-33D3, B-53D3	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	4	1	Once	6	30
		DHGs (methane, ethane, ethene)	4	1	Once	6	30
		VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	4	1	Once	6	30
		Anions (chloride, nitrate, sulfate, bromide)	4	1	Once	6	30
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	4	1	Once	6	30
		TOC	4	1	Once	6	30
Year 2, Q1, Q2, Q3*, Q4* Year 3, Q1*, Q2*, Q3*, Q4*	B-31D3, B-32D3, B-33D3, B-53D3	VOCs (PCE, TCE, 1,2-DCE, trans-1,2-DCE, VC)	4	-	Once	8	32
		DHGs (methane, ethane, ethene)	4	-	Once	8	32
		VFAs (acetic, butyric, lactic, propionic, pyruvic acids)	4	-	Once	8	32
		Anions (chloride, nitrate, sulfate, bromide)	4	-	Once	8	32
		Dissolved Metals (ferrous iron, manganese, sodium, potassium)	4	-	Once	8	32
		TOC	4	-	Once	8	32
							Up to 1,662

Notes:

1,2-DCE - cis-1,2-dichloroethene.

[a] - This monitoring schedule may be modified during the pilot test based on performance data (as it becomes available).

[b] - Field Parameters and Field Test Kits not shown; these will be performed during all sampling events.

[c] - For VOCs, QA/QC samples include 1 duplicate, 1 matrix spike/matrix spike duplicate, and 1 trip blank for every 20 samples. For all other parameters, QA/QC samples include 1 duplicate for every 20 samples.

[d] - Samples for analyses of acetylene will only be collected from select wells.

[e] - Samples for analyses of carbon isotopes will only be collected from select wells. Analyses for carbon isotopes will be contingent upon results of dechlorination data (e.g., VOCs, DHGs, etc.).

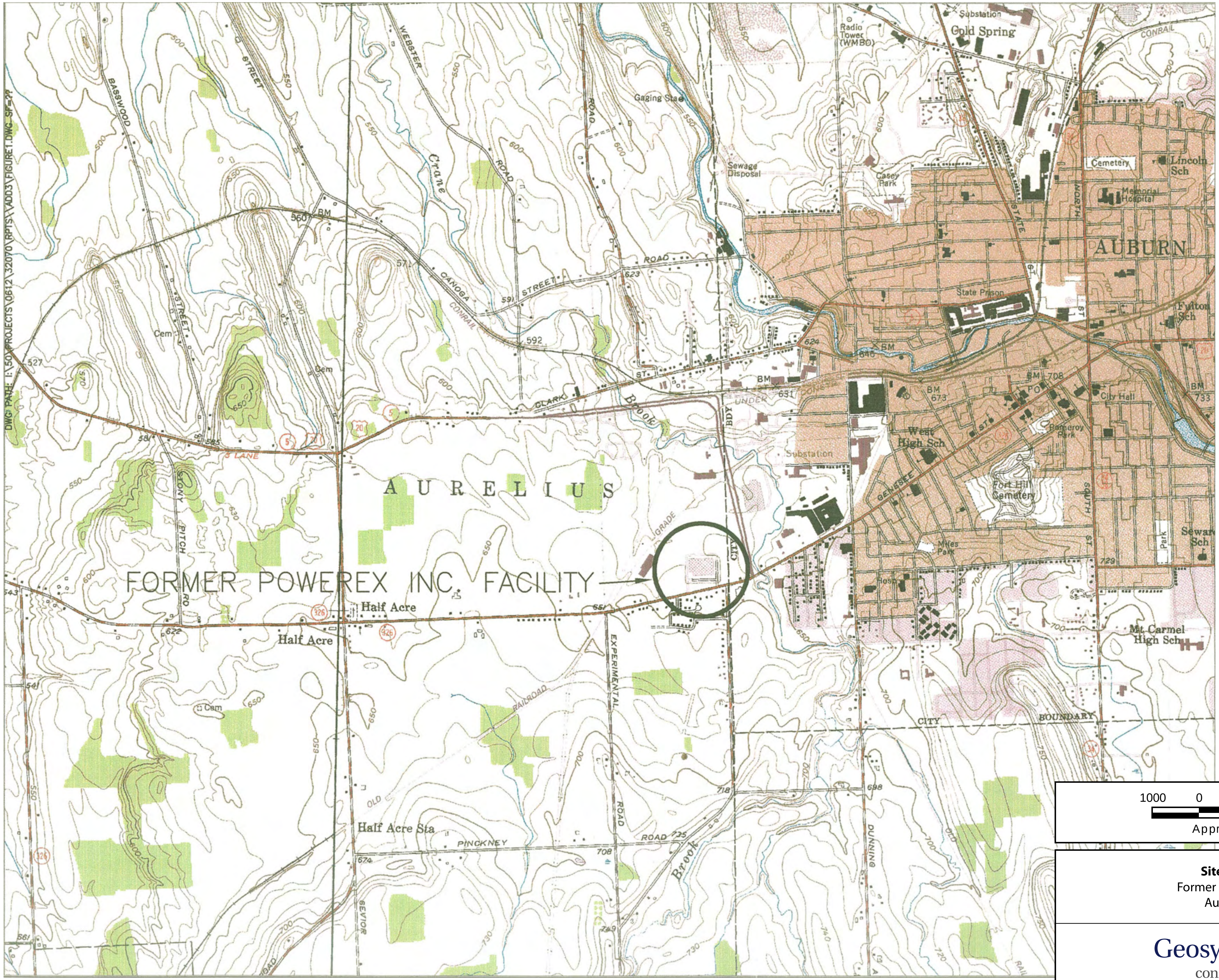
[f] - Samples for analyses of total biomass, DHC and vcrA will only be collected from select wells. Analyses for total biomass, DHC and vcrA will be contingent upon results of dechlorination data (e.g., VOCs, DHGs, etc.).

[g] - Number of samples assumes two sampling events.

[h] - Bi-monthly sampling = sample collection once every 2 months.

* - Pilot test continuation contingent upon results from first 18 months of performance monitoring.

FIGURES



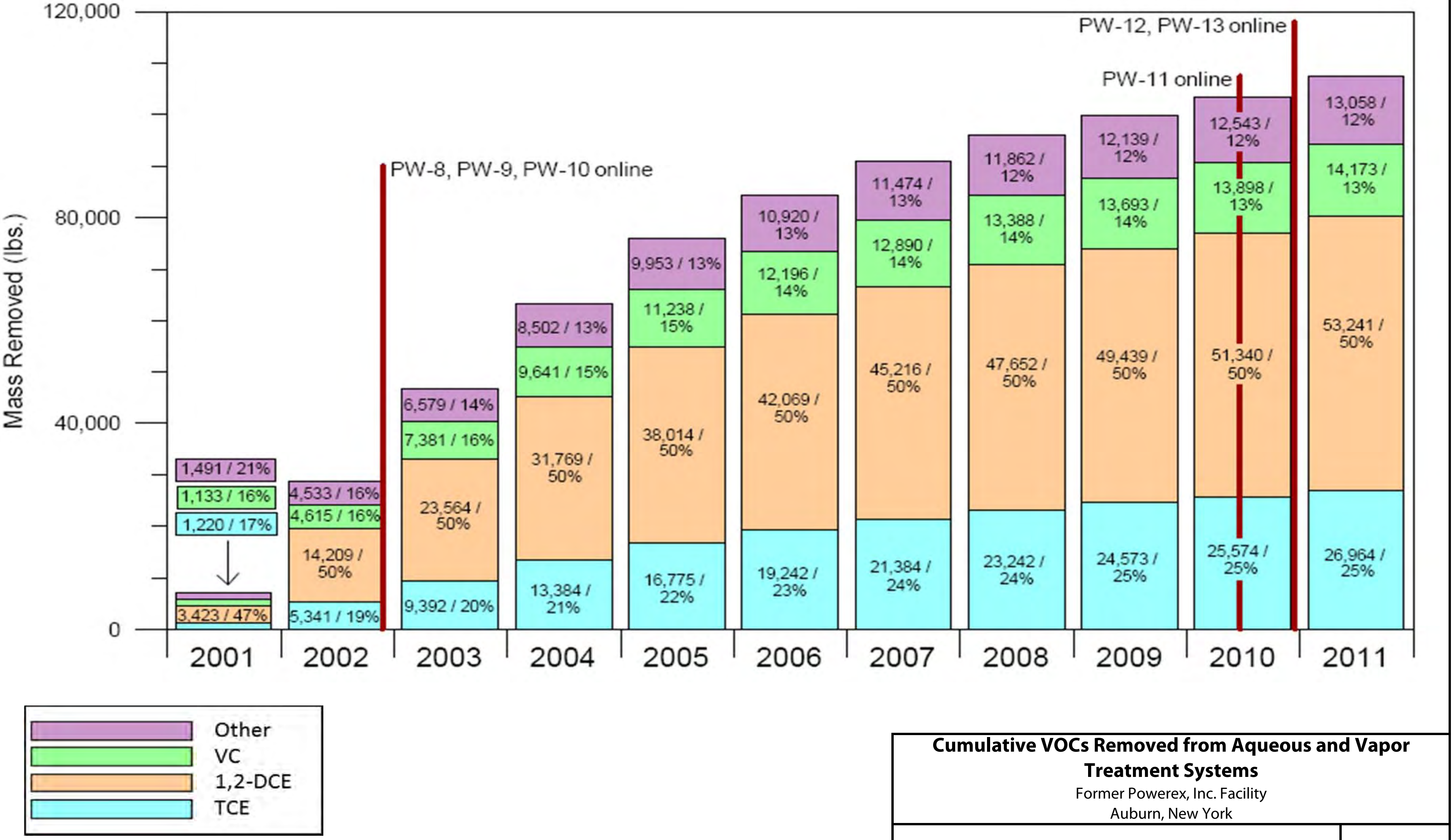
Site Location Map
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure
1

Guelph
June 2012

Site Location Map.ai



Notes

For non-detects, one half of the reporting limit is used.

Other VOCs include methanol, acetone, and 1,1-DCE.

1,491 / 21% designates 1,491 pounds removed, which is 21% of the total.

Figure provided by O'Brien & Gere (2012).

P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\I1 Pilot Work Plan\Figures\[Figure 2 - Cumulative VOCs Removed.xlsx]8_5 x 11 landscape_no client

Cumulative VOCs Removed from Aqueous and Vapor Treatment Systems

Former Powerex, Inc. Facility
Auburn, New York

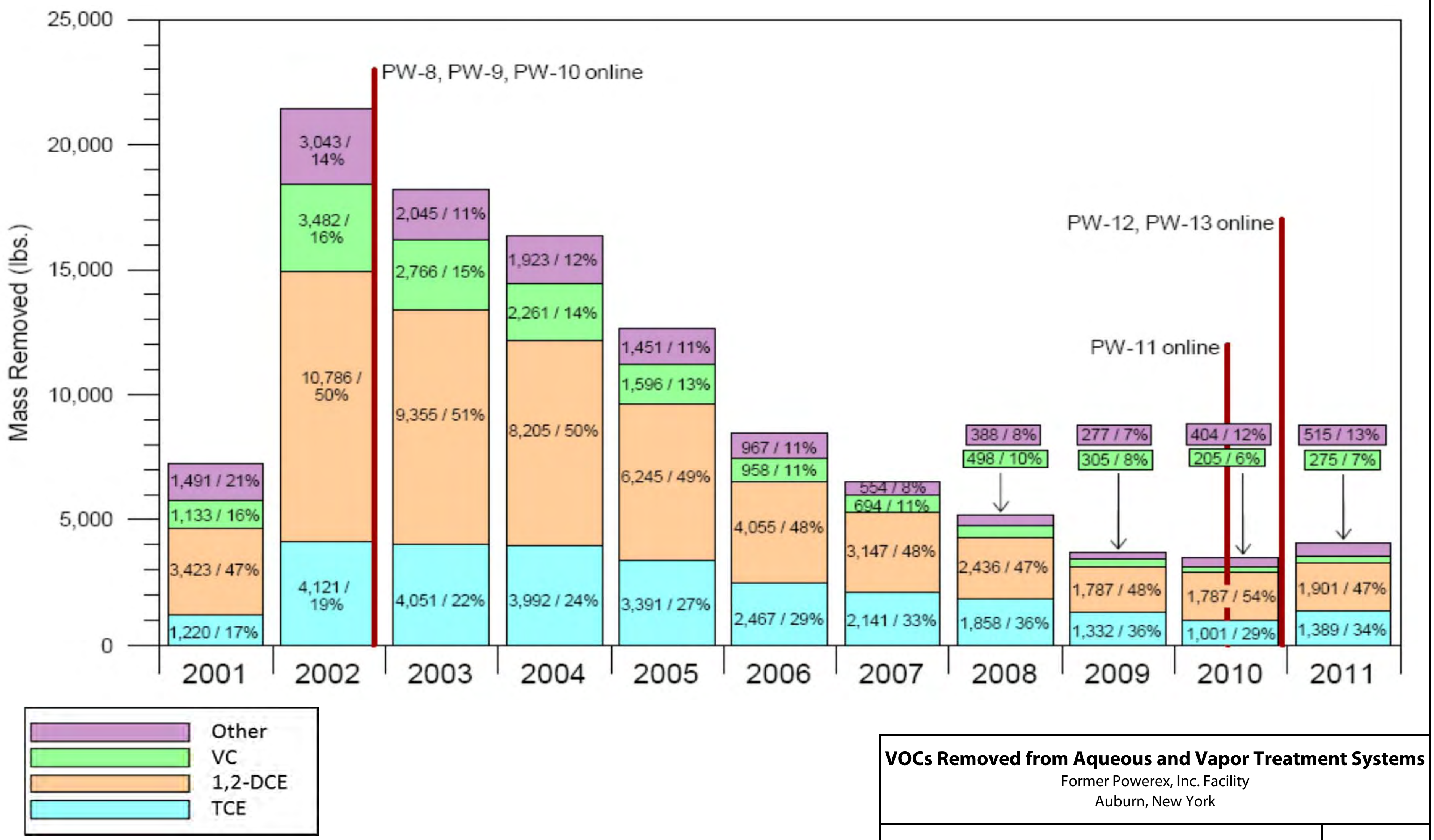
Geosyntec
consultants

Guelph

June 2012

Figure

2



Notes

For non-detects, one half of the reporting limit is used.
Other VOCs include methanol, acetone, and 1,1-DCE.
1,491 / 21% designates 1,491 pounds removed, which is 21% of the total.
Figure provided by O'Brien & Gere (2012).

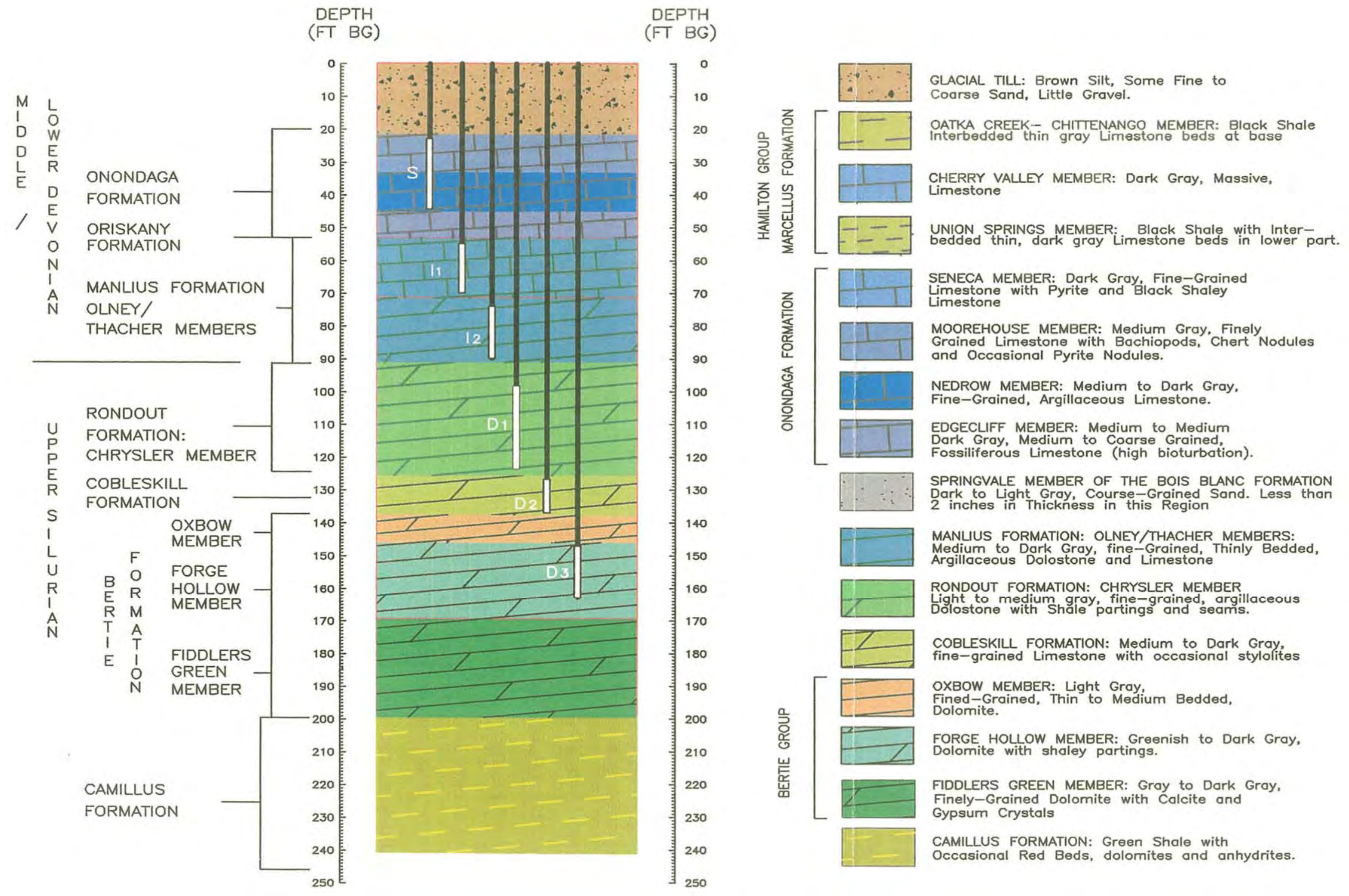
VOCs Removed from Aqueous and Vapor Treatment Systems

Former Powerex, Inc. Facility
Auburn, New York

Geosyntec
consultants

Guelph	June 2012	Figure 3

P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\I1 Pilot Work Plan\Figures\[Figure 3 - VOCs Removed.xlsx]8_5 x 11 landscape_no client



Notes

Figure taken from the RI/FS Work Plan Addendum No. 3 (OBG, 2003).

Generalized Geologic Section

Former Powerex, Inc. Facility
Auburn, New York

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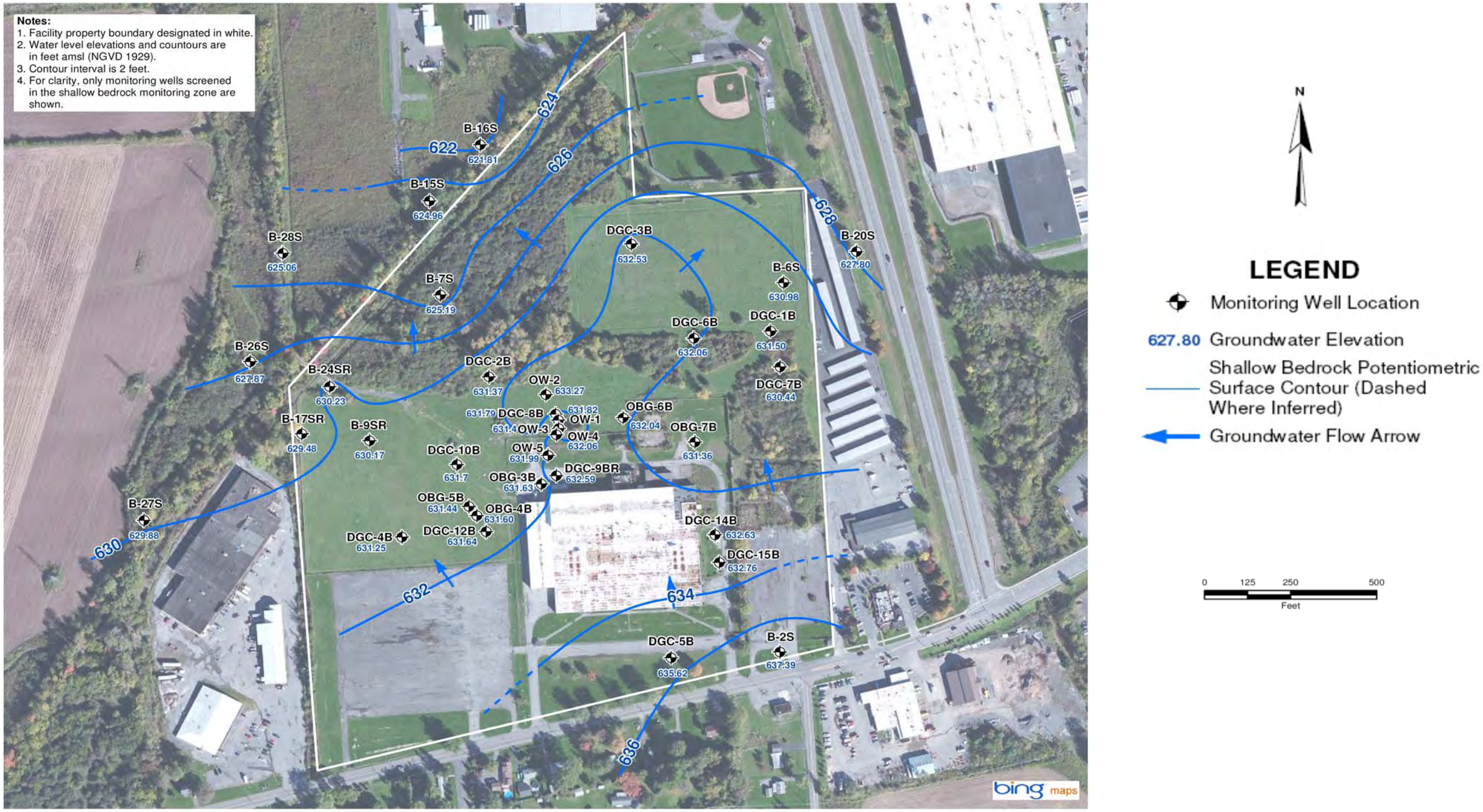
June 2012

Figure

4


Notes:
1. Facility property boundary designated in white.
2. Water level elevations and countours are in feet amsl (NGVD 1929).
3. Contour interval is 2 feet.
4. For clarity, only monitoring wells screened in the shallow bedrock monitoring zone are shown.

This document was developed in color. Reproduction in B/W may not represent the data as intended.

Air photo background obtained in 2011.

Potentiometric Surface Map for Shallow Bedrock Interval During Pre-Pumping Conditions

Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure

5a

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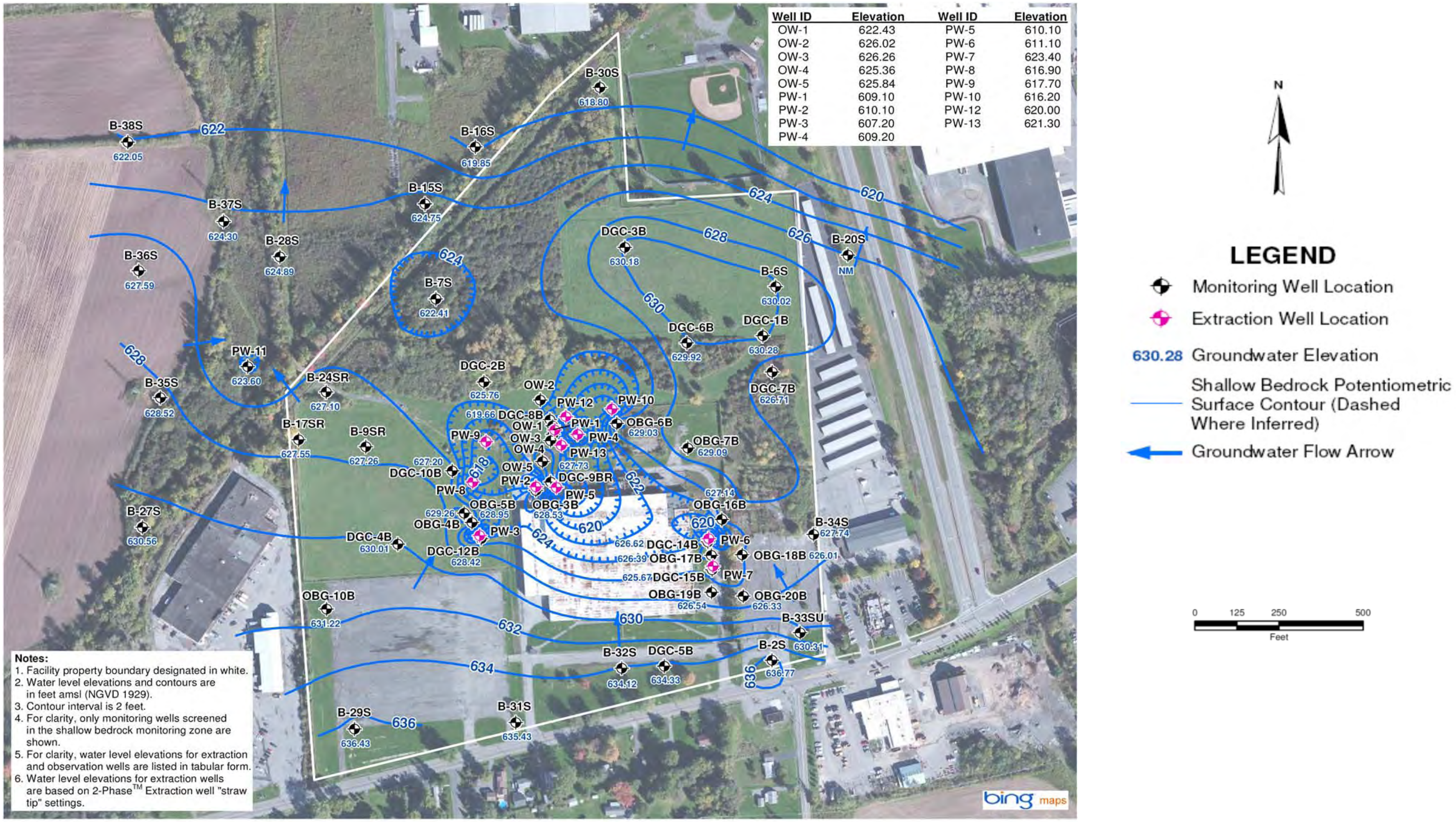
June 2012

Notes

Water elevations measured on May 2, 2001.
Figure provided by O'Brien & Gere (2012).

P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\I1 Pilot Work Plan\Figures\[Figure 5a - Potentiometric Map Pre-Pumping.xlsx]8_5 x 11 landscape_no client



Well ID	Elevation	Well ID	Elevation
OW-1	622.43	PW-5	610.10
OW-2	626.02	PW-6	611.10
OW-3	626.26	PW-7	623.40
OW-4	625.36	PW-8	616.90
OW-5	625.84	PW-9	617.70
PW-1	609.10	PW-10	616.20
PW-2	610.10	PW-12	620.00
PW-3	607.20	PW-13	621.30
PW-4	609.20		

Notes:

1. Facility property boundary designated in white.
2. Water level elevations and contours are in feet amsl (NGVD 1929).
3. Contour interval is 2 feet.
4. For clarity, only monitoring wells screened in the shallow bedrock monitoring zone are shown.
5. For clarity, water level elevations for extraction and observation wells are listed in tabular form.
6. Water level elevations for extraction wells are based on 2-Phase^{TM} Extraction well "straw tip" settings.

This document was developed in color. Reproduction in B/W may not represent the data as intended.

Air photo background obtained in 2011.

P:\PRJ\Projects\TR0344 - GE Auburn\1 Pilot\Reports\1 Pilot Work Plan\Figures\[Figure 5b - Potentiometric Map Pumping.xlsx]8_5 x 11 landscape_no client

Notes

Water elevations measured on November 7, 2011.

Figure provided by O'Brien & Gere (2012).

Potentiometric Surface Map for Shallow Bedrock Interval During Pumping Conditions

Former Powerex, Inc. Facility
Auburn, New York

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Figure

5b

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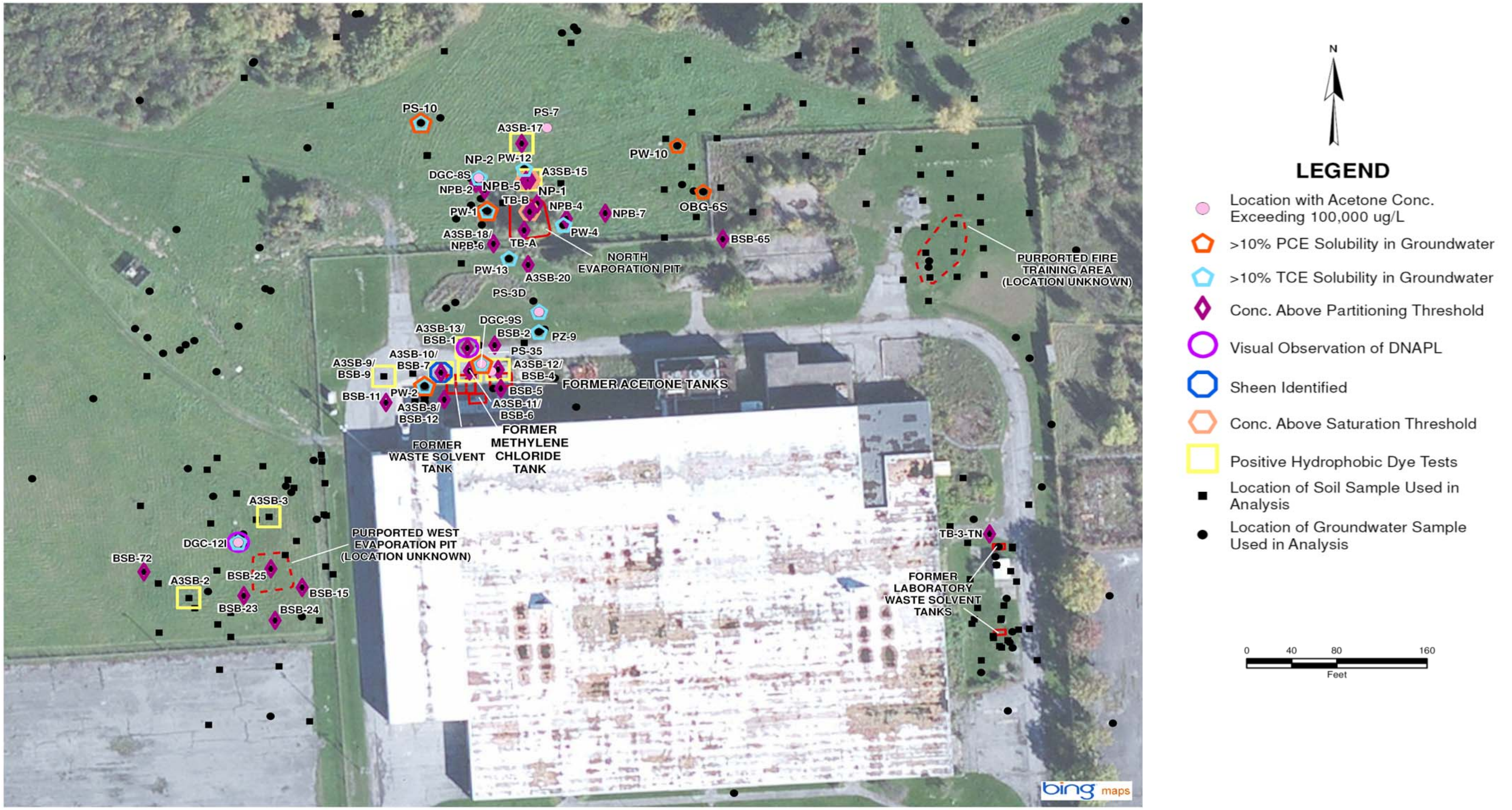
June 2012



This document was developed in color. Reproduction in B/W may not represent the data as intended.

Air photo background obtained in 2011.

DNAPL Presence Lines of Evidence

Former Powerex, Inc. Facility
Auburn, New York

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Figure

6a

Notes

Figure provided by O'Brien & Gere (2012).

P:\PRJ\Projects\TR0344 - GE Auburn\1 Pilot\Reports\1 Pilot Work Plan\Figures\[Figure 6a - NAPL Lines of Evidence.xlsx]8_5 x 11 landscape_no client

This document was developed in color. Reproduction in B/W may not represent the data as intended.

Air photo background obtained in 2011.

Probable and Potential DNAPL Presence in Overburden

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Auburn, New York

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Figure

6b

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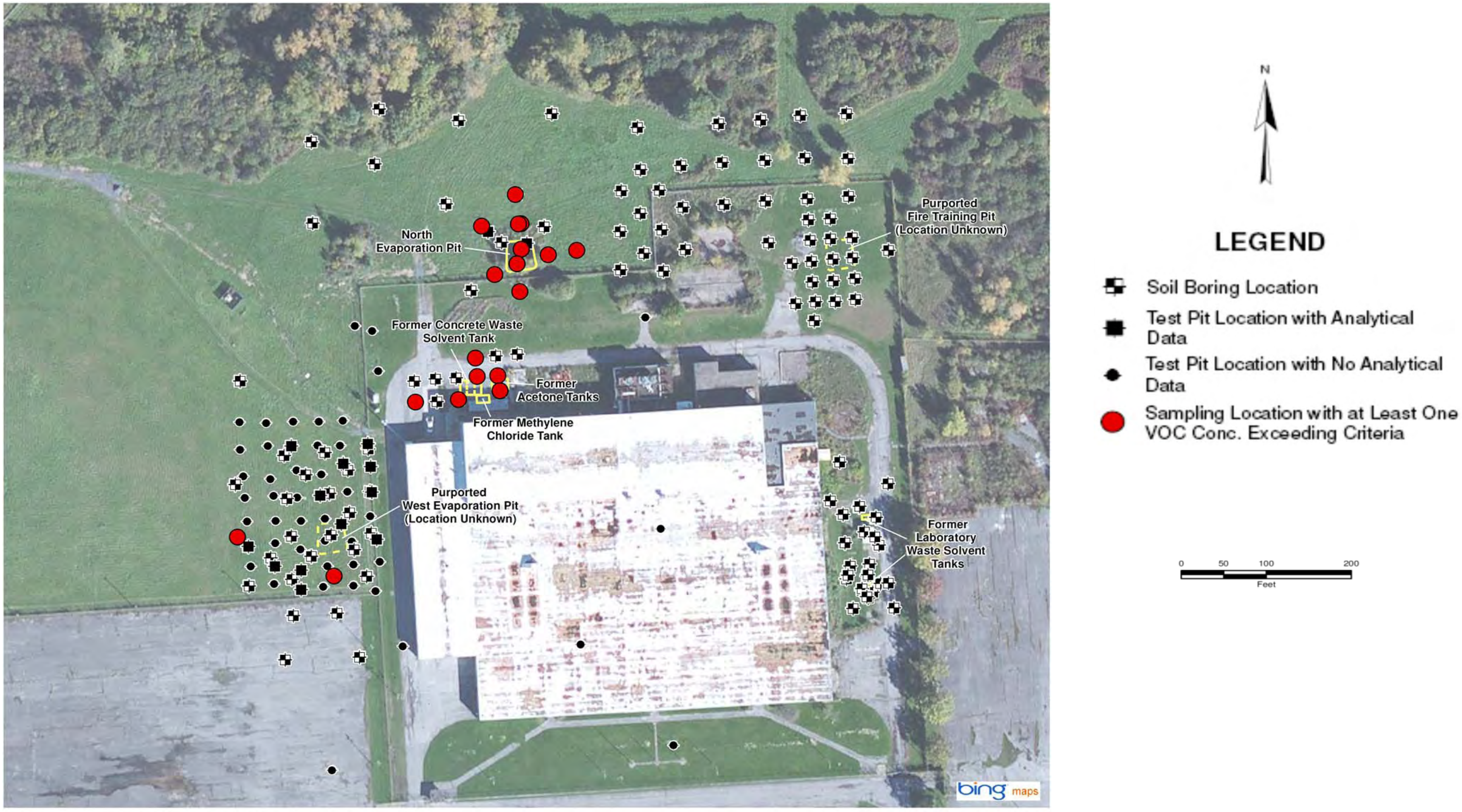
Notes

Figure provided by O'Brien & Gere (2012).

P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\I1 Pilot Work Plan\Figures\[Figure 6b - Probable and Potential DNAPL.xlsx]8_5 x 11 landscape_no client



This document was developed in color. Reproduction in B/W may not represent the data as intended.

Air photo background obtained in 2011.

VOCs in Soil Exceeding Part 375 Industrial Criteria

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Auburn, New York

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Figure

7

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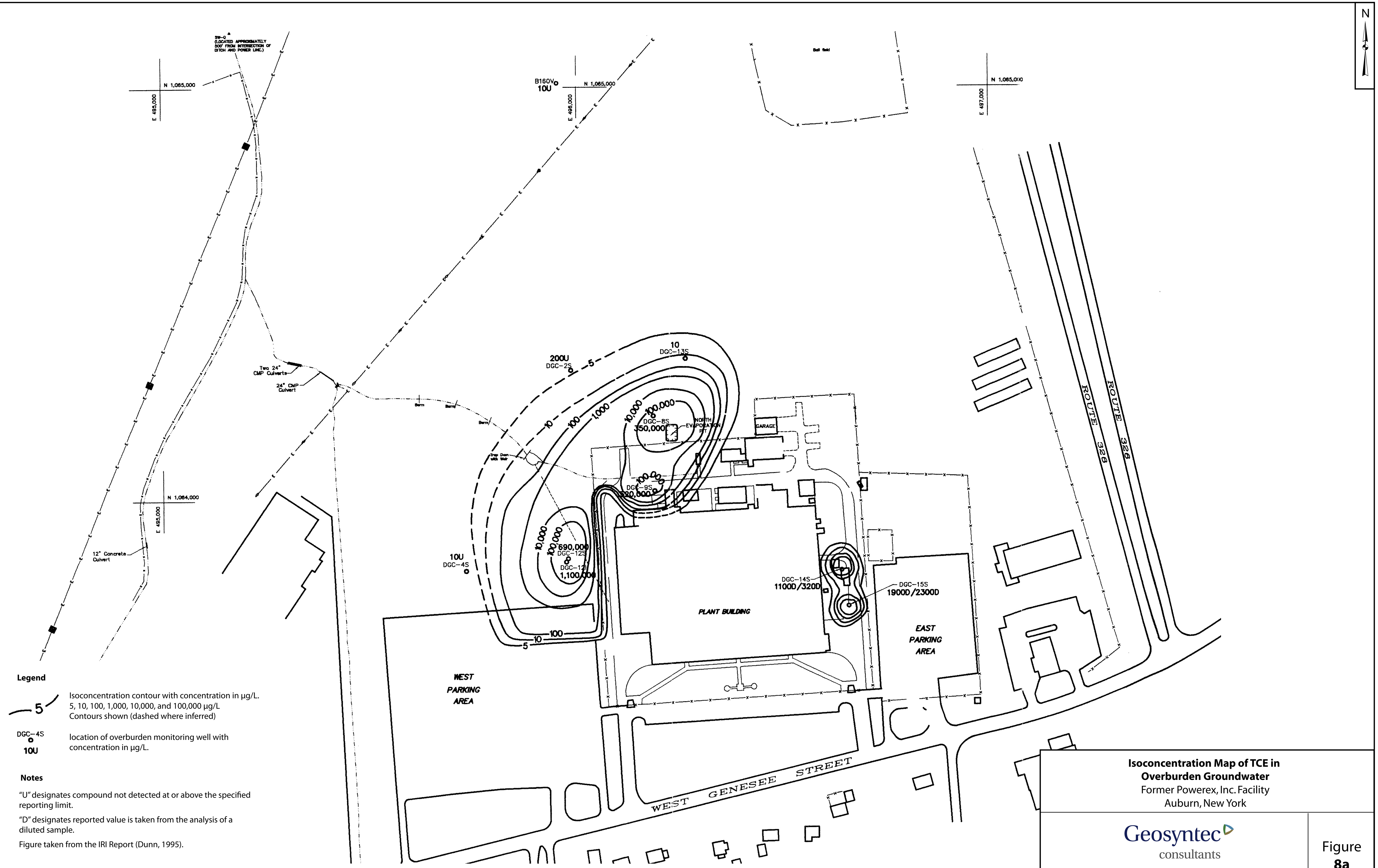
Notes

Criteria is New York State Part 375-6.8 (b) Soil Cleanup Objectives for Restricted Industrial Use.
Duplicate samples are included in data set.
Figure provided by O'Brien & Gere (2012).

P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\I1 Pilot Work Plan\Figures\[Figure 7 - VOCs in Soil.xlsx]8_5 x 11 landscape_no client



Legend

5 — Isoconcentration contour with concentration in µg/L. 5, 10, 100, 1,000, 10,000, and 100,000 µg/L Contours shown (dashed where inferred)

DGC-4S ○ 10U — location of overburden monitoring well with concentration in µg/L.

Notes

"U" designates compound not detected at or above the specified reporting limit.

"D" designates reported value is taken from the analysis of a diluted sample.

Figure taken from the IRI Report (Dunn, 1995).

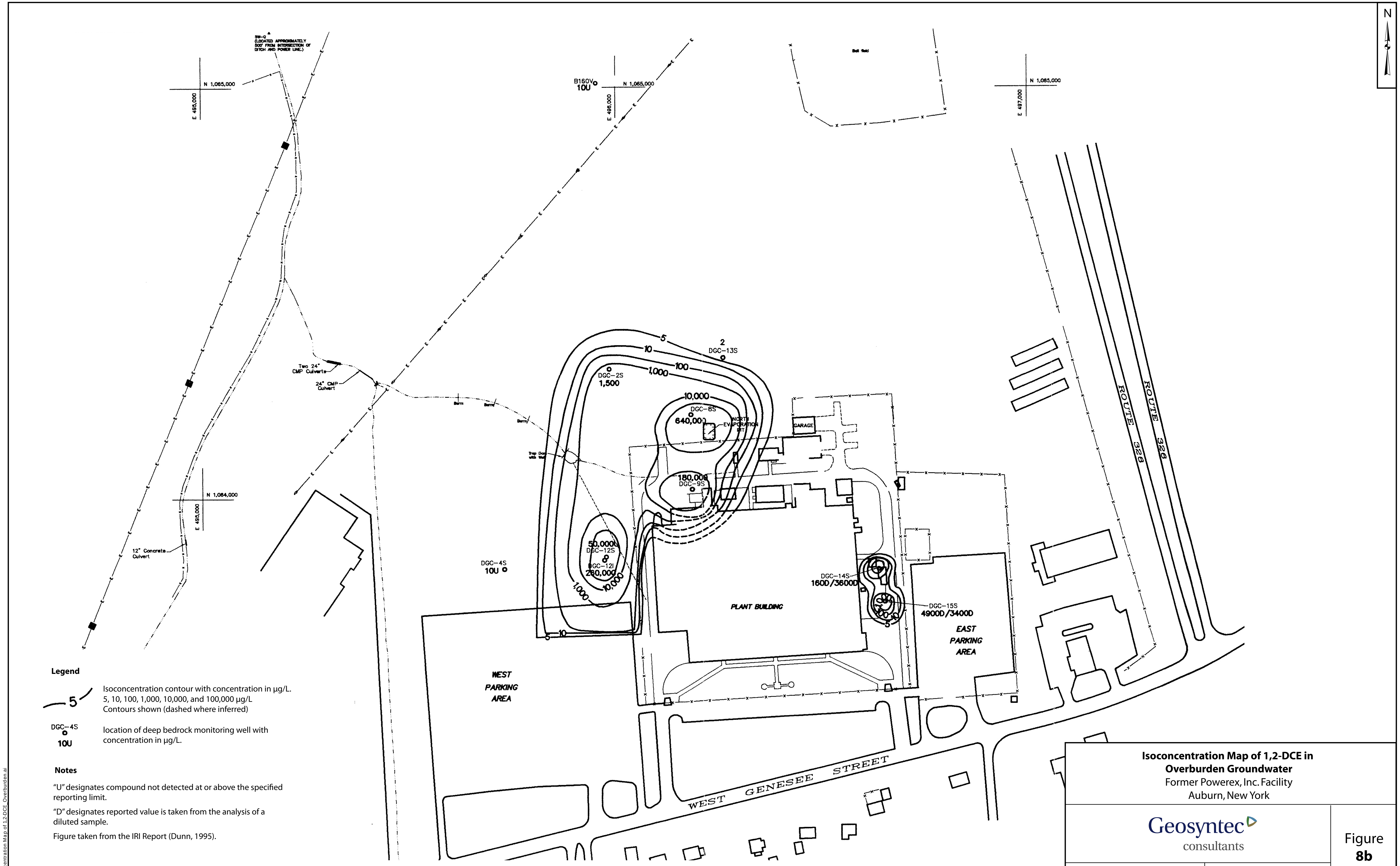
Isoconcentration Map of TCE in Overburden Groundwater
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure
8a

Guelph
June 2012

Isoconcentration Map of TCE_Overburden.ai



Legend

5	Isoconcentration contour with concentration in μg/L. 5, 10, 100, 1,000, 10,000, and 100,000 μg/L Contours shown (dashed where inferred)
DGC–4S ○ 10U	location of deep bedrock monitoring well with concentration in μg/L.

Notes

"U" designates compound not detected at or above the specified reporting limit.

"D" designates reported value is taken from the analysis of a diluted sample.

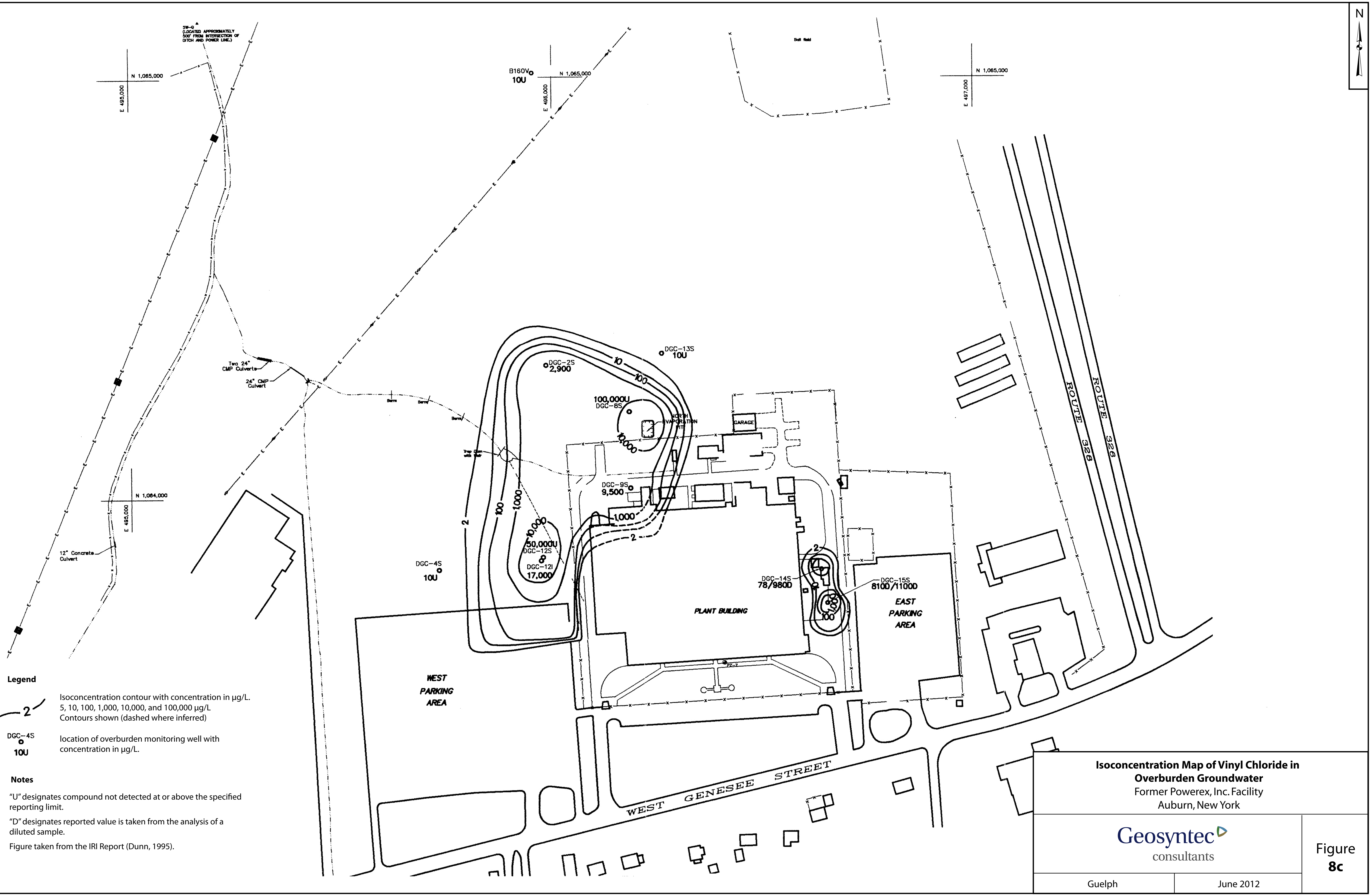
Figure taken from the IRI Report (Dunn, 1995).

Isoconcentration Map of 1,2-DCE in Overburden Groundwater
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure
8b

Guelph
June 2012



Legend

Isoconcentration contour with concentration in µg/L. 5, 10, 100, 1,000, 10,000, and 100,000 µg/L Contours shown (dashed where inferred)

DGC-4S 10U — location of overburden monitoring well with concentration in µg/L.

Notes

"U" designates compound not detected at or above the specified reporting limit.

"D" designates reported value is taken from the analysis of a diluted sample.

Figure taken from the IRI Report (Dunn, 1995).

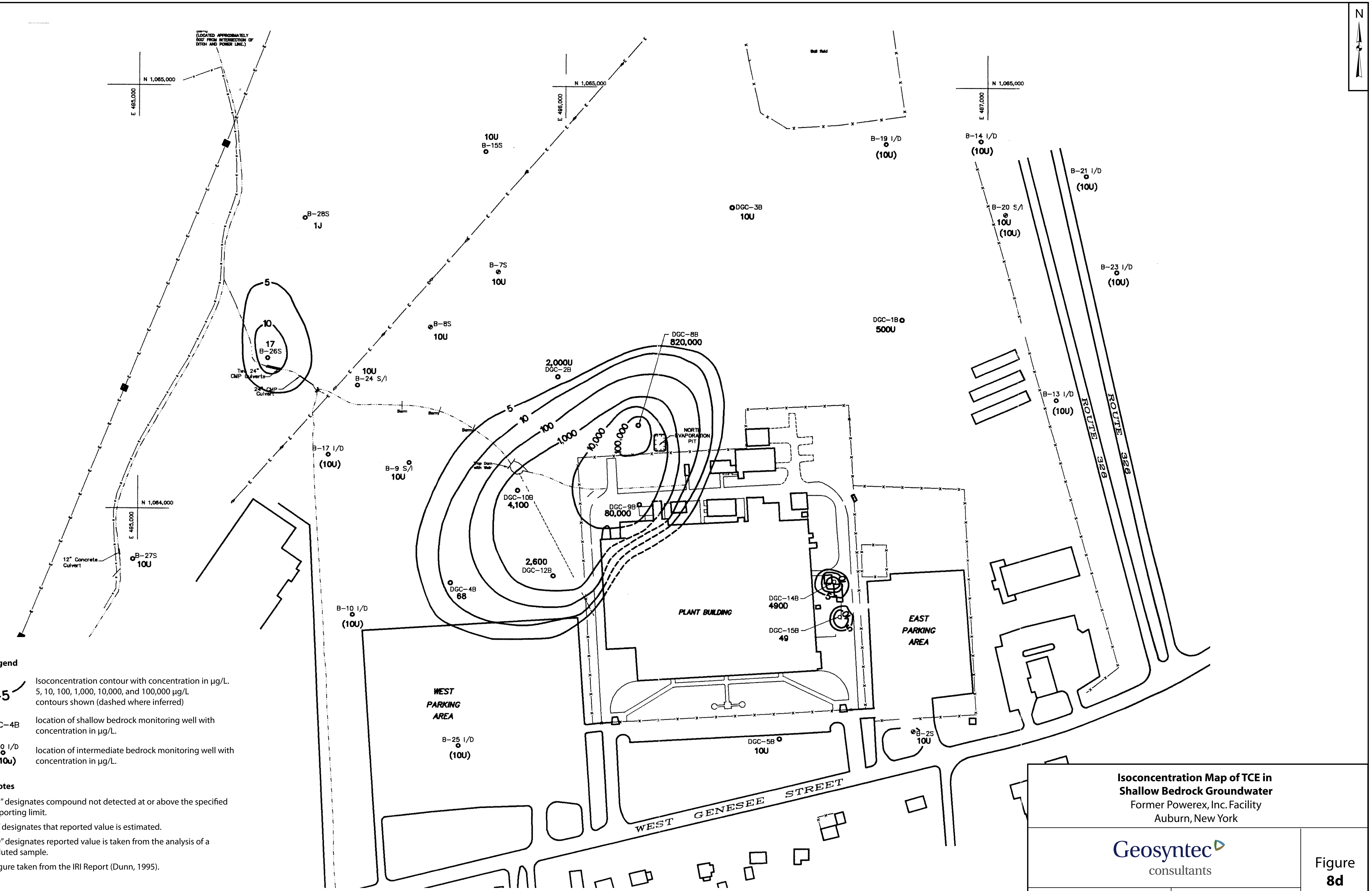
Isoconcentration Map of Vinyl Chloride in Overburden Groundwater
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure
8c

Guelph
June 2012

Isoconcentration Map of VC_Overburden.ai



Legend

5	Isoconcentration contour with concentration in µg/L. 5, 10, 100, 1,000, 10,000, and 100,000 µg/L contours shown (dashed where inferred)
DGC-4B	location of shallow bedrock monitoring well with concentration in µg/L.
B-10 I/D (10u)	location of intermediate bedrock monitoring well with concentration in µg/L.

Notes

"U" designates compound not detected at or above the specified reporting limit.

"J" designates that reported value is estimated.

"D" designates reported value is taken from the analysis of a diluted sample.

Figure taken from the IRI Report (Dunn, 1995).

Isoconcentration Map of TCE in Shallow Bedrock Groundwater
Former Powerex, Inc. Facility
Auburn, New York

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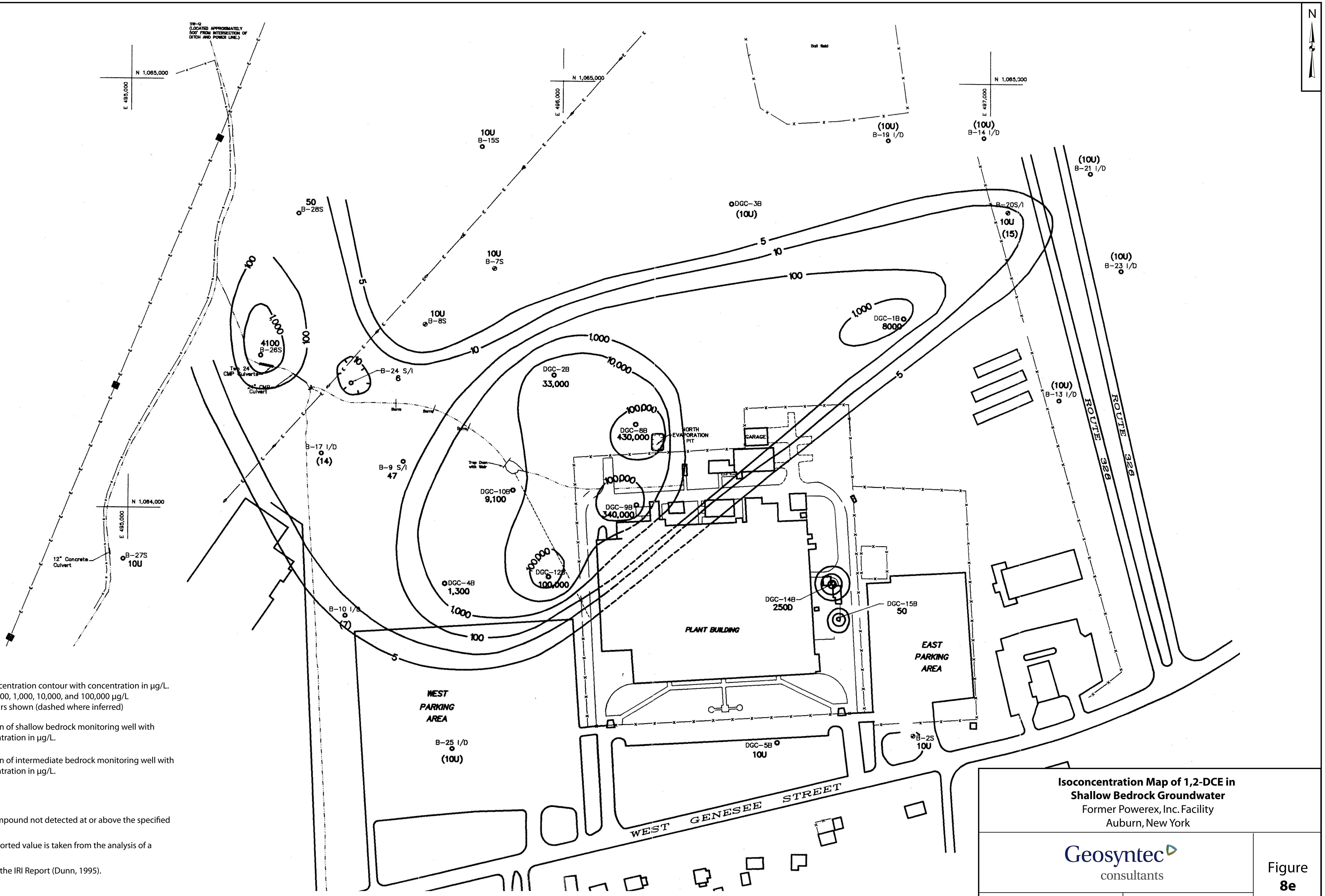
Guelph | June 2012

Figure
8d

Isoconcentration Map of TCE_Shallow Bedrock.ai



Legend

5	Isoconcentration contour with concentration in µg/L. 5, 10, 100, 1,000, 10,000, and 100,000 µg/L contours shown (dashed where inferred)
DGC-4B 1,300	location of shallow bedrock monitoring well with concentration in µg/L.
B-10 I/D (7)	location of intermediate bedrock monitoring well with concentration in µg/L.

Notes

"U" designates compound not detected at or above the specified reporting limit.

"D" designates reported value is taken from the analysis of a diluted sample.

Figure taken from the IRI Report (Dunn, 1995).

Isoconcentration Map of 1,2-DCE in
Shallow Bedrock Groundwater
Former Powerex, Inc. Facility
Auburn, New York

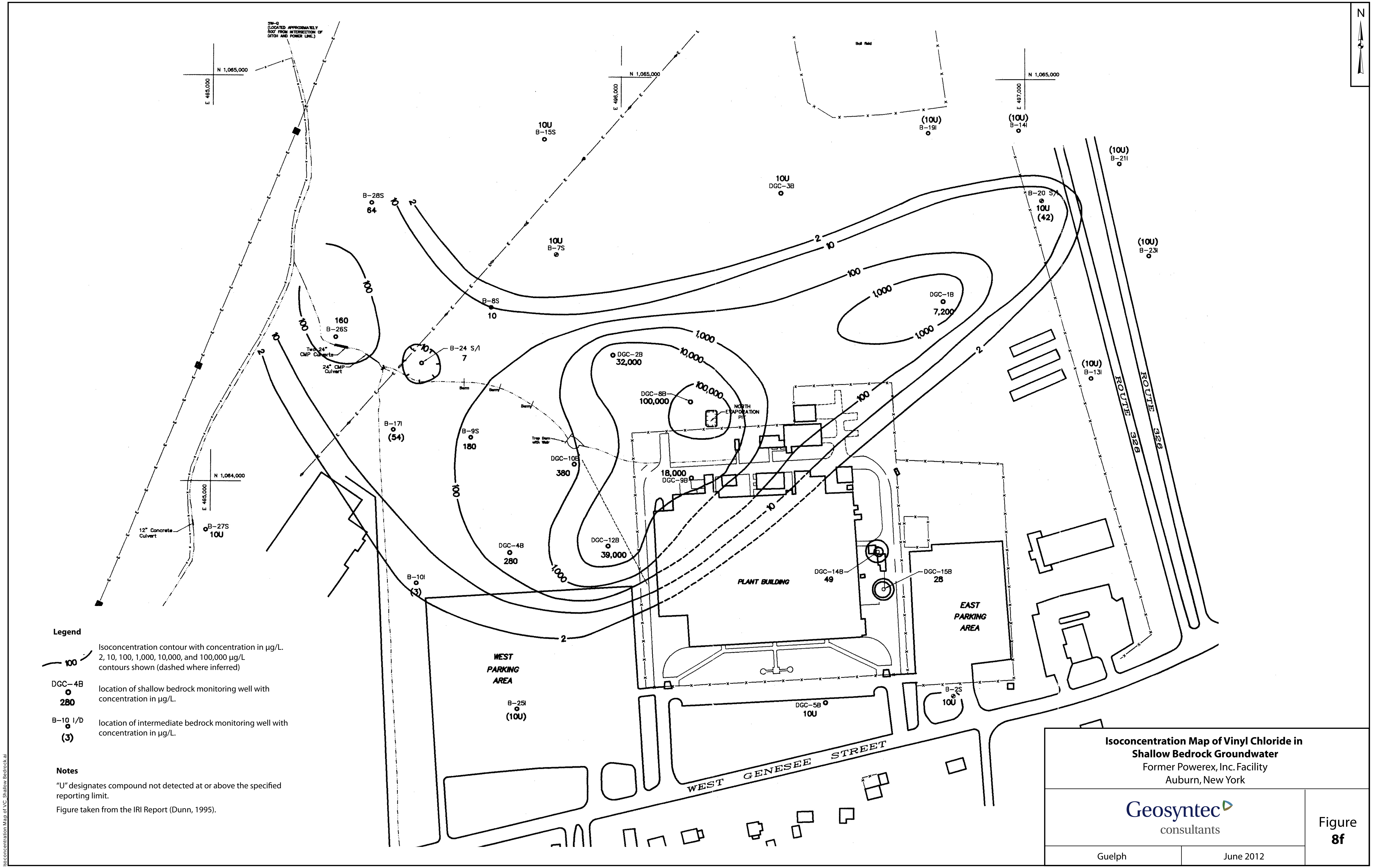
Geosyntec consultants

Figure
8e

Guelph

June 2012

Isoconcentration Map of 1,2-DCE_Shallow Bedrock.ai



Legend

— 100 — Isoconcentration contour with concentration in µg/L. 2, 10, 100, 1,000, 10,000, and 100,000 µg/L contours shown (dashed where inferred)

DGC-4B ○ 280 location of shallow bedrock monitoring well with concentration in µg/L.

B-10 I/D ○ (3) location of intermediate bedrock monitoring well with concentration in µg/L.

Notes

"U" designates compound not detected at or above the specified reporting limit.

Figure taken from the IRI Report (Dunn, 1995).

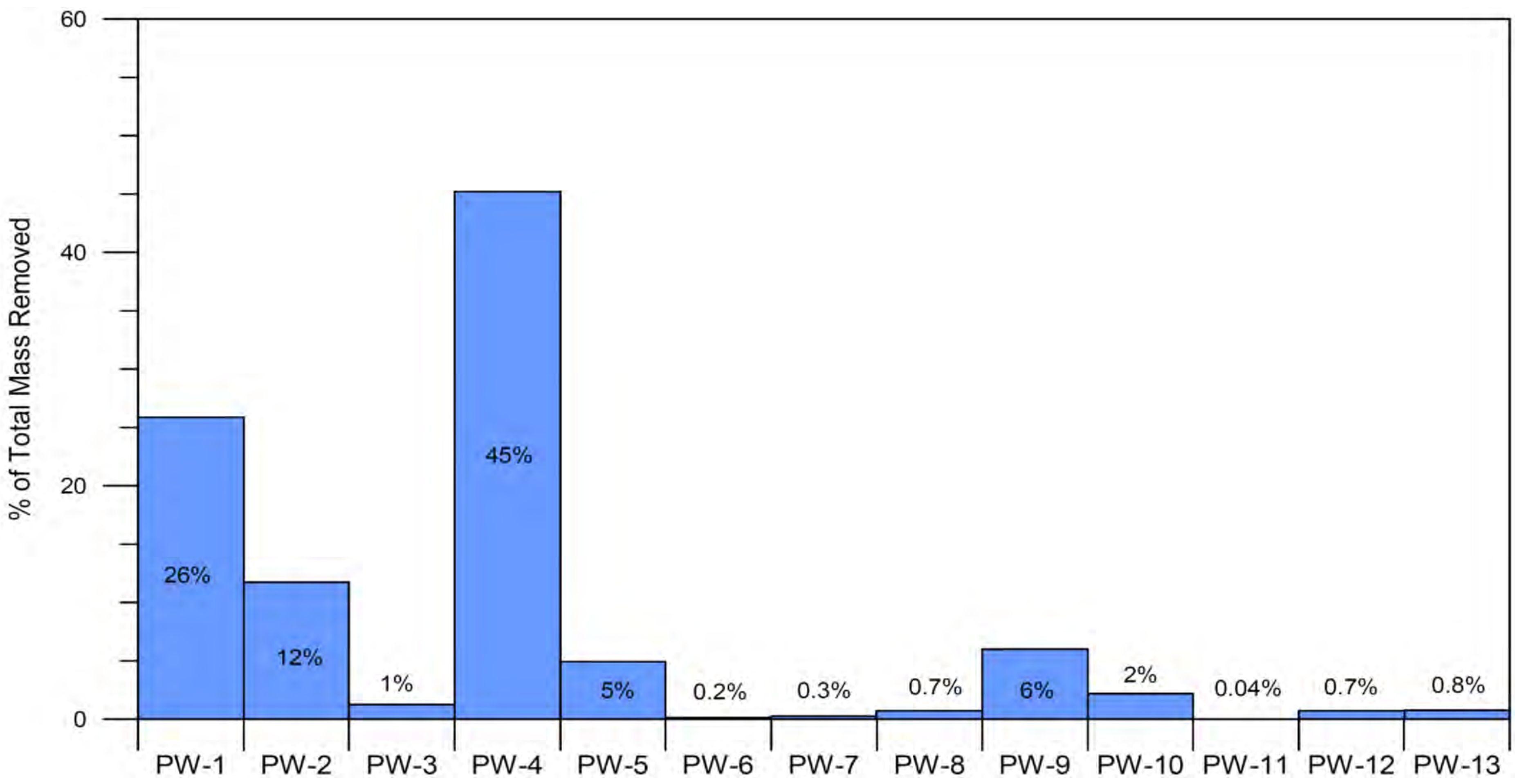
Isoconcentration Map of Vinyl Chloride in Shallow Bedrock Groundwater
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure
8f

Guelph
June 2012

Isoconcentration Map of VC_Shallow Bedrock.ai



Percent of Total VOC Mass Removed From Each Extraction Well

Former Powerex, Inc. Facility
Auburn, New York

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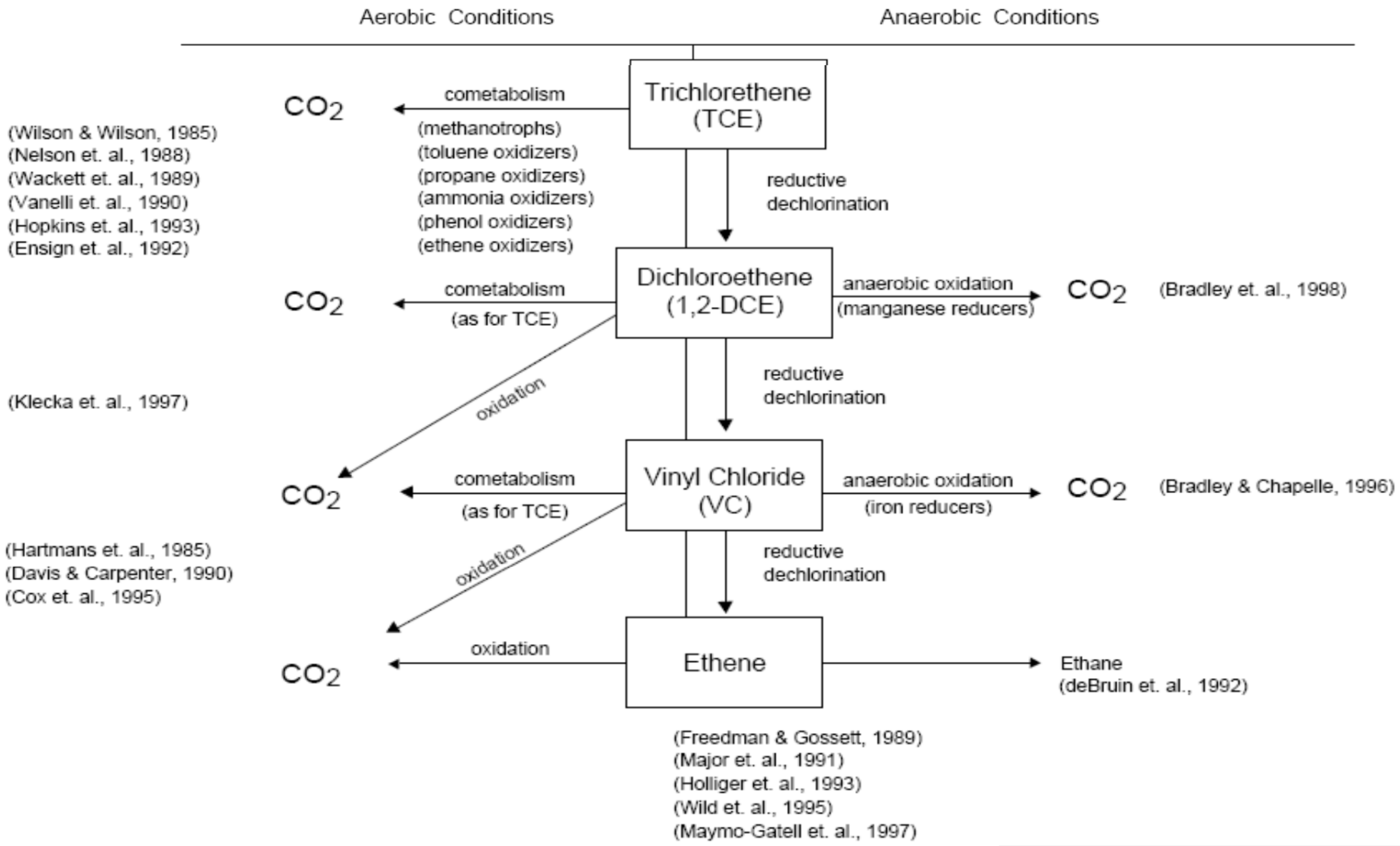
Figure 9

Guelph

June 2012

Notes

Figure provided by O'Brien & Gere (2012).



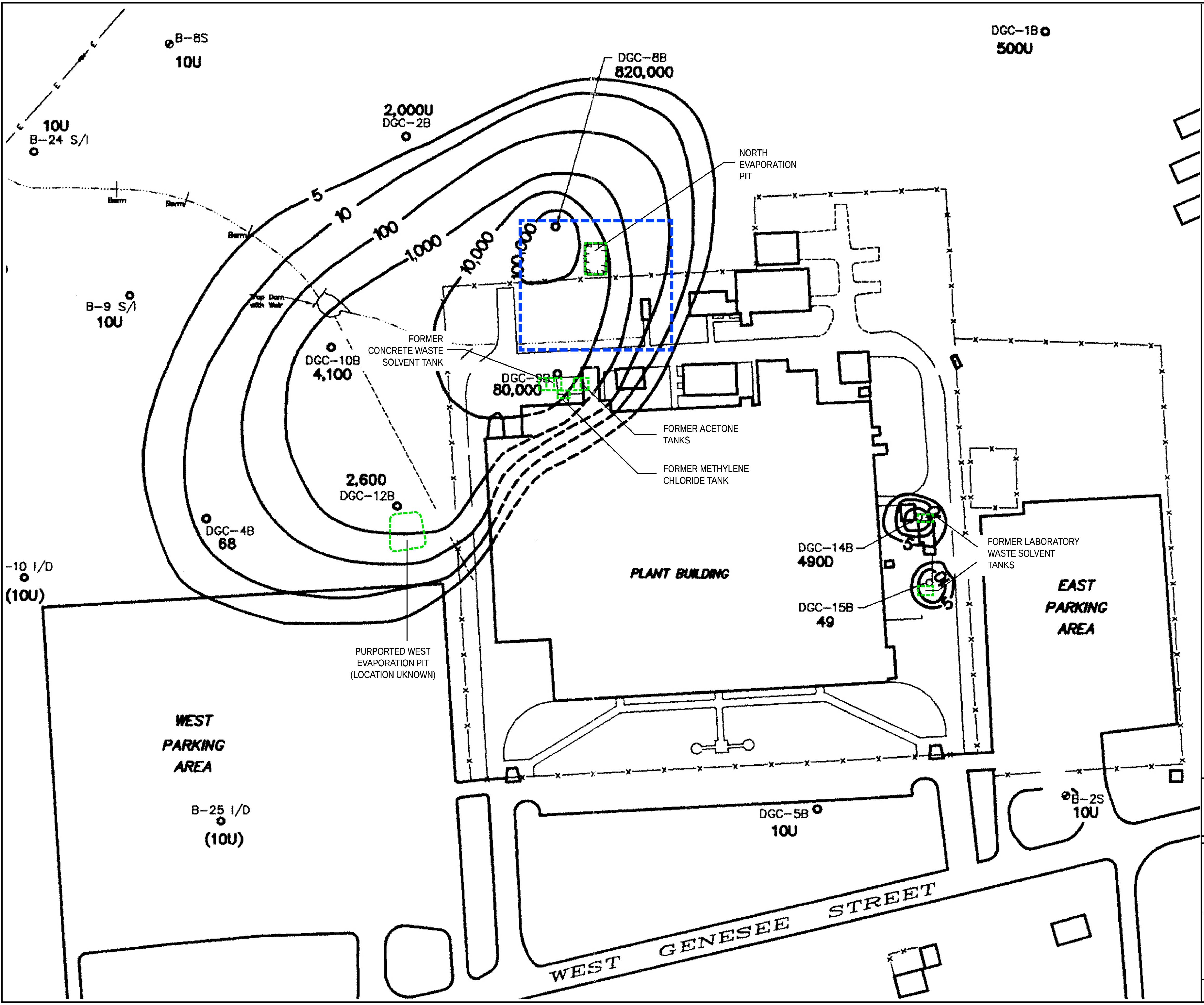
P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\I1 Pilot Work Plan\Figures\[Figure 10 - Biodegradation Pathways.xlsx]8_5 x 11 landscape_no client

Pathways for the Biodegradation of Chlorinated Ethenes
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Figure 10

Guelph
June 2012



Legend

5	Shallow bedrock groundwater TCE isoconcentration contour with concentration in µg/L. 5, 10, 100, 1,000, 10,000, and 100,000 µg/L contours shown (dashed where inferred).
DGC-4B	Location of shallow bedrock monitoring well with concentration in µg/L.
B-10 I/D (10U)	Location of intermediate bedrock monitoring well with concentration in µg/L.
🟩	Approximate location of primary sources.
🟦	Location of pilot test area.

Notes

"U" designates compound not detected at or above the specified reporting limit.

"J" designates that reported value is estimated.

"D" designates reported value is taken from the analysis of a diluted sample.

Figure taken from the IRI Report (Dunn, 1995).

120 60 0 120 Feet

Location of Pilot Test Area
Former Powerex, Inc. Facility
Auburn, New York

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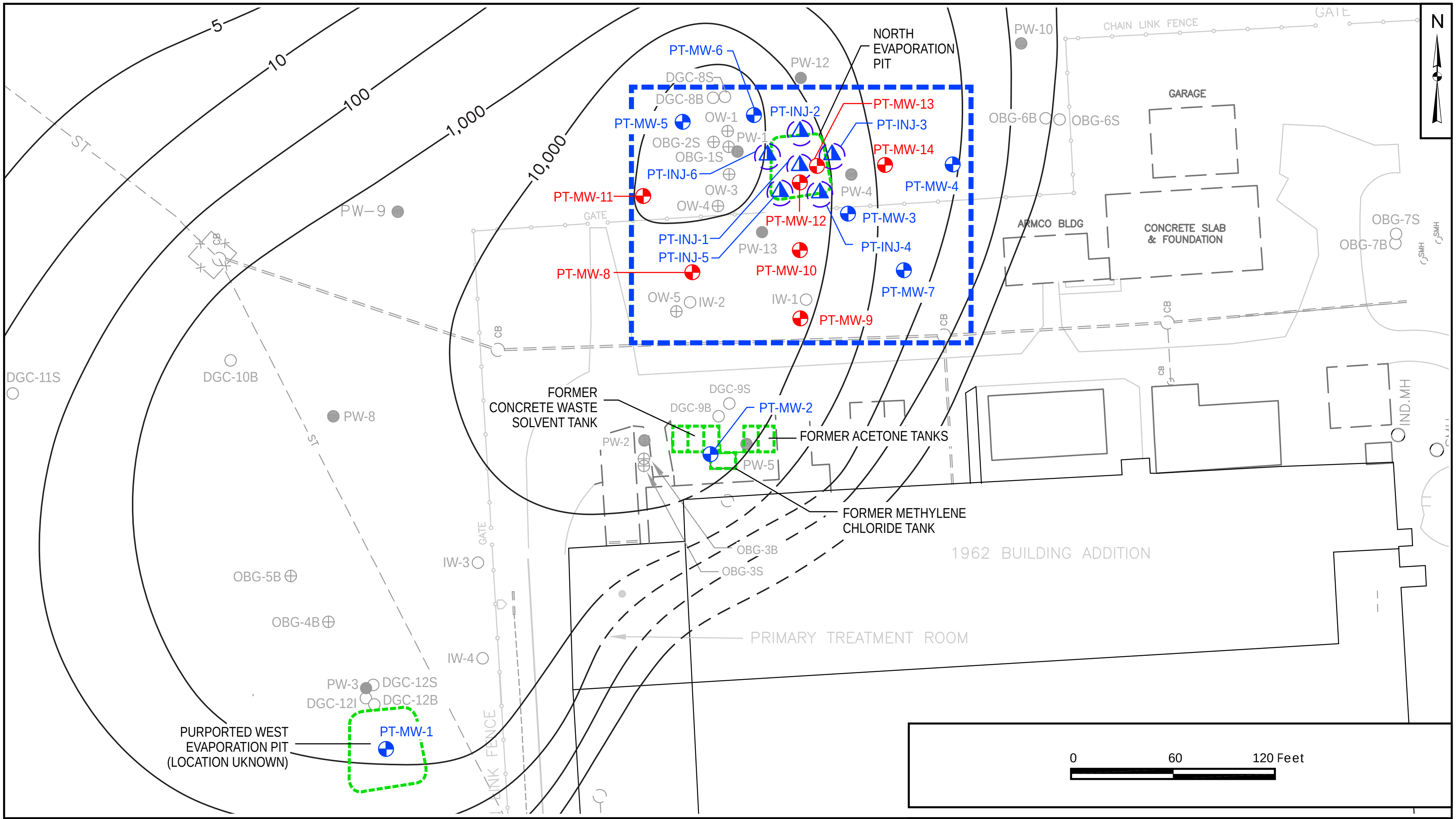
consultants

Figure
11

Guelph

June 2012

Location of Pilot Test Area.ai



Legend

Property boundary

Storm line

Shallow bedrock groundwater TCE concentration contour

▲ Phase 1 proposed I1 injection well

● Phase 1 proposed I1 monitoring well

● Phase 2 proposed I1 monitoring well

○ Proposed 10' radius of influence

🟩 Approximate location of sources or suspected sources

🟦 Location of pilot test area

Figure taken from the IRI Report (Dunn, 1995).

Location of Proposed Pilot Test Wells
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec
consultants

Figure
12

Guelph
June 2012

Location of Proposed Test Wells.ai

I:\Ge.612\49543.Ri-Fs-Work-Plan\Docs\Reports\Phase 1 Summary Report\Figures\Figure 13 Well Locs.mxd

PLOTDATE: 10/24/12 12:26:15 PM SpooneAM

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FIGURE 13

N

LEGEND

- ⊕ Phase 1 Pilot Test Monitoring Well
- ⊕ Phase 1 Pilot Test Injection Well
- ⊕ Existing Shallow Bedrock Pumping, Injection or Monitoring Well

Former Powerex, Inc. Facility
EISB Pilot Test
Phase 1 Interim Report

General Electric Company
Albany, New York

PHASE 1 PILOT TEST MONITORING AND INJECTION WELL LOCATION MAP

0 30 60 120
Feet

APRIL 2013
49543

O'BRIEN & GERE

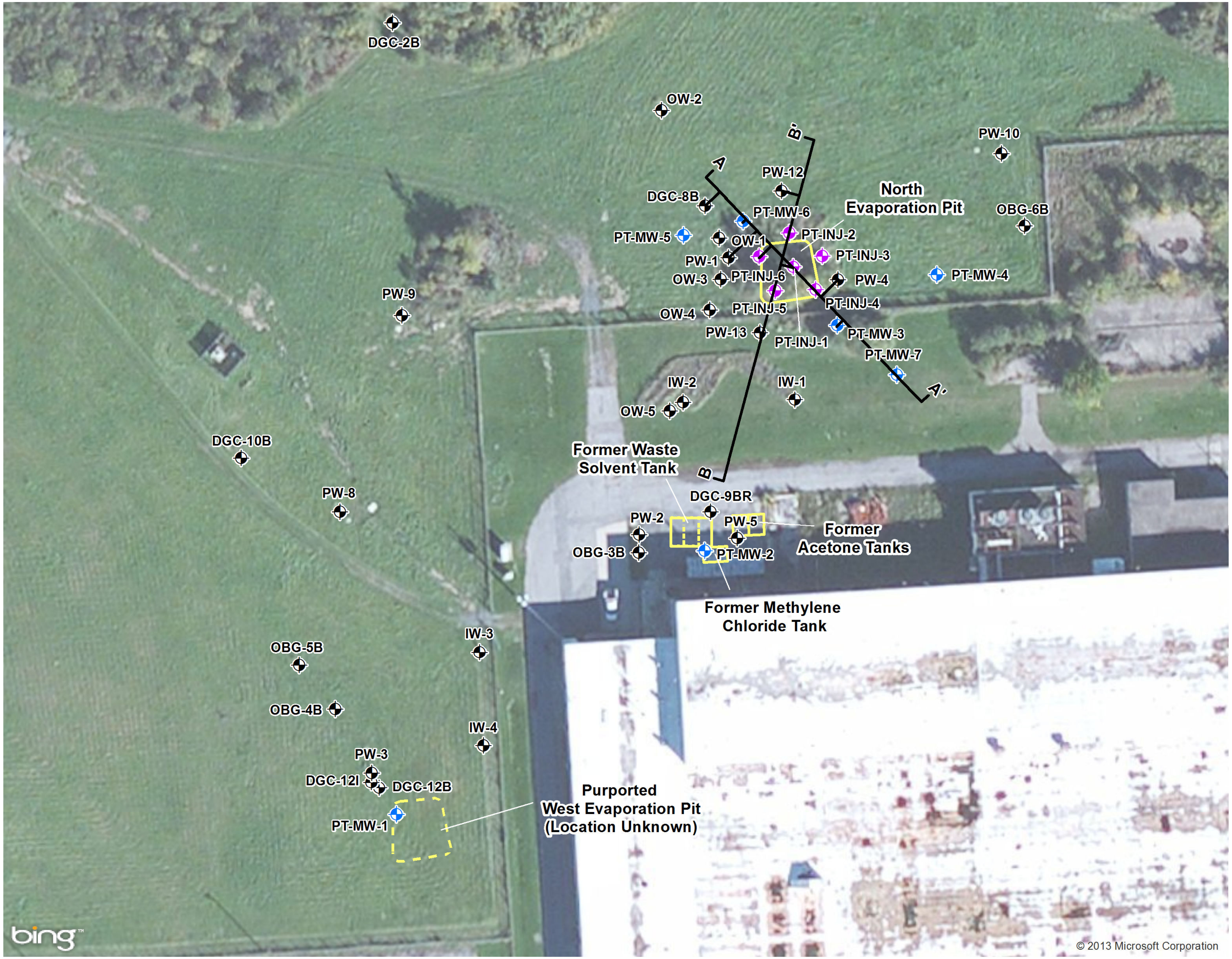

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FIGURE 14

N

LEGEND

⊕ Phase 1 Pilot Test Monitoring Well

⊕ Phase 1 Pilot Test Injection Well

⊕ Existing Shallow Bedrock Pumping, Injection or Monitoring Well

— Cross Section Location Line

Former Powerex, Inc. Facility
EISB Pilot Test
Phase 1 Interim Report

General Electric Company
Albany, New York

CROSS SECTION LOCATION MAP

0 30 60 120
Feet

APRIL 2013
49543

O'BRIEN & GERE

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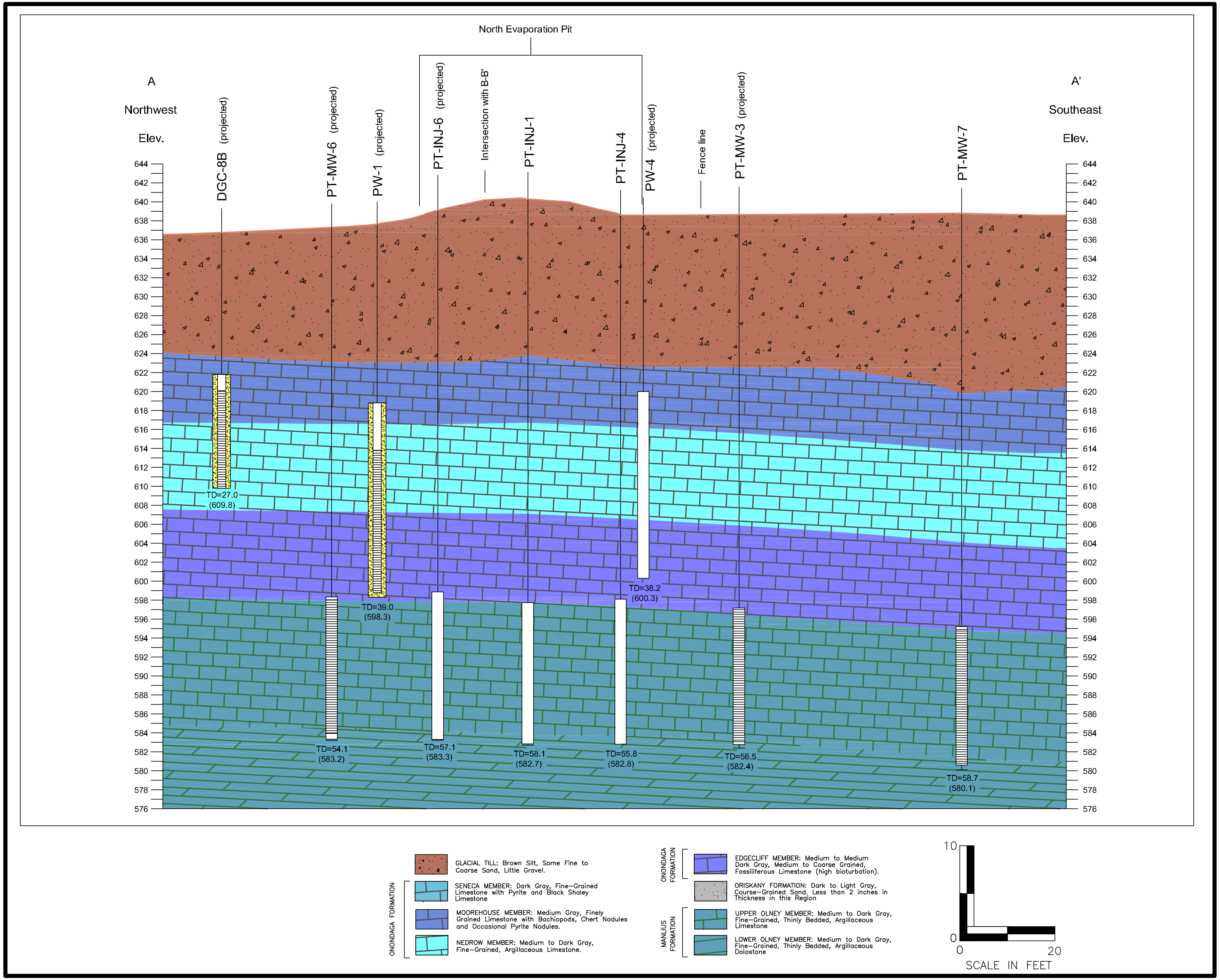

FIGURE 15

LEGEND

PT–INJ–1 ← MONITORING/INJECTION WELL ID

← CASED SECTION OF BOREHOLE

← INTERVAL OPEN TO FORMATION (see below)

TD=58.1 ← TOTAL DEPTH OF BORING (feet below grade)

(582.7) ← ELEVATION OF BOTTOM OF BOREHOLE (feet above mean sea level)

INTERVAL OPEN TO FORMATION

← WELL SREEN WITH FILTER PACK

← OPEN BOREHOLE WITH REMOVABLE WELL SCREEN

← OPEN BOREHOLE

Former Powerex, Inc. Facility
EISB Pilot Test
Phase 1 Interim Report

General Electric Company
Albany, New York

CROSS SECTION
A-A'

FILE NO. 49543
APRIL 2013

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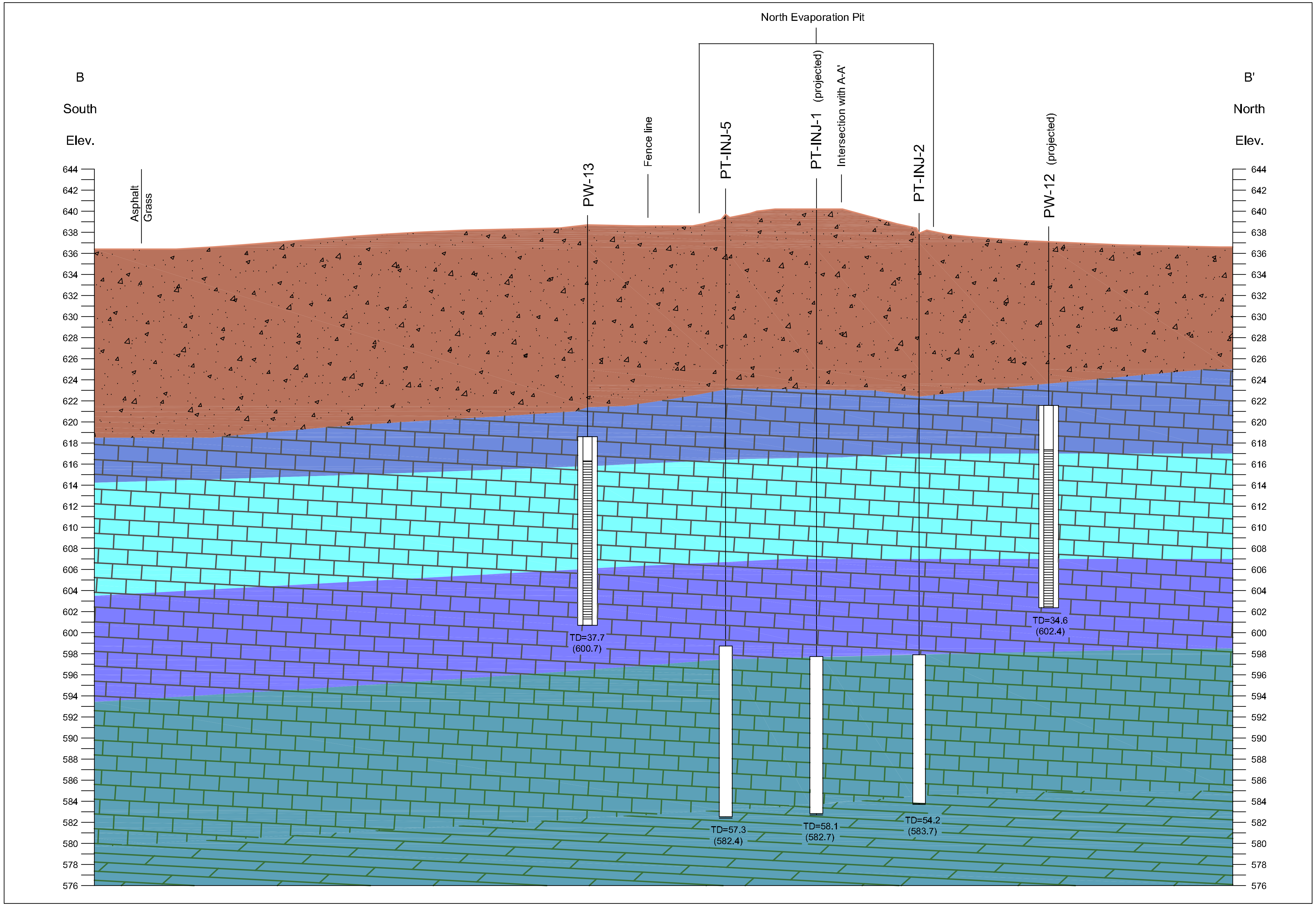
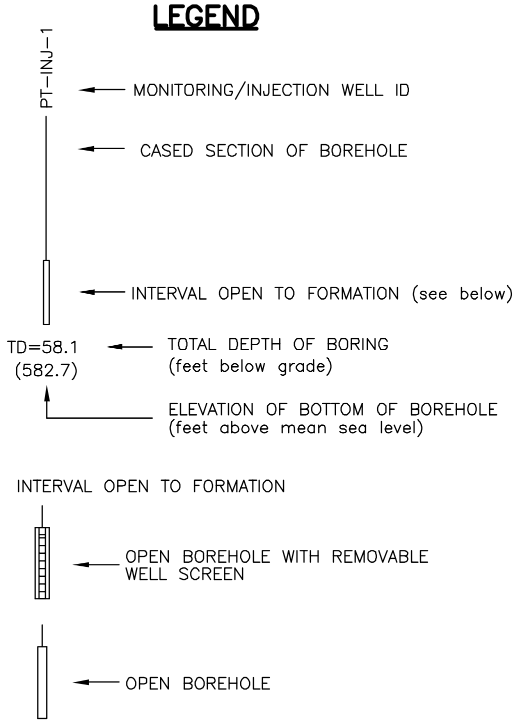
FIGURE 16



LEGEND



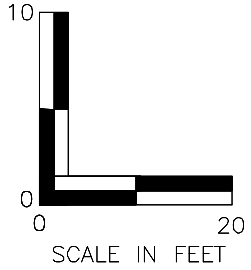
▨ GLACIAL TILL: Brown Silt, Some Fine to Coarse Sand, Little Gravel.

ONONDAGA FORMATION
- ▨ SENECA MEMBER: Dark Gray, Fine–Grained Limestone with Pyrite and Black Shaley Limestone
- ▨ MOOREHOUSE MEMBER: Medium Gray, Finely Grained Limestone with Bachiopods, Chert Nodules and Occasional Pyrite Nodules.
- ▨ NEDROW MEMBER: Medium to Dark Gray, Fine–Grained, Argillaceous Limestone.

ONONDAGA FORMATION
- ▨ EDGECLIFF MEMBER: Medium to Medium Dark Gray, Medium to Coarse Grained, Fossiliferous Limestone (high bioturbation).

▨ ORISKANY FORMATION: Dark to Light Gray, Course–Grained Sand. Less than 2 inches in Thickness in this Region

MANLIUS FORMATION
- ▨ UPPER OLNEY MEMBER: Medium to Dark Gray, Fine–Grained, Thinly Bedded, Argillaceous Limestone
- ▨ LOWER OLNEY MEMBER: Medium to Dark Gray, Fine–Grained, Thinly Bedded, Argillaceous Dolostone



Former Powerex, Inc. Facility
EISB Pilot Test
Phase 1 Interim Report

General Electric Company
Albany, New York

CROSS SECTION
B-B'

FILE NO. 49543
APRIL 2013

O'BRIEN & GERE

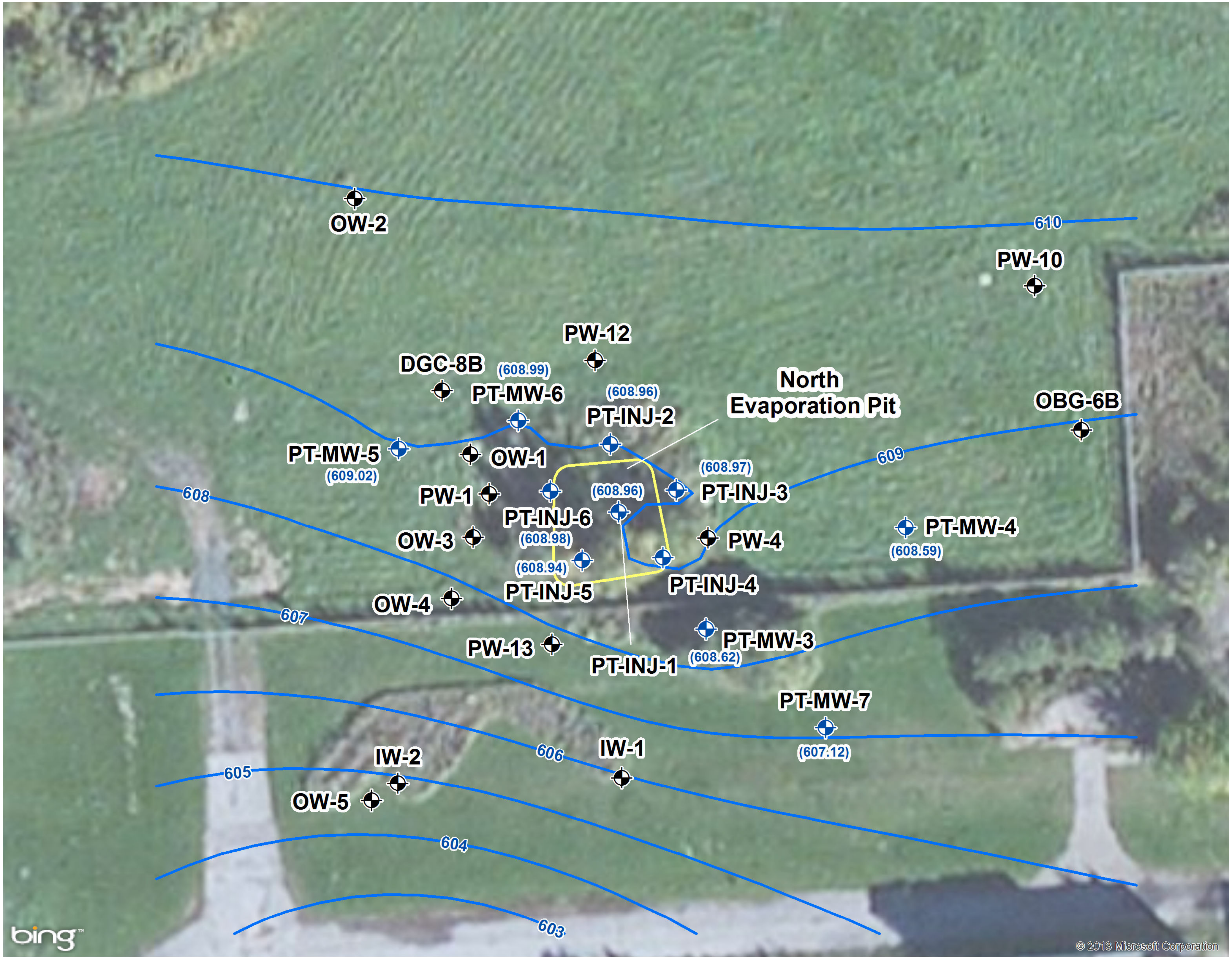


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FIGURE 17

LEGEND

- ⌖ Phase 1 Pilot Test Monitoring/ Injection Well
- (609.02) Water Level Elevation (ft amsl)
- ╱ I1 Groundwater Contour Line
  Contour Interval: 1 foot
- ⌖ Existing Shallow Bedrock Pumping, Injection or Monitoring Well

Former Powerex, Inc. Facility
EISB Pilot Test
Phase 1 Interim Report

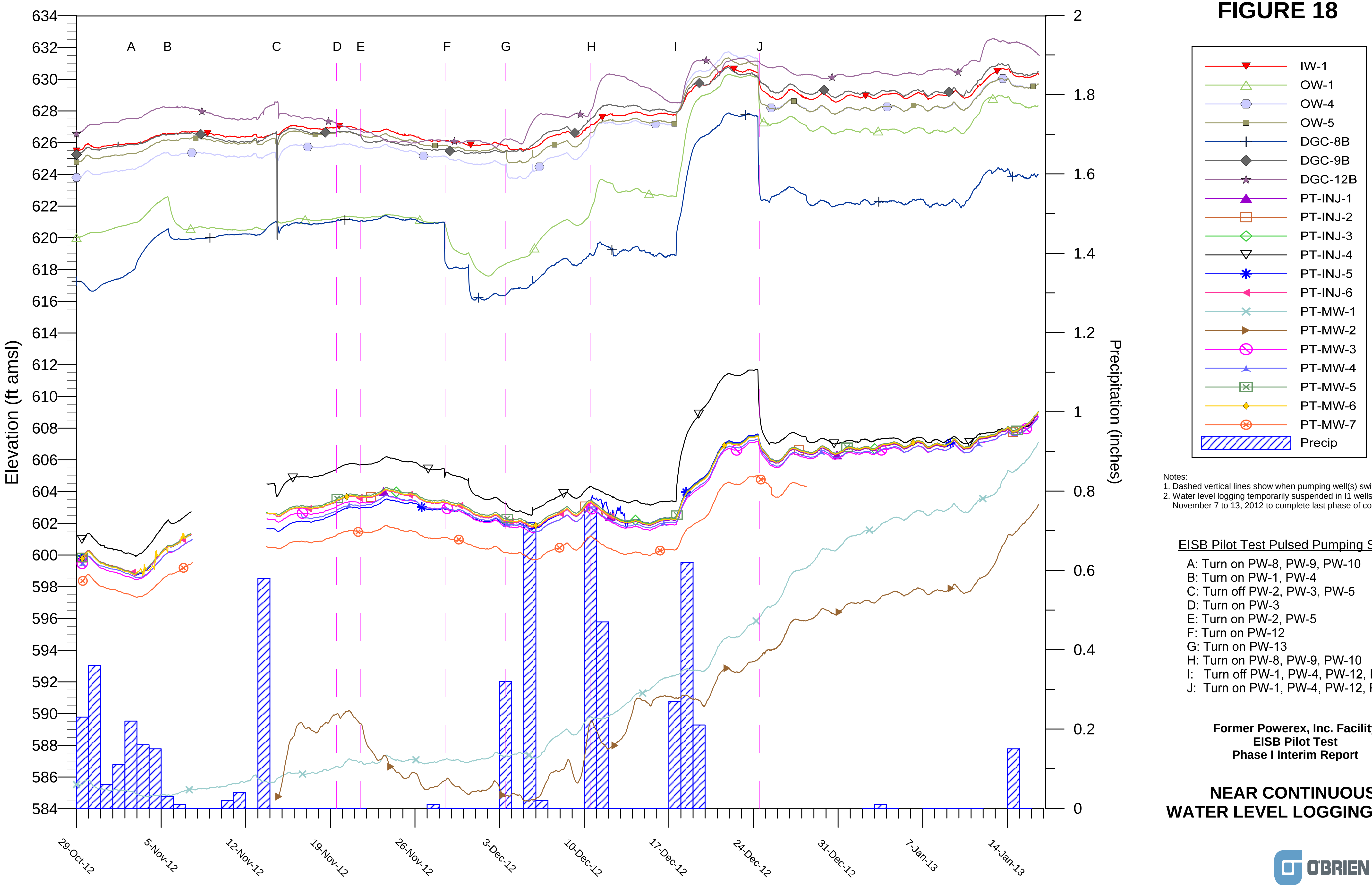
General Electric Company
Albany, New York

POTENTIOMETRIC SURFACE MAP FOR THE I1 BEDROCK UNIT IN PILOT TEST AREA ON FEBRUARY 5, 2013

APRIL 2013
49543

O'BRIEN & GERE

FIGURE 18



Notes:
1. Dashed vertical lines show when pumping well(s) switched on and off.
2. Water level logging temporarily suspended in I1 wells from November 7 to 13, 2012 to complete last phase of constant head testing.

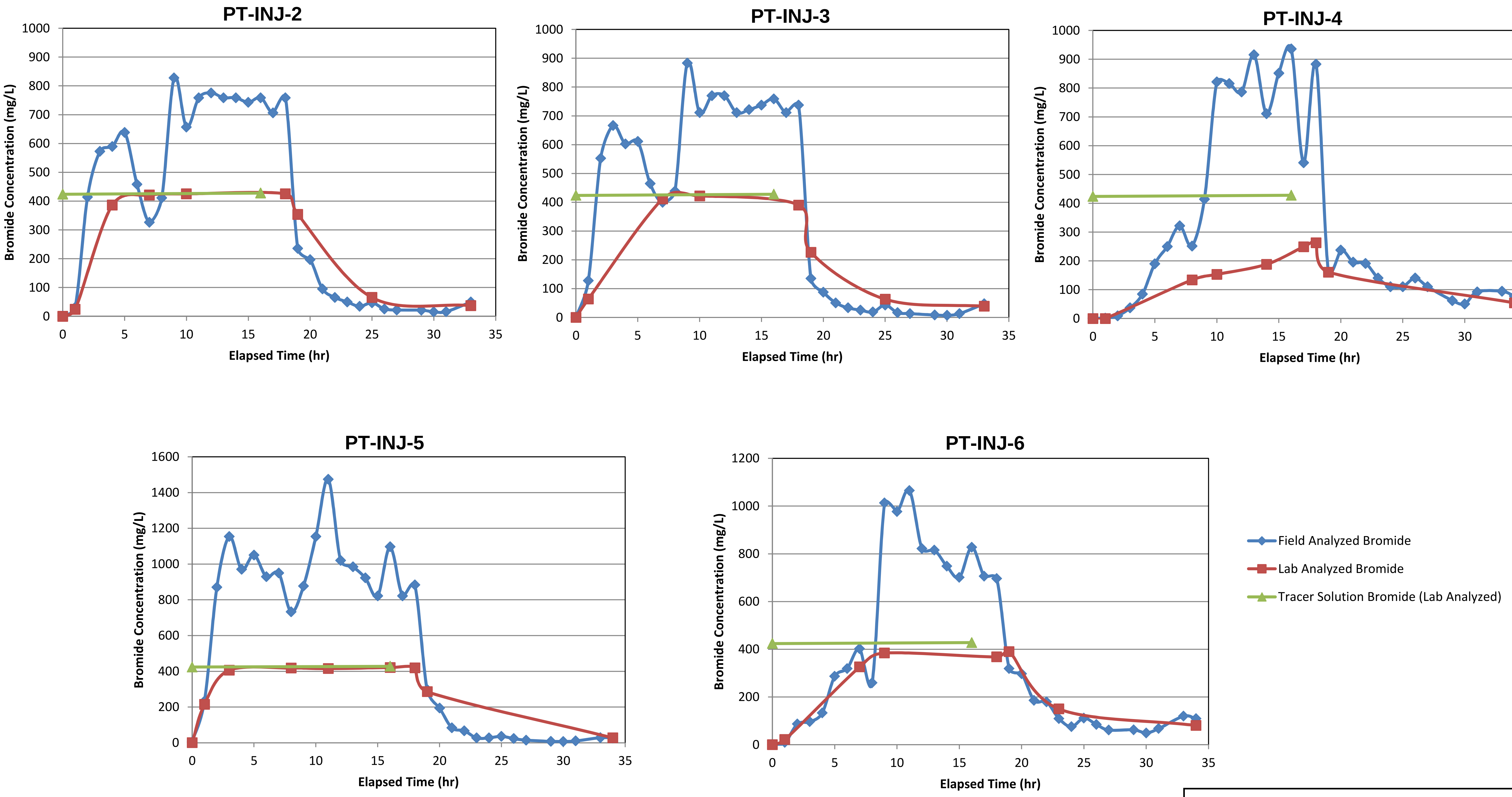
EISB Pilot Test Pulsed Pumping Scheme

A: Turn on PW-8, PW-9, PW-10
B: Turn on PW-1, PW-4
C: Turn off PW-2, PW-3, PW-5
D: Turn on PW-3
E: Turn on PW-2, PW-5
F: Turn on PW-12
G: Turn on PW-13
H: Turn on PW-8, PW-9, PW-10
I: Turn off PW-1, PW-4, PW-12, PW-13
J: Turn on PW-1, PW-4, PW-12, PW-13

Former Powerex, Inc. Facility
EISB Pilot Test
Phase I Interim Report

NEAR CONTINUOUS WATER LEVEL LOGGING DATA

O'BRIEN & GERE



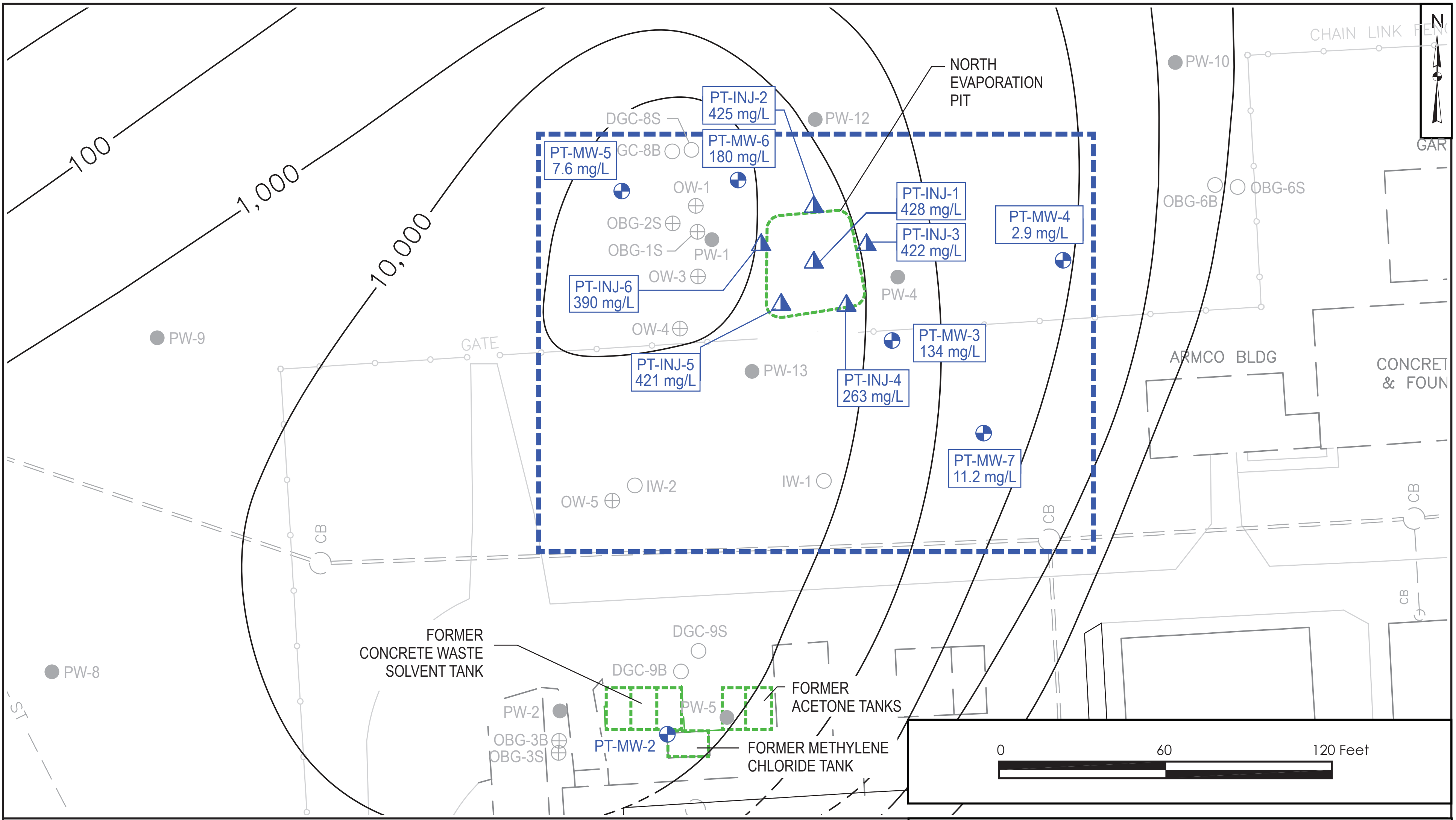
Bromide Concentration Profiles During Phase 1 Tracer Test
Former Powerex, Inc. Facility, Auburn, New York

Geosyntec consultants

Figure
19

Guelph
April 2013

P:\PRJ\Projects\TR0344 - GE Auburn I1 Pilot\Reports\Phase 1 Report\[Figure 19 - Bromide Conc Profiles.xlsx]Figure 19



Legend

—— — —— Property boundary

═ ═ ═ ═ ---ST--- Storm line

——10—— Shallow bedrock groundwater TCE concentration contour

▲ Phase 1 I1 injection well

⊕ Phase 1 I1 monitoring well

🟩 Approximate location of sources or suspected sources

🟦 Location of pilot test area

Figure taken from the IRI Report (Dunn, 1995).

Peak Bromide Concentrations During Phase 1 Tracer Test and Post-Test Sampling Periods

Former Powerex, Inc. Facility
Auburn, New York

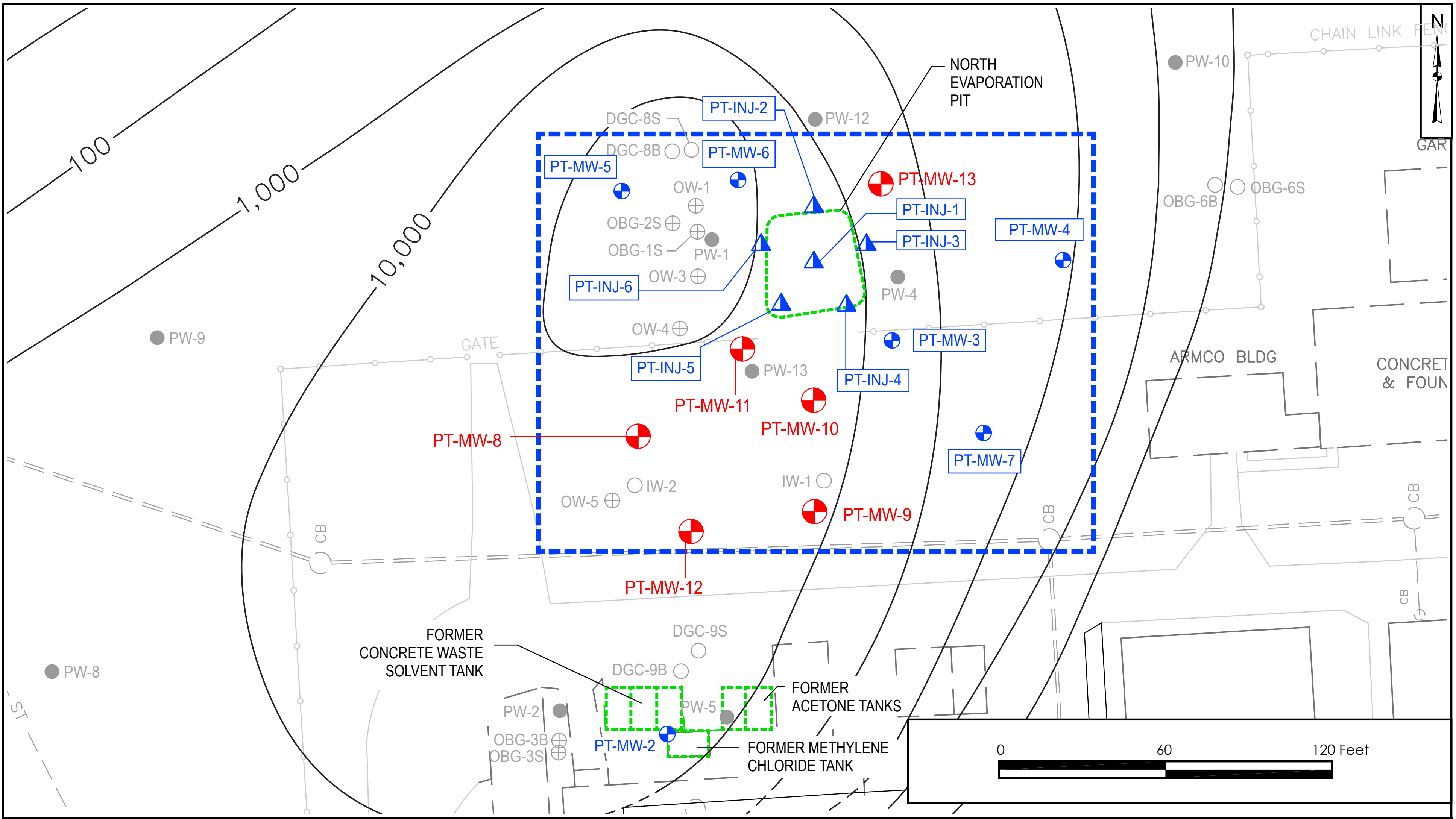
Geosyntec consultants

Figure
20

Guelph

April 2013

01 02 05 Location of Proposed Test Wells_zoom.ai



Legend

— — - — —	Property boundary
═ ═ ═ ═ - - - -ST- - - -	Storm line
——10——	Shallow bedrock groundwater TCE concentration contour
▲	Phase 1 I1 injection well
◐	Phase 1 I1 monitoring well
◐	Phase 2 proposed I1 monitoring well
🟩	Approximate location of sources or suspected sources
🟦	Location of pilot test area

Figure taken from the IRI Report (Dunn, 1995).

Revised Locations of Proposed Phase 2
Pilot Test Monitoring Wells
Former Powerex, Inc. Facility
Auburn, New York

Geosyntec
consultants

Figure
21

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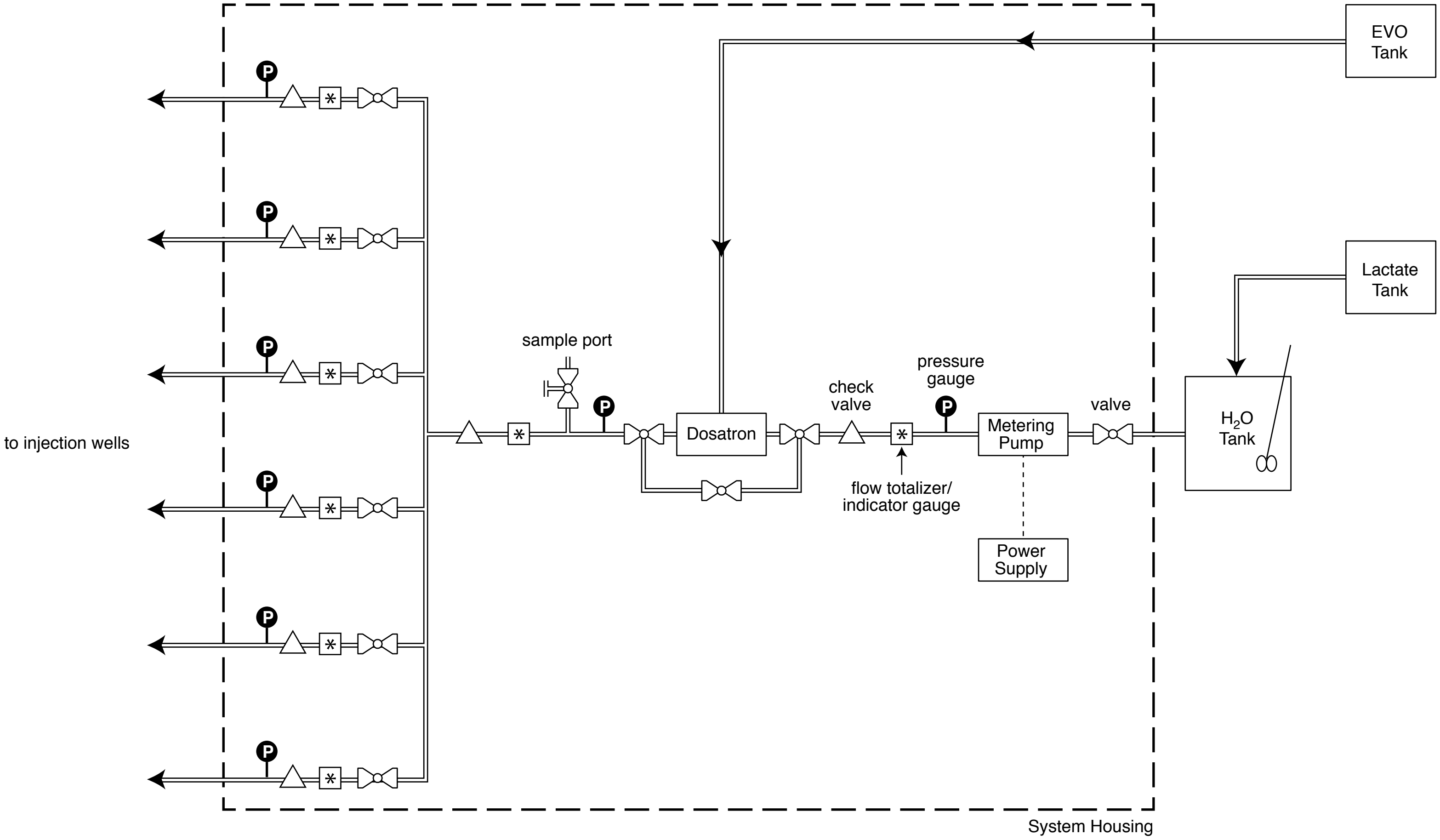
April 2013



Process and Instrumentation Diagram for Lactate and EVO Injections

Former Powerex, Inc. Facility
Auburn, New York

Geosyntec consultants

Guelph	June 2012

Figure
22

Pilot Design.ai

ATTACHMENT A

CORE LOGS

CORE LOG

PT-INJ-1

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 40.5 feet W of PW-1

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Layne Pech/Mark Eaves
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 19 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 58.1 ft. bgs

COORDINATES: N1064154.274 E816591.504
GROUND ELEV: 640.8
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 9/5/2012-9/26/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	640 635	
			10 15			11.2			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 17.0' bgs. Set 6" steel casing to 19.0' bgs. Seat spin-joint casing with drive shoe to 19.2' bgs.	630 625	
Onondaga	Moorehouse										Top of Bedrock @ 17.0' bgs (623.8' amsl)
			20	09:18 1 09:24	5	1.2	83.3	0	Limestone, medium dark gray (N4), fine grained, thinly bedded, moderately fractured, Breaks @ 19.2-19.5 (core crushed, medium angular gravel), 19.5 (horizontal, weathered), 19.8-19.9 (core crushed), 19.9 (horizontal, slightly weathered). D-2, S-1-2, F-4		
				09:39 2	5	5	90	49	Limestone, medium dark gray (N4) with 0.1-0.3 few distinct dark gray (N3) layers, thinly bedded, Breaks @ 21.2-21.45, 21.7-22.05 (high angle, slightly weathered), 21.8-21.9 (low angle, fresh), 22.7-22.9 (low angle, fresh), 23.0 (shaley), 23.1 (horizontal, non-planar, moderately weathered). D-2, S-1, F-3	620	Moorehouse-Nedrow contact @ 24.1' bgs

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Nedrow			10:04 10:13					Limestone, dark gray (N3) to black (N1), fine grained, fossiliferous (brachiopods), pyrite, Breaks @ 24.15 (horizontal, shaley partings), 24.45 (horizontal, moderately weathered).	615	(616.7' amsl)
				3	4	4.7	110.6	86	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, thin-medium bedded, very slightly fractured, fossiliferous (brachiopods), horizontal burrows in distinct intervals, pyrite, Breaks @ 26.2 (horizontal, fresh), 27.0 (horizontal, non-planar, slightly weathered), 28.15-28.2 (low angle, fresh), 28.5 (shaley, moderately weathered, matrix weakened, trace residual clay), 29.65 (horizontal, fresh), 30.0 (horizontal, non-planar, pitting, moderately weathered). D-2, S-1, F-2		
			30	10:32 10:48 4	2.9	5.1	100	85	Limestone, medium dark gray (N4) with portions of medium gray (N5) and dark gray (N3), thin-medium bedded, slightly fractured, fossiliferous (brachiopods), pyrite, Breaks @ 30.65 (horizontal, fresh), 30.7-31.0 (high angle, fresh), 30.9-31.2 (high angle, fresh), 32.4 (horizontal, very slightly weathered), 32.8 (horizontal, fresh). D-2, S-1, F-2	610	
Onondaga	Edgecliff		35	11:03 11:17					Limestone, medium gray (N5), medium grained, thin-medium bedded, slightly fractured, fossiliferous (brachiopods, crinoids), portions argillaceous, Breaks @ 34.4 (low angle, slightly weathered), 34.6 (horizontal, weathered).	605	Nedrow-Edgecliff contact @ 33.7' bgs (607.1' amsl)
				5	4.3	4.9	104.1	92	Limestone, medium gray (N5), medium grained, medium bedded, slightly fractured, fossiliferous, portions argillaceous (tabulate coral, crinoids), few styolites, Breaks @ 36.25 (horizontal, shaley, moderately weathered, matrix weakened), 36.4 (core crushed), 37.8-37.9 (core crushed to fine-medium sub-angular to sub-rounded gravel), 39.4 (horizontal, non-planar, moderately weathered). D-2, S-1, F-2		
			40	11:38 11:56 6	4.4	2.5	76	76	Limestone, medium gray (N5), medium grained, medium bedded, very slightly fractured, fossiliferous (crinoids, tabulate coral), styolites, Break @ 42.0 (horizontal, non-planar, along styolite, fresh). D-1, S-1, F-1	600	
				12:07 12:26 7 12:27	2	0.5	200	60	Limestone, SAA, Breaks @ 42.65 (horizontal, non-planar, along styolite, fresh), 42.75-43.1 (high angle, very slightly weathered). Utilized 5-7/8" roller bit to advance through bedrock from 19.2-43.1 and set 4" shallow bedrock casing to a depth of 43.1' bgs.		Edgecliff-Olney contact @ 43.1' bgs (597.7' amsl)
Manlius	Olney		45	07:49 8 07:55	3.3	1.8	94.4	94			
				08:05					Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, slightly fossiliferous, styolites common, Break @ 44.3 (horizontal). D-1, S-1, F-2	595	
				9	3.6	5	97	94	Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, some fossils, frequent styolites, Breaks @ 46.1 (slightly weathered), 48.2 (horizontal), 48.35 (weathered), 49.5 (horizontal). D-1, S-1, F-2		
			50	08:23 08:35 10	3.4	5	102	78	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, some fossils, styolites common, Breaks @ 50.0 (horizontal), 50.15 (horizontal), 50.6 (sub-vertical), 50.95 (horizontal), 51.0-51.2 (vertical), 51.25 (weathered), 51.45 (weathered), 51.8 (high angle), 53.35 (horizontal), 54.1 (sub-vertical). D-1, S-1-2, F-2-3	590	

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Manlius			55	08:52 09:03 11 09:10	3.5	2	95	42	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, fossils and styolites common, Breaks @ 55.05 (weathered), 55.4-55.7 (high angle), 56.2-56.5 (high angle, clay filled), 56.55 (horizontal). D-2, S-1-2, F-3	585	
	Olney			09:26 12 09:29	2.5	1.2	100	100	Limestone from 56.9-57.0, SAA. Dolostone, medium light gray (N6), thick bedded. D-1, S-1, F-1 End of core @ 58.1' bgs		Olney Limestone-Dolostone contact @ 57.0' bgs (583.8' amsl)

O'BRIEN & GERE

CORE LOG

PT-INJ-2

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 25.5 feet S of PW-12

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 17.5 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 54.2 ft. bgs

COORDINATES: N1064175.094 E816589.014
GROUND ELEV: 637.9
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/29/2012-9/25/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635 630	
			10 15			9.5			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 15.5' bgs. Set 6" steel casing to 17.5' bgs.	625	Top of Bedrock @ 15.5' bgs (622.4' amsl)
Bedrock	Bedrock										
			20 25						Reamed through bedrock to set shallow bedrock casing utilizing 5-7/8" roller bit. Set 4" shallow bedrock casing to 40.0' bgs. Seat spin-joint casing with drive shoe to 40.2' bgs.	620 615	

O'BRIEN & GERE

CORE LOG

PT-INJ-2

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Bedrock	Bedrock		30 35			22.7				610 605 600	
Manlius	Olney		40	09:05 1 09:26	4.2	5	100	52	Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, moderately fractured, occasional fossils, styolites common, Breaks @ 40.9 and 41.6 (both horizontal), 41.9 (sub-vertical), 42.4 (sub-vertical), 42.5 (sub-vertical), 43.3 (horizontal), 43.15-44.6 (vertical, weathering residue), 44.85-45.05 (shattered). D-1, S-1-2, F-2	595	
			45	09:40 2 09:57	3.4	5	58	40	Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, styolites common, Breaks @ 45.2-45.45 (crushed), 45.45-46.15 (vertical), 46.15, 46.75, and 47.45 (all horizontal), 47.8 (clayey). D-1, S-1-2, F-3	590	
			50	10:15 3 10:26	3.7	3	171.7	77	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, occasional fossils, styolites, Breaks @ 50.35 (horizontal), 51.35 (horizontal, shaley), 51.55-51.75 (shattered), 52.1 (horizontal), 52.9 (sub-vertical). D-1, S-1, F-2	585	
Manlius	Olney			10:44 4 10:47	3	1	95	100	Limestone from 53.2-53.3, SAA. Dolostone, medium light gray (N6), fine grained, thick bedded. D-1, S-1, F-2		Olney Limestone-Dolostone contact @ 53.3' bgs (584.6' amsl)

End of core @ 54.2' bgs

O'BRIEN & GERE

CORE LOG

PT-INJ-3

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. D'Annibale

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 22 feet SSE of PW-4

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 18.5 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 56.3 ft. bgs

COORDINATES: N1064160.974 E816609.214
GROUND ELEV: 640.2
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 9/10/2012-10/1/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	640 635	
			10 15			10.5			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 16.5' bgs. Set 6" steel casing to 18.5' bgs.	630 625	Top of Bedrock @ 16.5' bgs (623.7' amsl)
Bedrock	Bedrock		20 25						Reamed through bedrock to set shallow bedrock casing utilizing 5-7/8" roller bit. Set 4" shallow bedrock casing to 41.5' bgs.	620 615	

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

CORE LOG

PT-INJ-3

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Bedrock	Bedrock		30			23				610	
			35							605	
			40							600	
Onondaga	Edgecliff			10:13 1 10:26	4.1	3.2	70.3	79	Limestone, medium light gray (N6), medium grained, medium bedded, pyrite, Break @ 41.85 (high angle). D-2, S-1, F-2 Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, fossils and styolites common, Breaks @ 42.8 (shaley), 43.4 (shaley), 43.55 (shaley), 43.8-44.05 (shattered).		Edgecliff-Olney contact @ 42.3' bgs (597.9' amsl)
Manlius	Olney		45	10:37 2 10:55	3.6	5	98	77	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, occasional fossils, frequent styolites, Breaks @ 45.1 (horizontal), 45.7 (weathered), 46.9 (horizontal), 47.1 (shaley), 47.25 (shaley), 47.4 (weathered), 48.55 (shaley), 49.1 (horizontal), 49.3 (horizontal). D-2, S-1, F-2	595	
			50	11:05 3 11:24	3.8	5	98	78	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, fossils and styolites common, Breaks @ 49.85 (horizontal), 50.35-50.45 (shattered), 52.2 (horizontal), 52.85 (horizontal), 53.45 (horizontal), 53.45-54.05 (vertical, core shattered at basal end). D-2, S-1, F-2	590	
Manlius	Olney		55	11:25 4 11:43	11.3	1.6	115.6	100	Limestone from 54.7-55.9, SAA Break @ 54.75 (horizontal). Dolostone, medium light gray (N6). D-1, S-1, F-1 End of core @ 56.3' bgs	585	Olney Limestone-Dolostone contact @ 55.9' bgs (584.3' amsl)

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-INJ-4

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 17 feet W of PW-4

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 18 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 55.8 ft. bgs

COORDINATES: N1064140.254 E816605.134
GROUND ELEV: 638.6
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/30/2012-9/25/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635	
			10 15			10			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 16.0' bgs. Set 6" steel casing to 18.0' bgs.	630 625	Top of Bedrock @ 16.0' bgs (622.6' amsl)
Bedrock	Bedrock		20 25						Reamed through bedrock to set shallow bedrock casing utilizing 5-7/8" roller bit. Set 4" shallow bedrock casing to 40.5' bgs.	620 615	

O'BRIEN & GERE

CORE LOG

PT-INJ-4

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Bedrock	Bedrock		30 35 40			22.5				610 605 600	
Onondaga Manlius	Edgecliff Olney			13:09 1 13:26	4	4.3	98.8	89	Limestone, medium light gray (N6), medium bedded, some stylolites, pyrite. Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, occasional fossils, styolites common, Breaks @ 41.2 (contact), 42.7 (horizontal), 43.0 (horizontal, shaley), 43.8 (horizontal).	595	Edgecliff-Olney contact @ 41.2' bgs (597.4' amsl)
Manlius	Olney		45	13:39 2 13:59	4	5	102	82	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, occasional fossils, frequent stylolites, Breaks @ 44.85 (weathered), 46.2 (weathered, shaley), 46.4 (weathered), 46.5 (weathered), 46.9, 47.6, 48.15, 49.0, 49.2, 49.3 (all horizontal), 49.4 (weathered, clayey). D-1, S-1, F-2	590	
			50	14:15 3 14:37	4.4	5	98	92	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, few fossils, occasional styolites, Breaks @ 51.2 (high angle, weathered), 52.6 (horizontal), 53.05 (weathered), 53.15 (weathered), 54.3 (high angle), and 54.4 (horizontal). D-1, S-1, F-2	585	
Manlius	Olney		55	14:55 4 15:00	5	1	100	100	Limestone from 54.8-54.9, SAA. Dolostone, medium light gray (N6), thick bedded, Break @ 55.3 (horizontal). D-1, S-1, F-2		Olney Limestone-Dolostone contact @ 54.9' bgs (583.7' amsl)

End of core @ 55.8' bgs

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

CORE LOG

PT-INJ-5

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: NE of PW-13, Approximately 35.5 feet SE of PW-1

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 18.7 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 57.3 ft. bgs

COORDINATES: N1064139.414 E816580.354
GROUND ELEV: 639.7
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 9/6/2012-10/1/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635	
			10 15			10.7			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 16.5' bgs. Set 6" steel casing to a depth of 18.7' bgs.	630 625	Top of Bedrock @ 16.5' bgs (623.2' amsl)
Bedrock	Bedrock		20 25						Reamed through bedrock to set shallow bedrock casing utilizing 5-7/8" roller bit. Set 4" shallow bedrock casing to 41.0' bgs.	620 615	

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-INJ-5

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Bedrock	Bedrock		30 35 40			22.3				610 605 600	
Onondaga Manlius	Edgecliff Olney			13:24 1 13:36	3.4	3.5	77.1	50	Limestone, medium light gray (N6), medium bedded, fossiliferous, Breaks @ 41.25 (high angle), 41.55 (weathered). Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, fossils common, Breaks @ 42.4 (weathered), 43.15 (horizontal), 43.55 (shattered). D-2, S-1, F-2		Edgecliff-Olney contact @ 42.2' bgs (597.5' amsl)
Manlius	Olney		45	13:45 2 14:07	4.4	5	98	82	Limestone, medium dark gray (N4) with bands of medium gray (N6) and dark gray (N3), fine grained, styolites and fossils common, Breaks @ 44.7-44.85 (shattered, weathered), 45.65 (horizontal), 46.5 (shaley), 47.55 (horizontal), 48.15 (shaley), 48.25-48.3 (shattered, weathered), 49.25 (horizontal). D-2, S-1, F-2	595	
Manlius	Olney		50	14:20 3 14:35	3	5	100	81	Limestone, medium dark gray (N4) with bands of medium gray (N6) and dark gray (N3), fine grained, fossils and styolites common, Breaks @ 49.8 (horizontal), 50.05 (horizontal), 51.15 (weathered), 51.3-51.4 (shattered, weathered), 52.0 (horizontal), 52.65 (high angle), 53.15 (sub-vertical, weathered), 54.25 (horizontal). D-2, S-1, F-2	590	
Manlius	Olney		55	14:45 4 14:50	3.3	1.5	100	100	Limestone, SAA, Breaks @ 55.0, 55.4 (both weathered). D-1, S-1, F-2	585	
Manlius	Olney			15:01 5 15:05	3.1	1.3	100	100	Limestone from 56.0-56.5, SAA. Dolostone. D-1, S-1, F-1 End of core @ 57.3' bgs		Olney Limestone-Dolostone contact @ 56.5' bgs (583.2' amsl)

O'BRIEN & GERE

CORE LOG

PT-INJ-6

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 19 feet E of PW-1

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 19.5 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 57.1 ft. bgs

COORDINATES: N1064160.634 E816570.674
GROUND ELEV: 640.4
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/31/2012-10/2/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	640 635	
			10 15			11.5			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 17.5' bgs. Set 6" steel casing to 19.5' bgs.	630 625	Top of Bedrock @ 17.5' bgs (622.9' amsl)
Bedrock	Bedrock	▦	20 25						Reamed through bedrock to set shallow bedrock casing utilizing 5-7/8" roller bit. Set 4" shallow bedrock casing to 41.5' bgs.	620 615	

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-INJ-6

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer, P. D'Annibale

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Bedrock	Bedrock		30 35 40			22				610 605 600	
Onondaga	Edgecliff			07:40 1 07:54	4.2	3.3	97	86	Limestone, medium light gray (N6), medium bedded, fossils common, Breaks @ 41.75 (horizontal), 42.2 (shaley, weathered). Limestone, medium dark gray (N4) with bands of dark gray (N3), fossils common, occasional styolites, Breaks @ 44.35 (horizontal). D-1, S-1, F-1		Edgecliff-Olney contact @ 43.0' bgs (597.4' amsl)
Manlius	Olney		45	08:01 2 08:21	4	5	102	77	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, frequent fossils and styolites, Breaks @ 44.9-45.35 (shattered, weathered), 46.0 (horizontal), 47.0 (horizontal), 48.35 (shaley), 48.5-48.65 (shattered, weathered), 48.9 (horizontal), 49.15 (horizontal), 49.6 (shaley), 49.65 (shaley). D-1, S-1, F-2	595	
			50	08:30 3 08:50	4	5	100	68	Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, frequent fossils, occasional styolites, Breaks @ 50.05 (clay filled), 50.05-50.45 (vertical), 50.95 (shaley), 50.95-51.15 (vertical), 52.35 (horizontal), 53.1-53.8 (vertical), 54.15 (horizontal). D-2, S-1, F-2	590	
			55	09:00 4 09:11	4.8	2.3	100	68	Limestone from 54.8-56.8, SAA, Breaks @ 54.9-55.05 (shattered, weathered), 55.25 (horizontal), 55.7 (high angle), 55.9 (high angle), 56.55 (high angle), 56.75 (horizontal). D-2, S-1, F-2	585	
Manlius	Olney								Dolostone, medium light gray (N6). End of core @ 57.1' bgs		Olney Limestone-Dolostone contact @ 56.8' bgs (583.6' amsl)

CORE LOG

PT-MW-1

PROJECT:	Powerex RI/FS Work Plan Add. No. 4	**PROJECT LOCATION:**	Former Powerex, Inc. Facility, Auburn, N.Y.
CLIENT:	General Electric Company	**JOB NUMBER:**	49543.004.402
INSPECTOR:	R. Hornung, P. Freyer	**HOLE LOCATION:**	Approximately 10 feet SE of DGC-12B

PURPOSE:	EISB Pilot Test Phase 1	**CASING DIAMETER:**	6 in.	**COORDINATES:**	N1063818.494 E816348.604
DRILLING CONTRACTOR:	Parratt Wolff, Inc.	**CASING LENGTH:**	17.7 ft.	**GROUND ELEV:**	637.4
DRILLER:	Mickey Marshall	**HOLE DIAMETER:**	0.315 ft.	**HORIZ. DATUM:**	NAD 83
DRILL RIG TYPE:	CME 850	**CORE TYPE:**	HQ3 Core	**VERT. DATUM:**	NGVD 1929
LICENSE NUMBER:	NYRDO1621	**TOTAL DEPTH:**	65.8 ft. bgs	**START/END DATE:**	8/27/2012-9/11/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635 630	
			10 15			9.8			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of weathered bedrock @ 15.5' bgs. Top of competent bedrock at 16.0' bgs. Set 6" steel casing to 17.7' bgs. Seat spin-joint casing with drive shoe to 17.8' bgs.	625 620	Top of Bedrock @ 15.5' bgs (621.9' amsl)
Onondaga	Moorehouse		20	09:36 1 10:11	11.7	3	91.7	76	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, thinly bedded, very few brachiopod fossils, chert nodules from 17.95-18.05, 18.2-18.35, 18.55-18.75, 18.95-19.15, 19.4-19.55, and 19.85-20.2, Breaks @ 17.9 (horizontal, faint weathering residue), 18.1 (horizontal, faint weathering residue, trace clay and grains), 18.3 (horizontal, fresh), 18.8-18.9 (low angle), 20.0 (horizontal, along chert nodule), 20.55 (horizontal, fresh). D-2, S-2, F-2-3		While coring Run #1, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.
				10:30 2	5.8	5	103	11	Limestone, dark gray (N3) to medium dark gray (N4), fine grained, thinly bedded to very thinly bedded, severely fractured throughout run, brachiopod fossils, some fossil burrows, pyrite, Breaks @ 21.35-22.3 (multiple, horizontal, high angle, low angle, slightly weathered, fracture zone), 22.45-25.2 (multiple, sub-vertical, vertical, low angle, some re-cemented,	615	While coring Run #2, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.

CORE LOG

PT-MW-1

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
				10:59					weathered, trace clay and grains, fracture zone). D-3, S-3, F-4-5		
			30	11:38 3 12:03	5	5	102	28	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, thinly bedded, very fractured, few crinoid stems and brachiopod fossils, fossil rich zone from 29.4-29.75 (brachiopods, burrows, shaley), styolites, pitting from 29.2-29.35, Breaks @ 25.8 (fresh), 26.45-26.65 (with gravel fragments, trace clay), 26.65-28.6 (multiple, vertical, sub-vertical, clay, slightly weathered, gravel fragments), 28.6-29.35 (re-cemented), 29.35 (low angle, clay and grains), 29.4-29.6 (high angle, clay and grains), 29.6-30.8 (multiple, vertical, sub-vertical, clay and grains). D-2, S-2, F-4	610	
Onondaga	Nedrow		35	13:00 4 13:31	6.2	5	97	24	Limestone, medium dark gray (N4) to dark gray (N3), fine grained, thinly bedded, high bioturbation (brachiopod fossils, burrows), shaley from 30.9-31.9, pyrite, Breaks @ 30.9-33.1 (multiple, horizontal, high angle, gravel fragments), 33.1-33.2 (horizontal, high angle, slightly weathered), 33.5 (low angle, fresh), 33.75 (gravel fragments, trace residual clay and grains), 34.25 (slight weathering residue), 34.4-34.5 (gravel fragments, horizontal), 34.85-34.95 (horizontal, clay rich), 35.6 (horizontal, trace clay and grains), 35.7 (trace clay and grains). D-2, S-2, F-4	605	Moorehouse-Nedrow contact @ 30.8' bgs (606.6' amsl)
			40	13:41 5 14:03	4.4	5	97	48	Limestone, medium dark gray (N4) to medium gray (N5) at basal end, fine grained, thinly bedded, some brachiopod fossils, burrows, few crinoid stems, pyrite, Breaks @ 35.8 (fresh), 36.2 (gravel fragments, trace clay and grains), 37.8-40.5 (multiple, horizontal, low angle, high angle, fracture zone, many with gravel fragments), 40.5 (horizontal, slight weathering residue), 39.5-40.65 (multiple, horizontal, vertical, low angle, many with pebble fragments, slightly weathered), 40.75 (horizontal, trace clay and grains). D-2, S-2, F-4	600	While coring Run #5, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.
Onondaga	Edgecliff			14:25 6 14:48	5.8	4	110	68	Limestone, medium gray (N5), fine grained, core shattered from 40.8-41.2. D-1-4, S-1-2, F-3 Limestone, medium gray (N5) to medium light gray (N6), medium grained, thin-medium bedded, fossiliferous (crinoid stems, brachiopods), argillaceous from 41.7-43.7, styolites at basal end, pyrite, Breaks @ 41.2-41.7 (vertical, weathering residue, trace clay and grains), 42.9 (trace clay and grains), 43.7 (gravel fragments), 43.8 (gravel fragments, trace clay and grains), 44.95 (gravel fragments, weathering residue).	595	Nedrow-Edgecliff contact @ 41.2' bgs (596.2' amsl)
			45	15:11 7 15:17	6	1	90	0			
						1			Limestone, medium dark gray (N4), medium grained, thinly bedded, Breaks @ 45.25-45.7 (vertical). D-2, S-2, F-4		
			50	08:22 8 08:40	4.5	4	105	88	Utilized 5-7/8" roller bit to advance through bedrock from 17.8-46.8 and set 4" shallow bedrock casing to a depth of 46.8' bgs. Limestone, medium gray (N5), medium grained, medium bedded, very slightly fractured, fossiliferous (crinoid platelets, tabulate corals throughout), pyrite, Breaks @ 47.15-47.3 (high angle), 48.6 (sub-horizontal fracture, solution modified, residual clay), 49.95 (horizontal, solution modified), lost approximately 100 gallons of drilling water at 48.6. D-2, S-1, F-2	590	
				08:58					Limestone from 50.8-51.0, SAA, Break @ 50.95 (crushed to medium-coarse gravel sized	585	Edgecliff-Olney contact @ 51.0' bgs (586.4' amsl)

O'BRIEN & GERE

CORE LOG

PT-MW-1

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Manlius	Olney		55	9 09:28	6	5	92.6	31	sub-angular fragments). D-2, S-2, F-3 Limestone, medium dark gray (N4) with frequent horizontal laminations, thin-medium bedded, fine grained, slightly fractured, styolites common, sparse fossil debris throughout, soft sediment deformation feature at 54.55, Breaks @ 51.2, 51.35 (low angle), 52.15 (crushed to sub-rounded gravel), 52.15-52.6 (sub-vertical fracture, weathered), 52.6, 52.7 (horizontal), 53.6 (core crushed to sub-rounded medium gravel), 53.8 (sub-horizontal, non-planar), 53.9 (low angle), 53.9-54.4 (sub-vertical), 54.6 (sub-horizontal), 55.15-55.35 (sub-vertical), 55.35 (sub-horizontal, weathered along styolite).		
			60	09:38 10 09:57	3.9	4.9	107.1	59	Limestone, medium dark gray (N4) with dark gray (N3) laminations common, thinly bedded, fine grained, slightly fractured, fossiliferous (crinoids, brachiopods visible, often in thin beds), shaley partings, styolites and other soft sediment deformation features throughout, Breaks @ 55.93 (weathered), multiple breaks along shaley partings at 56.0, 56.3, 56.5, 56.7, 57.25, 57.8, 58.75, 58.95 (weathered), 59.1, 59.4-60.2 (several, high angle, low angle). D-2, S-2, F-3	580	
				10:16 11 10:39	7.7	3	90	0	Limestone, medium dark gray (N4) with dark gray (N3) laminations, fine grained, few coarse grained lenses, thinly bedded, moderate-severely fractured, sparsely fossiliferous, few styolites, Breaks @ 60.95 (horizontal), 60.95-61.6 (sub-vertical), 61.9 (weathered), 62.35-63.2 (sub-vertical), 63.5-63.9 (core crushed). D-1, S-2, F-5	575	
Manlius	Olney		65	10:59 12 11:07	3.8	2.1	119	50	Limestone from 63.7-64.9, SAA, Breaks @ 64.0 (horizontal, weathered), 64.35, 64.5 (low angle), 64.8 (horizontal, weathered). Dolostone, medium light gray (N6) to medium gray (N5), fine grained, thick bedded, very sparsely fossiliferous, Break @ 65.0-65.7 (low angle). D-1, S-1, F-3		Olney Limestone-Dolostone contact @ 64.9' bgs (572.5' amsl)

End of core @ 65.8' bgs

O'BRIEN & GERE

CORE LOG

PT-MW-2

PROJECT:	Powerex RI/FS Work Plan Add. No. 4	**PROJECT LOCATION:**	Former Powerex, Inc. Facility, Auburn, N.Y.
CLIENT:	General Electric Company	**JOB NUMBER:**	49543.004.402
INSPECTOR:	R. Hornung, P. Freyer	**HOLE LOCATION:**	Approximately 20 feet SW of PW-5, 20 feet S of DGC-9B

PURPOSE:	EISB Pilot Test Phase 1	**CASING DIAMETER:**	6 in.	**COORDINATES:**	N1063980.204 E816537.324
DRILLING CONTRACTOR:	Parratt Wolff, Inc.	**CASING LENGTH:**	18.8 ft.	**GROUND ELEV:**	637.9
DRILLER:	Mickey Marshall	**HOLE DIAMETER:**	0.315 ft.	**HORIZ. DATUM:**	NAD 83
DRILL RIG TYPE:	CME 850	**CORE TYPE:**	HQ3 Core	**VERT. DATUM:**	NGVD 1929
LICENSE NUMBER:	NYRDO1621	**TOTAL DEPTH:**	59.8 ft. bgs	**START/END DATE:**	8/28/2012-9/11/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635 630	
			10 15			10.8			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of weathered bedrock at 15.7' bgs. Top of competent bedrock at 16.0' bgs. Set 6" steel casing to 18.8' bgs.	625	
										620	Top of Bedrock @ 15.7' bgs (622.2' amsl)

CORE LOG

PT-MW-2

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Moorehouse		20	09:39 1 09:55	10.7	1.5	86.7	0	Limestone, medium dark gray (N4), fine grained, medium bedded, severely fractured, Breaks @ 19.0-20.3 (multiple horizontal joints (>4), vertical, weathered, core shattered), core block at 20.3. D-2, S-2, F-5		While coring Run #1, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.
				10:22 2	8.8	4.8	85.4	12.5	Limestone, medium dark gray (N4), fine grained, medium bedded, severely fractured from 20.3-23.8, few fossils and burrows, core crushed to medium gravel from 20.3-23.8, Breaks @ 23.9 (low angle), 24.1 (low angle). D-2, S-2, F-5	615	
Onondaga	Nedrow		25	11:04					Limestone, dark gray (N3), argillaceous lens with fossil debris at 24.6, Breaks @ 24.2 (weathered), 24.2-24.3 (core crushed), 24.9 (low angle).		Moorehouse-Nedrow contact @ 24.2' bgs (613.7' amsl)
				11:17 3 11:27	50	0.2	150	0	Limestone, dark gray (N3), fine grained, thin-medium bedded, severely fractured, fossils, core crushed, core block at 25.3. D-2, S-2, F-5		
				11:33 4 11:39	30	0.2	100	0	Limestone, dark gray (N3), fine grained, severely fractured, core crushed, core block at 25.5. D-2, S-2, F-5		
			30	11:52 5 12:29	7.6	4.9	85.7	24.5	Limestone, dark gray (N3) to medium gray (N5), moderately to severely fractured, brachiopods (some pyritized), burrows, pyrite, Breaks @ 25.5-26.85 (core crushed), 26.85 (slightly weathered), 27.0 (low angle), 27.25 (low angle), 28.05 (low angle), 28.05-28.35 (crushed), 28.35 (low angle), 28.55, 28.65 (horizontal), 29.7 (weathered), 30.05-30.4 (multiple horizontal breaks). D-2, S-2, F-4	610	
			35	13:16 6 13:41	5	5	100	40	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, moderately fractured, portions crushed, brachiopods, crinoids, burrows, Breaks @ 30.5 (weathered), 31.1, 31.55, 31.6, 31.6-31.8 (low angle), 31.8-32.05 (low angle), 31.95-32.2 (low angle), 32.3-32.9 (multiple, high angle), 32.9 (horizontal), 33.35-34.4 (multiple, high angle), 34.95-35.15 (two, low angle). D-1, S-1, F-3	605	
				13:50 7 14:02	6	2	100	75	Limestone, medium dark gray (N4), SAA, Break @ 35.55. D-2, S-1, F-2 Limestone, medium gray (N5), fine grained, slightly fractured, fossil debris (crinoid columnals), portions more argillaceous, Breaks @ 35.65, 36.4, 36.5, 37.15 (horizontal, non-planar), core crushed from 35.55-35.65 and 36.4-36.5.		Nedrow-Edgecliff contact @ 35.6' bgs (602.3' amsl)
				14:18 8	4.7	3	100	73	Limestone, medium gray (N5), fine-medium grained, slightly fractured, portions argillaceous above 38.4, below 38.4 fossil content increases considerably, Breaks @ 38.25 (core crushed), 38.45 (weathered), 39.9	600	

O'BRIEN & GERE	CORE LOG	PT-MW-2

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Edgecliff		40	14:32					(weathered), 40.0 (weathered), 40.2-40.5 (high angle, continuation into following run). D-1, S-1, F-1		
				14:50 9 14:56	6	1	105	100	Limestone, medium gray (N5), fine grained, fossil debris, portions argillaceous, few stylolites.		
			45	13:29 10 13:46	3.9	4.4	90.9	72	Utilized 5-7/8" roller bit to advance through bedrock from 18.8-41.4 and set 4" shallow bedrock casing to a depth of 41.4' bgs. Limestone, medium gray (N5), fine-medium grained, medium bedded, slightly-moderately fractured, few styolites, fossiliferous (crinoids, tabulate corals), minor pitting along sub-vertical fractures, Breaks @ 41.9 (horizontal, very slightly weathered), 44.4-44.5 (solution modified, medium-coarse sub-rounded gravel sized fragments), 44.9, 45.0, 45.2 (horizontal), 45.2-45.4 (sub-vertical). D-1, S-1, F-2	595	
Manlius	Olney		50	13:58 11 14:19	4.2	5	68	47	Limestone, medium gray (N5) to medium dark gray (N4), fine grained with few lenses medium grained, thinly bedded, moderately fractured, sparsely fossiliferous (crinoids, brachiopods) with few lenses densely fossiliferous, styolites and portions argillaceous, Breaks @ 46.0-46.2 (high-low angle), 46.5 (horizontal), 46.9 (low angle), 47.55 (possible 0.2 void), 48.0, 48.1, 48.35, 48.5 (sub-horizontal, very slightly weathered). D-1, S-1, F-2-3	590	Edgecliff-Olney contact @ 45.8' bgs (592.1' amsl)
			55	14:34 12 14:59	5	5	122	49	Limestone, medium gray (N5) to medium dark gray (N4), fine grained with lenses of medium grained fossiliferous material, thinly bedded, moderately fractured, fossiliferous (crinoids, brachiopods), stylolites, wavy/argillaceous laminations common, Breaks @ 49.9, 50.25-50.35 (high angle, possibly mechanical) 51.3, 51.4, 51.5 (horizontal), 52.2 (shaley parting), 52.5, 52.5-52.6 (low angle, slickensides), 53.0, 53.6 (horizontal), 54.0-54.05 (low angle), 54.0-54.75 (high angle), 54.9-55.1 (high angle). D-1, S-1, F-3	585	
				15:48 13 16:00	4	3	101.7	26	Limestone, medium gray (N5) to medium dark gray (N4), fine grained with coarser fossiliferous lenses, thinly bedded, fossiliferous, styolites, portions argillaceous, minor pitting, Breaks @ 56.0, 56.1, 56.5 (horizontal), 56.7-56.85 (multiple horizontal breaks), 57.1 (horizontal), 57.6-57.65 (low angle), 57.9, 58.0 (horizontal), 58.4-58.75 (high angle), 58.6-58.8 (core mostly crushed). D-1, S-1, F-4	580	
Manlius	Olney			16:13 14 16:18	5	1	70	35	Limestone from 58.8-59.4, SAA, Breaks @ 58.9, 59.0, 59.4 (core overcored). D-1, S-1, F-1-2		
									Dolostone, medium gray (N5), fine grained, medium bedded, slightly fractured. End of core @ 59.8' bgs		Olney Limestone-Dolostone contact @ 59.4' bgs (578.5' amsl)

O'BRIEN & GERE

CORE LOG

PT-MW-3

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 20 feet S of PW-4, 20 feet SE of PT-INJ-4

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Mickey Marshall/Mark Eaves
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 17 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 56.5 ft. bgs

COORDINATES: N1064118.454 E816618.344
GROUND ELEV: 638.9
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/29/2012-9/20/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635	
			10 15			9			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of competent bedrock at 15.7' bgs. Set 6" steel casing to 17.0' bgs.	630 625	Top of Bedrock @ 15.7' bgs (623.2' amsl)

O'BRIEN & GERE

CORE LOG

PT-MW-3

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Moorehouse			09:25 1 09:43	8.6	2.1	95.2	43	Limestone, medium dark gray (N4), fine grained, thin-medium bedded, slight to severely fractured, trace fossils, chert nodules, Breaks @ 17.0-17.8 (several high angle fractures, portions of core crushed to fine-medium sub-angular gravel sized fragments), 17.8 (horizontal, solution modified), core block at 19.1. D-1-2, S-1-2, F-2-5		
				11:04 2 11:08	20	0.2	200	0	Limestone, SAA, severely fractured, core fragments sub-rounded.	620	
			20	11:22 3 11:45	4.6	5	101	80	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, medium bedded, slightly fractured, fossiliferous (crinoids, brachiopods), pyrite, Breaks @ 21.15 (horizontal), 21.95 (horizontal, shaley), 22.2-22.25 (shaley, crushed to sub-angular fine-medium gravel), 22.35 (solution modified, shaley). D-2, S-1, F-1		
Onondaga	Nedrow								Limestone, dark gray (N3), fine grained, thinly bedded, moderately-severely fractured, fossiliferous, horizontal burrows, Breaks @ 23.75 (solution modified), 23.75-23.95 (sub-vertical), 23.95 (shaley), 24.1 (shaley), 24.1-24.3 (high angle).	615	Moorehouse-Nedrow contact @ 23.3' bgs (615.6' amsl)
			25	12:56 4 13:14	3.6	5	98	54	Limestone, medium dark gray (N4) to medium gray (N5), fine grained with few lenses of medium grained, thin-medium bedded, slightly to moderately fractured, fossiliferous (brachiopods), horizontal burrows common, pyrite, Breaks @ 24.45, 24.5 (horizontal, shaley), 24.9-25.3 (high angle, multiple), 27.2 (solution modified), 28.0, 28.5, 28.75 (shaley), 28.75-29.0 (sub-vertical with multiple horizontal and low angle), 29.1-29.2 (multiple). D-1-2, S-1-2, F-3	610	
			30	13:29 5 13:43	2.8	5	102	58	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, thin-medium bedded, moderate-slightly fractured, fossiliferous (brachiopods), horizontal burrows common, pyrite, Breaks @ 30.15 (two, both horizontal, closely spaced, shaley), 30.15-32.3 (sub-vertical, non-planar fracture), 32.8 (shaley). D-2, S-1, F-3		
									Limestone, medium gray (N5), medium grained, medium bedded, slightly fractured, fossiliferous (brachiopods, crinoids), Breaks @ 33.7-33.75 (horizontal, core crushed to fine-medium gravel).	605	Nedrow-Edgecliff contact @ 33.1' bgs (605.8' amsl)
			35	13:59					Limestone, medium gray (N5) to medium light gray (N6) with one dark gray (N3-N2) layer from 35.4-35.55, medium-coarse grained, fine-medium grained at 35.4-35.55, medium bedded, very slightly fractured, abundantly fossiliferous		

CORE LOG

PT-MW-3

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Edgecliff			6 14:22	4.6	5	95	85	(tabulate corals, brachiopods, possible orthocone cephalopod), portions argillaceous, Breaks @ 35.4, 35.55 (residual clay and grains), 36.9 (horizontal, non-planar), 38.45 (along carbonaceous parting). D-1-2, S-1, F-1	600	
			40	14:34 7 14:44	3.4	2.9	89.7	37	Limestone, medium gray (N5) to medium light gray (N6), medium bedded, severely fractured, fossiliferous (crinoids, tabulate corals, brachiopods), stylolites, pyrite, Breaks @ 40.4-41.75 (sub-vertical fracture, solution modified), 41.5-41.7 (high angle). D-1-2, S-1, F-4 Utilized 5-7/8" roller bit to advance through bedrock from 17.0-42.2 and set 4" shallow bedrock casing to a depth of 42.2' bgs.		
Manlius	Olney		45	09:40 8 10:02	7.9	2.8	96.4	54	Limestone from 42.2-42.5, SAA, abruptly overlying. Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, thin-medium bedded, slightly fractured, fossil material concentrated in medium grained bands, Breaks @ 42.8 (solution modified, moderate-severely weathered), 43.75 (horizontal, very slightly weathered), 44.0 (horizontal, fresh), 44.2 (solution modified, moderately weathered), 44.35 (horizontal, slightly weathered), 44.35-44.65 (high angle, fresh). D-2, S-1, F-3	595	Edgecliff-Olney contact @ 42.5' bgs (596.4' amsl)
			50	10:22 9 10:57	7	5	100	47	Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, thinly bedded, slightly-severely fractured, fossiliferous (most fossil debris concentrated in bands, minor amounts dispersed throughout core), Breaks @ 45.9-47.7 (multiple, high angle, sub-vertical, moderately weathered), 45.95 (horizontal, shaley, non-planar, slightly weathered), 46.0 (horizontal), 46.95 (horizontal, slightly weathered), 47.6, 47.7 (shaley, sub-rounded gravel sized fragments), 48.5, 48.8 (shaley), 49.65-49.7 (low angle, shaley, fresh). D-2, S-1, F-3	590	
			55	11:16 10 11:43	5.4	5	95	24	Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, thinly bedded, slightly-moderately fractured, fossiliferous (fossil debris concentrated in bands, minor amounts dispersed throughout the core), Breaks @ 50.1, 50.5 (horizontal, slightly weathered), 50.6 (horizontal, core crushed to fine-medium sub-angular gravel), 50.65-50.7 (low angle, slightly weathered), 51.65, 51.9 (horizontal, fresh), 52.25-52.9 (slightly to moderately weathered, high angle), 52.95-53.05 (low angle, slightly weathered), 53.4-53.55 (two, closely spaced, low angle, slightly weathered), 53.65-53.9 (high angle, fresh), 54.3 (shaley, core crushed), 54.3-54.75 (high angle, slightly weathered). D-2, S-1-2, F-4	585	

CORE LOG

PT-MW-3

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Manlius	Olney			11:58 11 12:08	6.7	1.5	113.3	0	Limestone from 55.0-56.1, SAA, very severely fractured, Breaks @ 54.75-55.65 (multiple, moderately weathered, high angle breaks). Dolostone, medium light gray (N6), fine grained, medium-thick bedded, sparsely fossiliferous, Breaks @ 55.65-56.5 (multiple, high angle, slightly weathered), 55.65 (horizontal, moderately weathered, solution modified), 55.9 (low angle, moderately weathered), 56.1 (horizontal, fresh). D-2, S-1-2, F-5 End of core @ 56.5' bgs		Olney Limestone-Dolostone contact @ 56.1' bgs (582.8' amsl)

O'BRIEN & GERE	CORE LOG	PT-MW-4

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 60 feet E of PW-4, 60 feet SW of OBG-6B

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Mickey Marshall/Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 16 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 54.8 ft. bgs

COORDINATES: N1064149.444 E816679.434
GROUND ELEV: 638
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/30/2012-9/19/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635	
Onondaga	Moorehouse		10 15			8.1			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of weathered bedrock at 13.2' bgs. Top of competent bedrock at 14.0' bgs. Set 6" steel casing to 16.0' bgs. Seat spin-joint casing with drive shoe to 16.1' bgs.	630 625	Top of Bedrock @ 13.2' bgs (624.8' amsl)
				14:29 1 14:46	28.3	0.6	100	0	Limestone, medium dark gray (N4), fine grained, thin-medium bedded, moderately fractured, sparsely fossiliferous, pyrite. D-1, S-1, F-4		While coring Run #1, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.
			20	14:59 2 15:16	4.6	3.7	95.9	20	Limestone, medium dark gray (N4), fine grained, thick bedded, severely fractured, sparsely fossiliferous (crinoids, possible ostracod), pyrite, Breaks @ 17.5-17.65 (core crushed, sub-rounded fragments), 17.65-19.95 (sub-vertical fracture, partially remineralized), 19.95-20.0 (two, closely spaced, horizontal). D-1, S-1, F-4	620	
				15:44 3	3.8	5	97	53	Limestone, medium dark gray (N4), fine grained, thin-medium bedded, slightly fractured, fossiliferous, pyrite, Breaks @ 20.4, 20.5 (horizontal), 20.7 (shaley). Limestone, dark gray (N3) to medium gray (N5), fine grained, medium bedded, slightly fractured, fossiliferous, horizontal burrows throughout, trace nodules, pyrite, Breaks @ 22.15-22.2 (two, horizontal, shaley), 22.35 (shaley), 22.6, 22.9, 23.0 (horizontal), 23.8 (horizontal),	615	Moorehouse-Nedrow contact @ 21.9' bgs (616.1' amsl)

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Nedrow			16:03					24.3-24.4 (low angle). D-1, S-1, F-3		
			30	16:18 4 16:37	3.8	5	105	80	Limestone, medium dark gray (N4) to medium gray (N5), medium bedded, slightly fractured, sparsely fossiliferous, horizontal burrows throughout, pyrite, Breaks @ 25.4 (horizontal), 25.7 (horizontal, shaley), 27.15-27.2 (core crushed, shaley, fine fissle fragments), 28.45, 28.55 (horizontal), 29.2-29.35 (low angle), 29.9 (horizontal), 24.65-24.75 (low angle). D-1-3, S-1, F-2	610	
Onondaga	Edgecliff		35	08:05 5 08:28	4.6	5	102	80	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, thinly bedded, horizontal burrows, pyrite. Limestone, medium gray (N5), medium grained with argillaceous portions, more fine grained with sandy lenses from 33.85-34.2, medium bedded, slightly fractured, fossiliferous, Breaks @ 31.2 (horizontal, solution modified), 31.2-31.3 (low angle), 32.15-32.2 (horizontal, non-planar, solution modified), 34.2-34.3 (core crushed to sub-angular fine-medium gravel), 34.8, 34.85 (horizontal), 34.95-40.05 (multiple, closely spaced, horizontal). D-1-2, S-1, F-1-2	605	Nedrow-Edgecliff contact @ 31.2' bgs (606.8' amsl)
			40	08:38 6 08:54	3.5	4.6	95.7	45	Limestone, medium gray (N5), medium grained, medium bedded, very severely fractured from 35.5-37.8, fossiliferous (tabulate corals, crinoids, brachiopods), no fractures below 37.8, Breaks @ 35.6 (horizontal, solution modified), 35.6-37.35 (multiple, sub-vertical fractures, pitting, solution modification), 37.5-37.8 (high angle, solution modified). D-1-2, S-1, F-1-4 Utilized 5-7/8" roller bit to advance through bedrock from 16.1-40.0 and set 4" shallow bedrock casing to a depth of 40.0' bgs.	600	
Manlius	Olney		45	14:38 7 14:52	3.1	4.5	100	50	Limestone, medium gray (N5), medium grained, medium bedded, slightly fractured, abundantly fossiliferous, abrupt pyrite along contact, Breaks @ 40.25 (low angle), 40.7 (horizontal, solution modified, matrix weakened). Limestone, medium dark gray (N4) with bands of dark gray (N3), fine grained, thin-medium bedded, moderately fractured, fossiliferous (sparsely with few bands of dense fossil material), styolites common, Breaks @ 41.3-41.35 (low angle, solution modified), 42.1 (shaley), 42.15-42.65 (high angle, multiple parallel fractures, core crushed from 42.5-42.65), 42.8 (low angle), 43.35 (horizontal, along stylolite), 43.35-43.9 (high angle, severely weathered), 44.0-44.35 (high angle, severely weathered). D-2, S-1, F-2-3	595	Edgecliff-Olney contact @ 40.7' bgs (597.3' amsl)
			50	15:07 8 15:25	3.5	5.2	100	70	Limestone, medium dark gray (N4) with bands of dark gray (N3) and medium gray (N5), fine grained with few 0.05-0.1 layers of medium grained (mostly fossil debris), slightly fractured with two 0.05 intervals of core crushed, fossils mostly in isolated bands, stylolites, shaley carbonaceous partings common, Breaks @ 44.9 (low angle), 45.95-46.1 (multiple, horizontal, core crushed from 46.0-46.1), 46.9 (horizontal, non-planar, shaley), 47.45 (shaley), 47.95 (horizontal), 48.9-48.95 (core crushed to fine-medium gravel), 48.95-49.7 (sub-vertical, solution modification). D-2, S-1, F-2	590	
				15:42 9	4.3	5.1	101	72	Limestone, medium dark gray (N4) with bands of dark gray (N3) and medium gray (N5), fine grained with medium		

CORE LOG

PT-MW-4

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Manlius	Olney			16:04					grained band consisting of fossil debris, thin-medium bedded, slightly fractured, bands of fossils abruptly overlying sparsely dispersed throughout the core, Breaks @ 49.95 (horizontal, non-planar), 52.0-52.8 (high angle, minor staining, matrix along plane weakened, solution modified), 50.75-50.9 (high angle, fresh), 52.95 (horizontal, moderately weathered), 53.7 (low angle, slighty weathered). D-2, S-1, F-2 Dolostone, medium light gray (N6), fine grained. End of core @ 54.8' bgs		Olney Limestone-Dolostone contact @ 54.3' bgs (583.7' amsl)

O'BRIEN & GERE

CORE LOG

PT-MW-5

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 20 feet SW of DGC-8B, 20 feet NW of OBG-2S

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Mickey Marshall/Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 16.6 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 54.4 ft. bgs

COORDINATES: N1064173.644 E816524.194
GROUND ELEV: 637.2
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/31/2012-9/17/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 6.0' bgs utilizing air knife with vac truck. Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635 630	
			10			8.6			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of weathered bedrock at 15.0' bgs. Top of competent bedrock at 15.5' bgs. Set 6" steel casing to 16.6' bgs.	625	
		▨	15								Top of Bedrock @ 15.0' bgs (622.2' amsl)

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-MW-5

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Moorehouse			16:02 1 08:10	-157.3	3	100	0	Limestone, medium light gray (N6) to medium gray (N5), thinly bedded, severely fractured, few black styolites, core shattered 16.6-16.85, Breaks @ 16.85 (horizontal), 16.85-19.15 (vertical, orange staining, weathering residue, calcite precipitation, trace fine-medium gravel fragments, trace clay and grains), 17.85 (horizontal, weathering residue), 19.15 (fine gravel fragments, trace clay and grains), 19.25 (trace clay and grains). D-2-3, S-2, F-5	620	While coring Run #1, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.
			20	08:32 2 08:51	3.8	5	98	43	Limestone, medium light gray (N6) to medium gray (N5), medium bedded, severely fractured, few fossils (brachiopods), Breaks @ 19.6-20.6 (vertical fracture, weathering residue, calcite precipitation), 20.7 (horizontal, shaley partings). D-2, S-2, F-3		Moorehouse-Nedrow contact @ 20.7' bgs (616.5' amsl)
Onondaga	Nedrow								Limestone, medium dark gray (N4) to dark gray (N3), thinly bedded, very fractured, fossiliferous (frequent burrows), black stylolites, pyrite, Breaks @ 20.9-21.05 (core shattered), 21.05 (fresh), 21.5 (few gravel fragments), 22.2-22.25 (low angle, fresh), 22.65 (along shaley parting), 23.15, 23.8, 24.0, 24.25 (all fresh), 24.6 (trace clay).	615	
			25	09:04 3 09:24	4	5	100	28	Limestone, medium gray (N5) to medium dark gray (N4), thinly bedded, very fractured, sparse fossils (brachiopods), few burrows, pyrite, Breaks @ 24.7 (horizontal, weathering residue), 24.6-24.7 (core shattered), 24.7-25.25 (vertical, fresh), 25.5 (trace clay and grains), 25.95 (weathering residue), 26.6-26.65 (low angle, coarse gravel fragments), 27.3 (low angle, clay and grains), 27.45-27.5 (high angle), 27.65-27.85 (sub-vertical, coarse gravel fragments), 27.8-28.1 (core shattered), 28.0-28.1 (high angle, coarse gravel fragments), 28.45 (two, horizontal, low angle, fresh), 28.75 (low angle), 29.35-29.6 (core shattered). D-2-3, S-2-3, F-3	610	
Onondaga	Edgecliff		30	09:49 4 10:11	4.4	5	100	81	Limestone, medium dark gray (N4), SAA. Limestone, medium gray (N5) to medium light gray (N6) with black wavy laminates, medium grained, medium bedded, moderately fractured, fossiliferous (crinoid stems, brachiopods), argillaceous from 30.4-32.7, pyrite, Breaks @ 29.9-30.0 (high angle, fresh), 30.1 (low angle, weathering residue), 30.35 (horizontal, weathering residue), 31.2-31.3 (trace clay and grains, coarse gravel fragments), 33.0 (low angle, trace clay and grains, coarse angular gravel), 33.1 (horizontal, weathering residue), 34.6 (horizontal, clay and grains). D-2, S-1-2, F-2	605	Nedrow-Edgecliff contact @ 29.8' bgs (607.4' amsl)
			35	10:35					Limestone, medium gray (N5) to medium light gray (N6) with black wavy laminates from 34.6-35.4, medium bedded, black		

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE	CORE LOG	PT-MW-5

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
				5 10:51	3.7	4.3	98.8	94	stylolites common, fossiliferous (crinoid stems, coral), pyrite, Breaks @ 34.6 (horizontal, clay and grains), 36.1 (low angle, clay and grains, weathering residue, fine pebble fragments), 36.25-36.35 (high angle, trace clay and grains, weathering residue), 38.75 (horizontal, crystalline, weathering residue), 38.85 (horizontal, clay and grains). D-2, S-1, F-1	600	
						0.1			Utilized 5-7/8" roller bit to advance through bedrock from 16.6-39.0 and set 4" shallow bedrock casing to a depth of 39.0' bgs.		
				14:48 6 14:52	4.4	0.9	100	72	Limestone, medium gray (N5) to medium light gray (N6), medium-coarse grained, slightly fractured, abundantly fossiliferous, Break @ 39.2 (core crushed). D-1, S-1, F-2 Limestone, medium dark gray (N4), fine grained, thinly bedded, slightly fractured.		Edgecliff-Olney contact @ 39.8' bgs (597.4' amsl)
Manlius	Olney		40	15:09 7 15:29	4	5	100	90	Limestone, medium dark gray (N4) with alternating bands of medium gray (N5) and dark gray (N3), fine grained with few medium grained lenses, medium bedded, very slightly fractured, sparsely fossiliferous, stylolites common, Breaks @ 41.3 (horizontal, shaley), 42.1-42.15 (horizontal, core crushed to fine-medium sub-angular gravel sized fragments), 43.95 (horizontal, non-planar, along stylolite), 44.2-44.3 (low angle). D-1, S-1, F-2	595	
			45	15:47 8 16:02	3	5	101	65	Limestone, medium gray (N5) to dark gray (N3) in alternating bands with black stylolites common, thin-medium bedded, slightly fractured, fossil material concentrated in bands, possibly crinoids, most fossils indistinguishable, Breaks @ 44.9-45.2 (multiple high angle breaks), 45.4-45.6 (high angle), 45.6 (shaley, horizontal), 45.7-45.75 (horizontal, core crushed to fine-medium gravel), 45.9 (shaley), 46.85 (shaley, horizontal), 48.45-48.55 (horizontal, core crushed to fine-medium gravel sized fragments), 48.7 (horizontal, non-planar, shaley). D-1-3, S-1, F-3	590	
			50	16:17 9	3	4	92.5	64	Limestone, medium gray (N5) to dark gray (N3) in alternating bands with black stylolites common, fine grained with few thin lenses of medium grained material, thin-medium bedded, slightly fractured, fossil material concentrated in bands throughout, few distinguishable fossils, Breaks @ 50.4, 50.75 (horizontal), 51.85 (horizontal, non-planar, core crushed, sub-rounded fragments), 52.6, 52.7 (shaley, solution modified, weathering residue), 52.8 (shaley), 53.3 (shaley/carbonaceous parting, non-planar), 53.55 (horizontal, trace residual clay). D-2, S-1, F-3	585	

O'BRIEN & GERE

CORE LOG

PT-MW-5

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Manlius	Olney			16:29 16:46 10 16:48	4	0.5	180	100	Dolostone, medium light gray (N6), fine grained, medium-thick bedded, rip up clasts above contact, Break @ 53.55 (horizontal, trace residual clay).		Olney Limestone-Dolostone contact @ 53.5' bgs (583.7' amsl)
									Dolostone, medium light gray (N6), fine grained, medium-thick bedded, sparsely fossiliferous. D-1, S-1, F-1		
									End of core @ 54.4' bgs		

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-MW-6

PROJECT:	Powerex RI/FS Work Plan Add. No. 4	**PROJECT LOCATION:**	Former Powerex, Inc. Facility, Auburn, N.Y.
CLIENT:	General Electric Company	**JOB NUMBER:**	49543.004.402
INSPECTOR:	R. Hornung, P. Freyer	**HOLE LOCATION:**	Approximately 20 feet NE of OW-1, 20 feet SE of DGC-8S

PURPOSE:	EISB Pilot Test Phase 1	**CASING DIAMETER:**	6 in.	**COORDINATES:**	N1064182.194 E816560.814
DRILLING CONTRACTOR:	Parratt Wolff, Inc.	**CASING LENGTH:**	16 ft.	**GROUND ELEV:**	637.3
DRILLER:	Layne Pech/Mark Eaves	**HOLE DIAMETER:**	0.315 ft.	**HORIZ. DATUM:**	NAD 83
DRILL RIG TYPE:	CME 850	**CORE TYPE:**	HQ3 Core	**VERT. DATUM:**	NGVD 1929
LICENSE NUMBER:	NYRDO1621	**TOTAL DEPTH:**	54.1 ft. bgs	**START/END DATE:**	8/31/2012-9/20/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden		5			8			Boring advanced through overburden to 6.0' bgs utilizing air knife with vac truck. Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.	635 630	
			10 15			8			Boring advanced through overburden utilizing 9-7/8" roller bit. Top of weathered bedrock at 14.0' bgs. Top of competent bedrock at 14.5' bgs. Set 6" steel overburden casing to 16.0' bgs.	625	Top of Bedrock @ 14.0' bgs (623.3' amsl)

O'BRIEN & GERE

CORE LOG

PT-MW-6

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Moorehouse		20	13:06 1 13:28	5.2	4.2	97.6	77	Limestone, medium gray (N5), fine grained, thinly bedded, slightly fractured, fossiliferous (brachiopods, possible ostracods), Breaks @ 16.1 (horizontal, non-planar), 16.3, 16.7 (horizontal), 18.6-18.7 (solution modified, core crushed to fine-medium gravel sized fragments), 18.9-18.95 (horizontal, solution modified), 19.1 (solution modified). D-2, S-1, F-2	620	
Onondaga	Nedrow		25	13:41 2 13:56	3.1	4.9	94.9	88	Limestone, dark gray (N3), fine grained, slightly fractured, pyrite. Limestone, dark gray (N3) to medium gray (N5), fine grained, thin-medium bedded, very slightly fractured, fossiliferous (brachiopods, horizontal burrows common), pyrite, Breaks @ 20.4 (shaley), 20.65 (horizontal), 21.05 (shaley), 22.0 (shaley), 23.9 (shaley). D-1, S-1, F-2	615	Moorehouse-Nedrow contact @ 20.1' bgs (617.2' amsl)
			30	14:07 3 14:23	3.2	5	104	38	Limestone, medium dark gray (N4) to medium gray (N5), fine grained, thin-medium bedded, moderately fractured, fossiliferous (brachiopods), horizontal burrows common, pyrite, Breaks @ 24.9-25.3 (high angle), 25.65 (horizontal, non-planar, solution modified), 25.95-26.1 (high angle), 26.75 (horizontal), 27.0-27.6 (multiple, high angle), 28.5, 28.6 (horizontal, non-planar), 28.9-29.0 (high angle), 29.05-29.2 (high angle), 29.55 (core crushed to sub-angular fragments). D-2, S-1, F-3	610	
				14:37 4	4.2	5	94	63	Limestone, medium gray (N5), medium grained, medium bedded, slightly to moderately fractured, fossiliferous (brachiopods, tabulate coral, crinoids), portions argillaceous, Breaks @ 30.7 (horizontal, non-planar, solution modified, residual clay and grains), 31.7-32.4 (sub-vertical), 32.4-32.65 (severely fractured), 34.15 (horizontal, non-planar, solution modified), 34.2 (low angle, non-planar, solution modified). D-2, S-1, F-2-3	605	Nedrow-Edgecliff contact @ 30.1' bgs (607.2' amsl)

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-MW-6

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Edgecliff		35	14:58							
				15:20 5 15:31	2.8	3.9	103.8	98	Limestone, medium gray (N5), medium grained, medium bedded, very slightly fractured, fossiliferous (tabulate corals, crinoids), argillaceous wavy parting few-common, pyrite, Breaks @ 35.85 (moderately weathered), 38.15, 38.95 (horizontal, slightly weathered). D-1, S-1, F-1 Utilized 5-7/8" roller bit to advance through bedrock from 16.0-39.0 and set 4" shallow bedrock casing to a depth of 39.0' bgs.	600	
				14:41 6 14:49	11.4	0.7	57.1	0	Limestone from 39.0-39.4, SAA, Break @ 39.2-39.4.		Edgecliff-Olney contact @ 39.4' bgs (597.9' amsl)
Manilius	Olney		40	15:04 7 15:21	3.4	5	105	67	Limestone, dark gray (N3), fine grained, thinly bedded, fractured. Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, slightly to moderately fractured, sparsely fossiliferous, styolites common, Breaks @ 39.85 (horizontal, non-planar, fresh), 40.6 (horizontal, moderately weathered), 40.8 (horizontal, non-planar), 40.95-41.05 (core crushed), 41.2-41.75 (high angle, slightly weathered), 42.0, 43.05, 44.4 (horizontal, along styolite), 44.5 (shaley parting, fresh). D-2, S-1, F-3	595	
			45	15:30 8 15:49	3.6	5.3	99.1	72	Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, slightly fractured, sparsely fossiliferous (often consolidated in bands), styolites common, Breaks @ 44.75, 45.0 (slightly weathered), 45.2 (horizontal, fresh), 45.8, 46.25 (horizontal, non-planar, shaley partings), 46.7-47.4 (high angle, slightly weathered), 47.0 (horizontal, shaley), 47.3-47.35 (core crushed), 47.5 (moderately weathered), 48.3-48.4 (low angle, fresh). D-2, S-1, F-3	590	
			50	16:14					Limestone, medium dark gray (N4) with bands of medium gray (N5) and dark gray (N3), fine grained, slightly fractured, sparsely fossiliferous (consolidated in bands), Breaks @ 50.4 (horizontal, shaley), 50.7 (low angle, moderately weathered, core crushed to sub-angular gravel), 51.2 (horizontal, slightly weathered), 51.65 (horizontal,		

O'BRIEN & GERE

CORE LOG

PT-MW-6

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: R. Hornung, P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
				9	3.7	4.1	100	78	non-planar, along styolite), 52.3 (horizontal, along styolite), 52.65-52.75 (low angle, slightly weathered). D-2, S-1, F-2	585	
Manlius	Olney			16:29					Dolostone, medium light gray (N6), fine grained, thick bedded, very sparsely fossiliferous.		Olney Limestone-Dolostone contact @ 52.9' bgs (584.4' amsl)

End of core @ 54.1' bgs

CORE LOG

PT-MW-7

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer

PROJECT LOCATION: Former Powerex, Inc. Facility, Auburn, N.Y.
JOB NUMBER: 49543.004.402
HOLE LOCATION: Approximately 65 feet SE of PT-MW-3

PURPOSE: EISB Pilot Test Phase 1
DRILLING CONTRACTOR: Parratt Wolff, Inc.
DRILLER: Mickey Marshall/Layne Pech
DRILL RIG TYPE: CME 850
LICENSE NUMBER: NYRDO1621

CASING DIAMETER: 6 in.
CASING LENGTH: 21.5 ft.
HOLE DIAMETER: 0.315 ft.
CORE TYPE: HQ3 Core
TOTAL DEPTH: 58.7 ft. bgs

COORDINATES: N1064088.174 E816654.874
GROUND ELEV: 638.8
HORIZ. DATUM: NAD 83
VERT. DATUM: NGVD 1929
START/END DATE: 8/27/2012-9/17/2012

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Overburden	Overburden								Boring advanced through overburden to 8.0' bgs utilizing 8-1/4" HSA.		
						8				635	
			5								
									Boring advanced through overburden utilizing 9-7/8" roller bit. Top of weathered bedrock at 19.0' bgs. Top of competent bedrock at 19.5' bgs. Set 6" steel casing to 21.5' bgs.	630	
			10								
										625	
			15			13.5					
										620	Top of Bedrock @ 19.0' bgs (619.8' amsl)
			20								

Report Name: OBG CORE LOG Data Template: OBG GINT STD US BC.GDT

O'BRIEN & GERE

CORE LOG

PT-MW-7

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer

Formation	Member	Rock Type	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Lithologic Description (per TPPI 302)	Elevation (ft amsl)	Notes
Onondaga	Moorehouse			09:18 1	7.3	4.1	92.7	0	Limestone, medium gray (N5), fine grained, medium bedded, extremely fractured, fossiliferous (brachiopods), pyrite, Breaks @ 21.5-25.3 (vertical fracture throughout run), 21.8 (horizontal, non-planar), 22.9 (low angle), 23.5 (weathered, solution modified, trace residual grains), 23.8 (weathered, pitting, solution modified). D-2, S-1, F-5	615	While coring Run #1, multiple start and end times were recorded. The penetration rate represents the first and last start and end time recorded during the run.
Onondaga	Nedrow		25	09:48					Limestone, dark gray (N3), fine grained, thinly bedded, Breaks @ 25.0 (horizontal), 25.25-25.3 (core crushed).		Moorehouse-Nedrow contact @ 25.0' bgs (613.8' amsl)
			30	10:02 2 10:27	5	5	102	92	Limestone, medium gray (N5) to medium dark gray (N4), fine grained, medium bedded, slightly fractured, fossiliferous, horizontal burrows common, pyrite, Breaks @ 25.4 (horizontal, solution modified), 25.95, 26.0, 26.1 (horizontal), 27.2 (solution modified), 27.95 (solution modified), 28.3 (horizontal, possible mechanical), 28.8 (solution modified, pitting, shaley), 29.65 (horizontal). D-2, S-1, F-2	610	
			35	10:41 3 11:11	6	5	97	73	Limestone, medium gray (N5) to medium dark gray (N4), fine grained, medium bedded, slightly to moderately fractured, fossiliferous (brachiopods, horizontal burrows), residual clays, pyrite, Breaks @ 30.8, 31.0 (horizontal, minor solution modification), 31.0-31.7 (high angle, multiple parallel), 32.55-32.75 (low angle), 33.1, 33.5 (horizontal), 34.3 (horizontal, solution modified). D-2, S-1-2, F-3	605	Nedrow-Edgecliff contact @ 34.7' bgs (604.1' amsl)
Onondaga	Edgecliff		40	11:21 4 11:45	4.8	5	100	88	Limestone, medium gray (N5), medium grained, medium bedded, slightly fractured, fossiliferous (crinoids, tabulate corals, abundant in portions), portions more argillaceous with carbonaceous partings common, Breaks @ 35.4, 36.15 (horizontal, non-planar), 37.05 (shaley, horizontal, solution modified), 37.1-37.2 (core crushed, shaley partings), 38.6 (core crushed, fine-medium gravel, solution modified), 39.2 (carbonaceous parting), 40.1 (core crushed to fine-medium sub-rounded gravel). D-1, S-1, F-2	600	
				12:39 5 12:54	5	3	110	15	Limestone, medium gray (N5), medium grained, medium bedded, moderately fractured (portions of core crushed), fossiliferous (crinoid platelets, brachiopods visible), trace residual clay on fractures, Breaks @ 40.4 (horizontal), 40.5 (horizontal), 40.6-41.2 (core crushed to medium-coarse sub-angular gravel), 41.2 (low angle, horizontal, non-planar), 41.25-41.35 (low angle), 42.05-42.35 (high angle, solution modified), 42.35 (horizontal, non-planar), 42.65-42.8 (core crushed to fine-medium-coarse sub-angular to sub-rounded gravel sized fragments), 42.65-43.4 (sub-vertical, solution modified, minor staining). D-2, S-1, F-4-5		
				10:24 6 10:34	9.1	1.1	100	54		595	Edgecliff-Olney contact @ 44.0' bgs (594.8' amsl)
			45	10:48					Utilized 5-7/8" roller bit to advance through bedrock from		

O'BRIEN & GERE

CORE LOG

PT-MW-7

PROJECT: Powerex RI/FS Work Plan Add. No. 4
CLIENT: General Electric Company
INSPECTOR: P. Freyer

Formation	Member	Depth (ft bgs)	Run No.	Pen. Rate (min/ft)	Penetration (ft)	Recovery (%)	RQD (%)	Elevation (ft amsl)	Notes
Manlius	Olney		7	4.6	5	103	54	590	
			11:11						
		50	11:24 8	3.2	5	100	56	585	
			11:40						
		55	11:53 9	3.3	3	98.3	0		
			12:03						
Manlius	Olney		12:16 10 12:20	4	1	115	52		Olney Limestone-Dolostone contact @ 57.6' bgs (581.2' amsl)

Lithologic Description (per TPPI 302)

21.5-43.6 and set 4" shallow bedrock casing to a depth of 43.6' bgs.

Limestone, medium gray (N5), medium grained, medium bedded, very slightly fractured, fossiliferous, phosphate nodules. D-1, S-1, F-1

Limestone, medium dark gray (N4), fine grained, thin-medium bedded, very slightly fractured, few fossils (crinoid platelets).

Limestone, medium dark gray (N4), with portions medium gray (N5) and dark gray (N3), fine grained, moderately to severely fractured, styolites, fossil material mostly concentrated in bands with sparse fossil debris between,

Breaks @ 45.4 (horizontal, non-planar, along carbonaceous parting), 45.4-46.0 (sub-vertical), 47.5 (horizontal, shaley), 47.7-48.0 (high angle, possibly mechanical), 48.3-48.7 (multiple low and high angle breaks), 49.3-49.6 (multiple, shaley parting, one weathered to clay and grains, core severely fractured). D-1-4, S-1-3, F-2

Limestone, medium gray (N5) to dark gray (N3), fine grained with few medium grained lenses (mostly fossil debris), thinly bedded, slightly to moderately fractured, styolites and shaley partings throughout,

Breaks @ 49.75 (shaley, horizontal, non-planar), 50.4 (shaley), 50.85 (non-planar, low angle), 51.7 (horizontal, slightly solution modified), 52.1-52.45 (severely fractured, core crushed), 52.75 (horizontal, non-planar), 53.1-53.2 (high angle), 53.5-53.7 (high angle), 54.2-54.35 (low angle). D-1-2, S-1-2, F-3

Limestone, medium gray (N5) to dark gray (N3), fine grained, thinly bedded, severely fractured, styolites, shaley partings, sparsely fossiliferous in alternating bands, burrows,

Breaks @ 54.6-54.9 (high angle), 55.1 (horizontal, along styolite), 55.1-55.6 (high angle), 55.7-56.25 (high angle, pitting, portions of core crushed, fine-medium sub-angular to angular gravel), 55.95 (horizontal), 56.25 (horizontal, core crushed), 56.25-56.7 (sub-vertical), 56.7-57.3 (high angle), 57.3 (horizontal, non-planar).

Dolostone from 57.6-57.7, SAB. D-1-2, S-1-2, F-4-5

Dolostone, medium light gray (N6), fine grained, medium-thick bedded, moderately fractured, sparsely fossiliferous,

Breaks @ 58.2-58.7 (high angle) and 57.55 (horizontal, possible mechanical). D-1, S-1, F-1

End of core @ 58.7' bgs

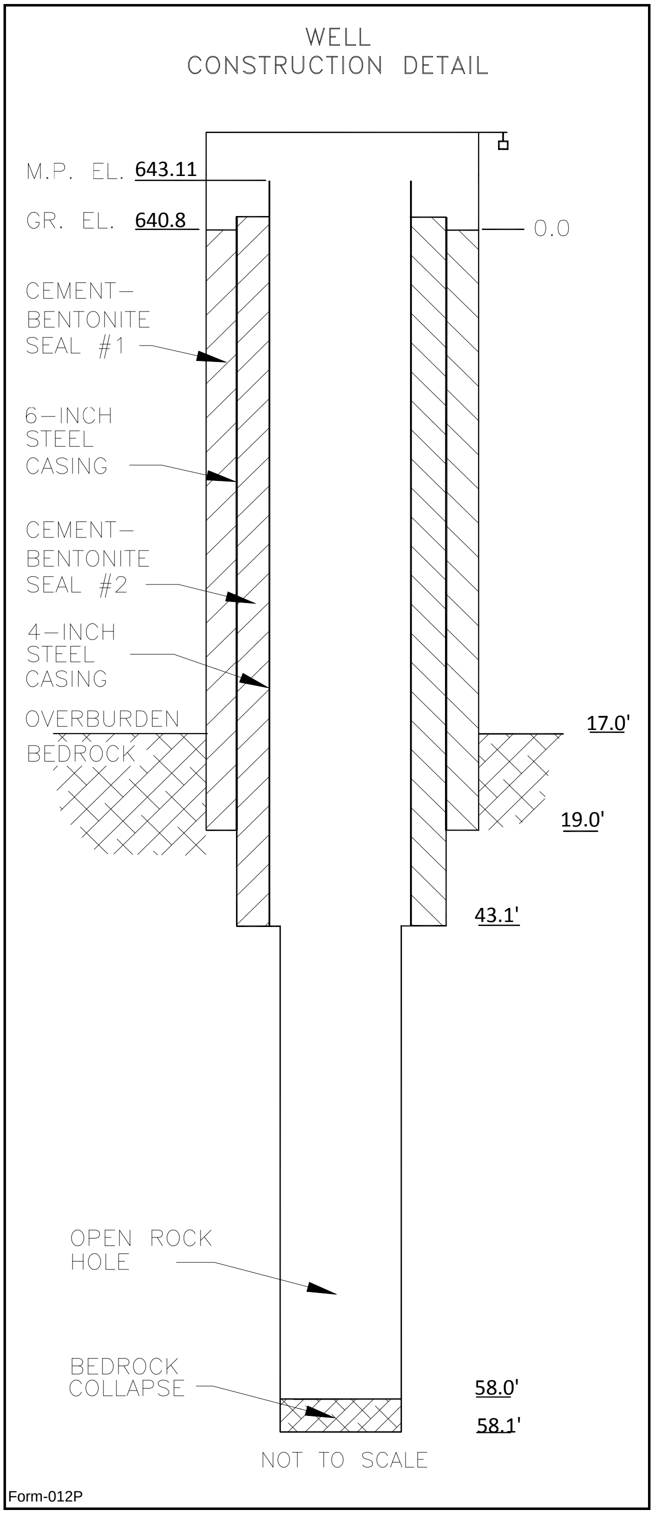
ATTACHMENT B

WELL COMPLETION LOGS

WELL COMPLETION LOG

Well ID: PT-INJ-1

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 09/05/12-09/26/12
Date Developed: 10/3/12



Form-012P

Inspection Notes:

Inspector: Paul D'Annibale, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Injection Well

Static Water Level (ft bmp): 43.71 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 60.25

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 19.2' - 58.1'

Riser Pipe:

Material: NA Diameter: NA
Length: NA Joint Type: NA

Screen:

Material: NA Diameter: NA
Slot Size: NA Joint Type: NA

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 19.0'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 43.1'
Type: Interval:

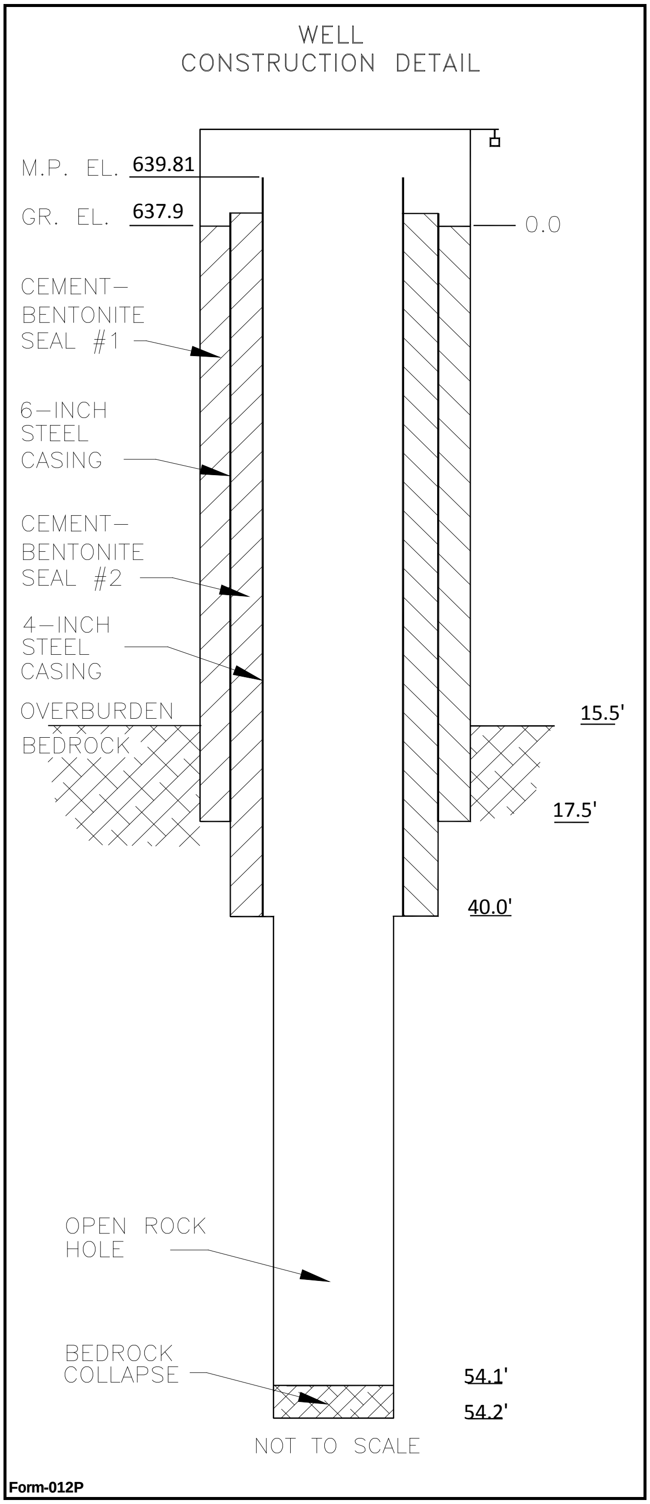
Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

WELL COMPLETION LOG

Well ID: PT-INJ-2

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 08/29/12 - 09/25/12
Date Developed: 10/3/12



Form-012P

Inspection Notes:

Inspector: Paul D'Annibale, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Injection Well

Static Water Level (ft bmp): 40.44 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 56.03

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: Roller Bit/ HQ Wir Diameter: 5_7/8" / 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 40.2' - 54.2'

Riser Pipe:

Material: NA Diameter: NA
Length: NA Joint Type: NA

Screen:

Material: NA Diameter: NA
Slot Size: NA Joint Type: NA

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 17.5'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 40.0'
Type: Interval:

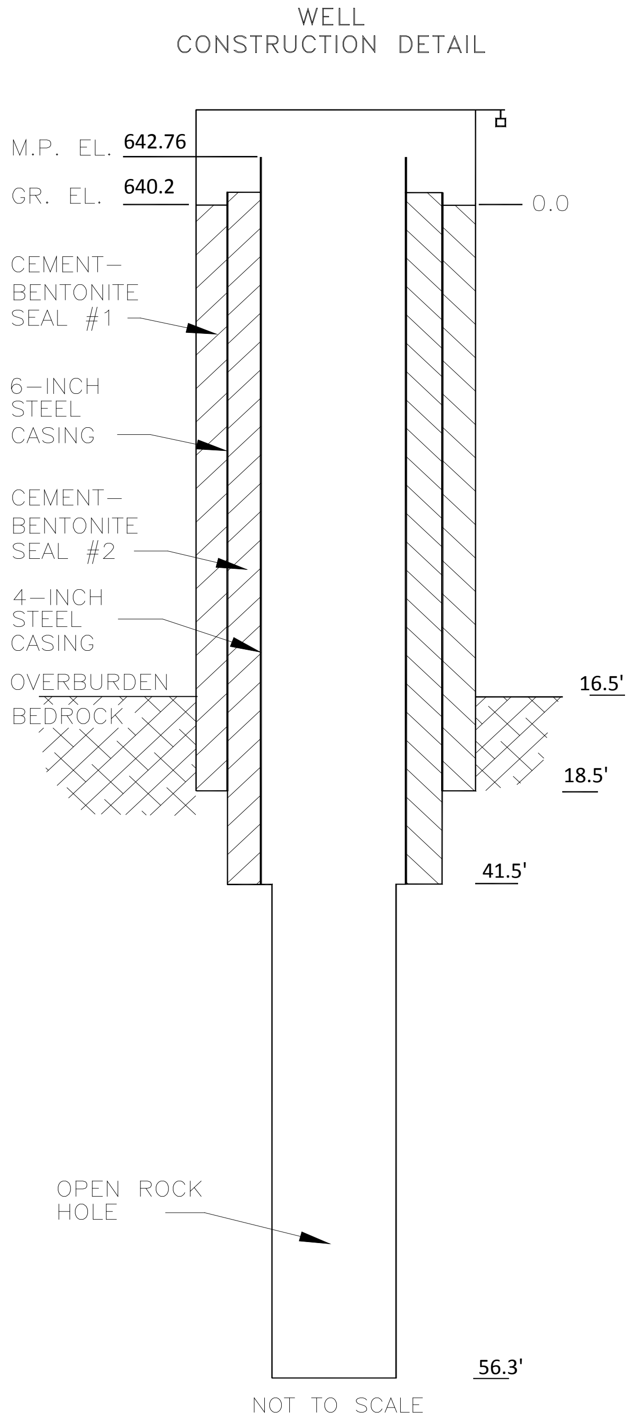
Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

WELL COMPLETION LOG

Well ID: PT-INJ-3

Project: AP RI/FS WP Addendum No. 4
Client: General Electric Company
Location: Former Powerex Inc. Facility, Auburn N.Y.
Date Drilled: 09/10/12 - 10/01/12
Project No.: 49543.004.402
Date Developed: 10/3/12



Form-012P

Inspection Notes:

Inspector: Paul D'Annibale
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Injection Well

Static Water Level (ft bmp): 43.37 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 58.85

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: Roller Bit/ HQ Wir Diameter: 5_7/8" / 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 41.5' - 56.3'

Riser Pipe:

Material: NA Diameter: NA
Length: NA Joint Type: NA

Screen:

Material: NA Diameter: NA
Slot Size: NA Joint Type: NA

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 18.5'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 41.5'
Type: Interval:

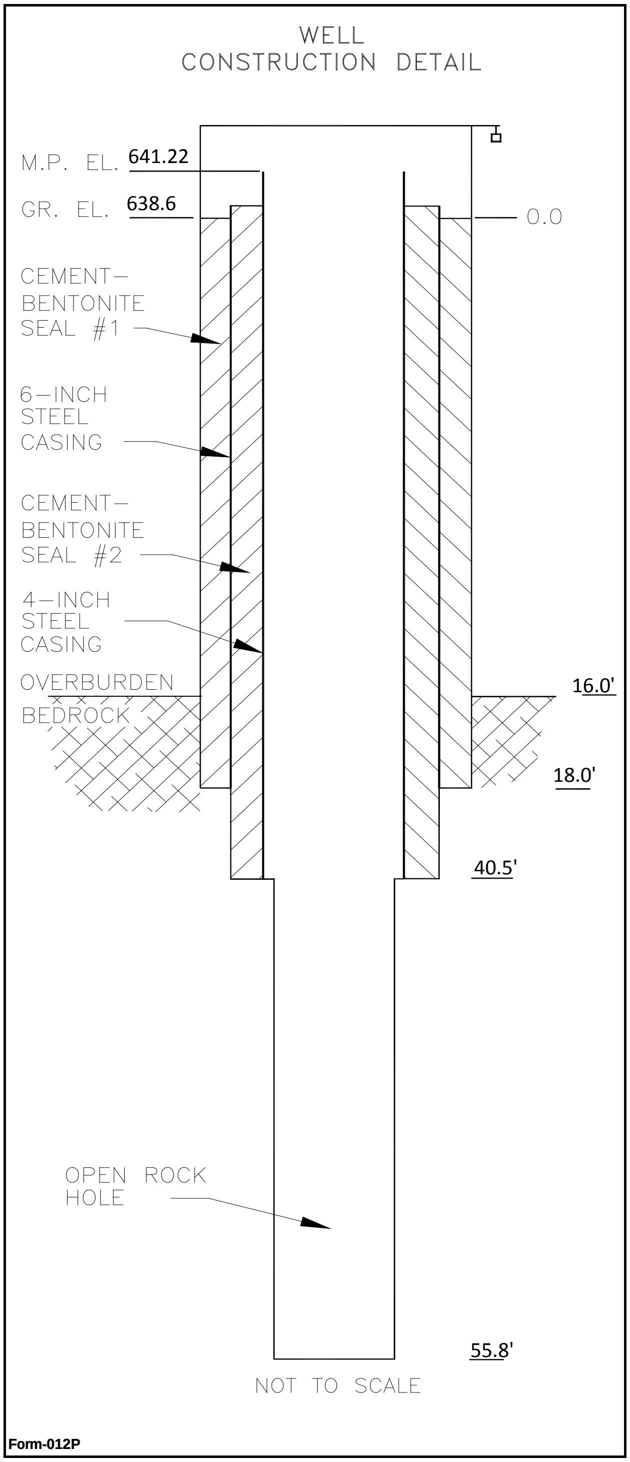
Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

WELL COMPLETION LOG

Well ID: **PT-INJ-4**

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 08/30/12 - 09/25/12
Date Developed: 10/3/12 - 10/4/12



Form-012P

Inspection Notes:

Inspector: Paul D'Annibale, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Injection Well

Static Water Level (ft bmp): 40.64 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 58.43

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: Roller Bit/ HQ Wir Diameter: 5_7/8" / 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 40.5' - 55.8'

Riser Pipe:

Material: NA Diameter: NA
Length: NA Joint Type: NA

Screen:

Material: NA Diameter: NA
Slot Size: NA Joint Type: NA

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 18.0'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 40.5'
Type: Interval:

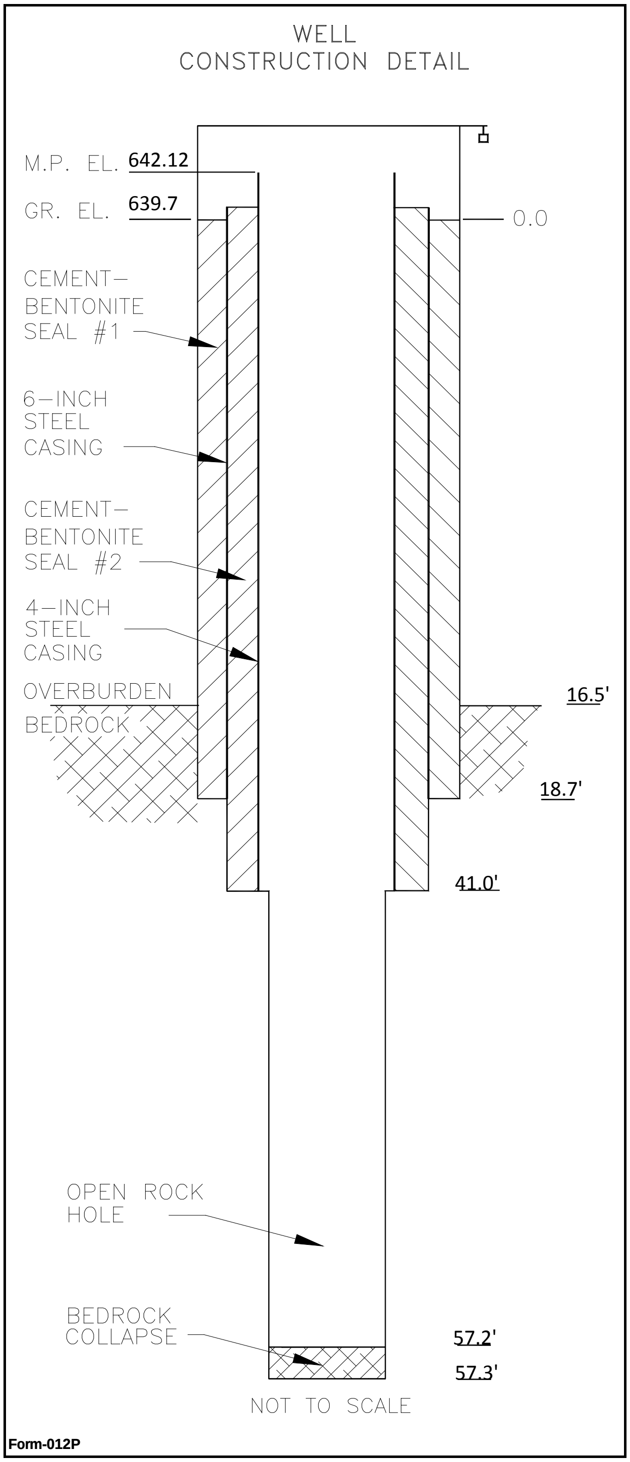
Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

WELL COMPLETION LOG

Well ID: PT-INJ-5

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 9/6/12 - 10/1/12
Date Developed: 10/4/12



Form-012P

Inspection Notes:

Inspector: Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Injection Well

Static Water Level (ft bmp): 42.73 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 59.54

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: Roller Bit/ HQ Wir Diameter: 5_7/8" / 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 41.0' - 57.3'

Riser Pipe:

Material: NA Diameter: NA
Length: NA Joint Type: NA

Screen:

Material: NA Diameter: NA
Slot Size: NA Joint Type: NA

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 18.7'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 41.0'
Type: Interval:

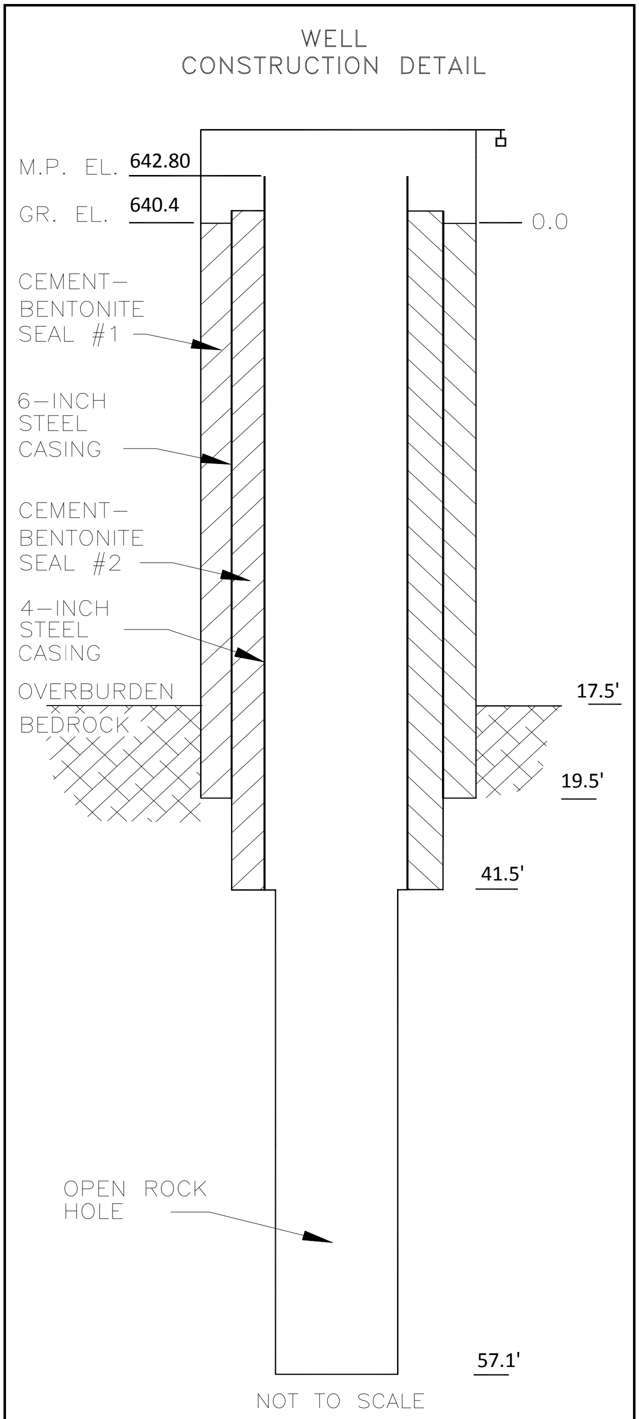
Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

WELL COMPLETION LOG

Well ID: **PT-INJ-6**

Project:	AP RI/FS WP Addendum No. 4	**Client:**	General Electric Company
Location:	Former Powerex Inc. Facility, Auburn N.Y.	**Date Drilled:**	08/31/12 - 10/2/12
Project No.:	49543.004.402	**Date Developed:**	10/4/12



Form-012P

Inspection Notes:

Inspector: Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Injection Well

Static Water Level (ft bmp): 43.42 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 59.56

Drilling Method - Overburden:

Type:	HSA/ Roller Bit	Diameter:	8_1/4"/ 9_7/8"
Casing:	6" Steel		

Sampling Method - Overburden:

Type:	NA	Diameter:	NA
Weight:	NA	Fall:	NA
Interval:	NA		

Drilling Method - Bedrock:

Type:	Roller Bit/ HQ Wir	Diameter:	5_7/8" / 3_3/4"
Casing:	4" Steel		

Sampling Method - Bedrock:

Type:	HQ Core	Diameter:	2_3/16"
Interval:	41.5' - 57.1'		

Riser Pipe:

Material:	NA	Diameter:	NA
Length:	NA	Joint Type:	NA

Screen:

Material:	NA	Diameter:	NA
Slot Size:	NA	Joint Type:	NA

Filter Pack:

Type:	NA	Grade:	NA
Interval:	NA		

Seal(s):

Type:	Cement-Bentonite Seal #1	Interval:	0.0' - 19.5'
Type:	Cement-Bentonite Seal #2	Interval:	0.0'- 41.5'
Type:		Interval:	

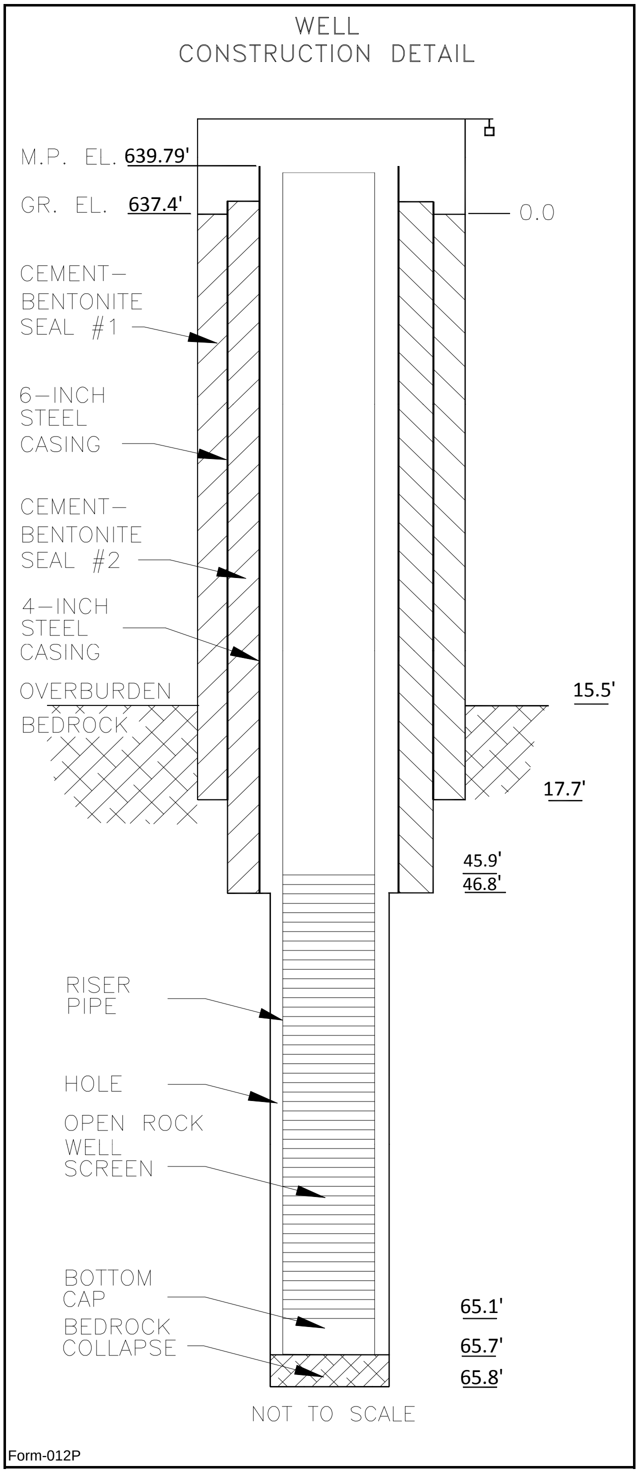
Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

WELL COMPLETION LOG

Well ID: PT-MW-1

Project: AP RI/FS WP Addendum No. 4
Client: General Electric Company
Location: Former Powerex Inc. Facility, Auburn N.Y.
Date Drilled: 08/27/12 - 09/11/12
Project No.: 49543.004.402
Date Developed: 10/2/12



Form-012P

Inspection Notes:

Inspector: Robert Hornung, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 53.78 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 68.05

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 17.8' - 65.8'

Riser Pipe:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Length: 47.4' Joint Type: Flush Thread

Screen:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 17.7'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 46.8'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

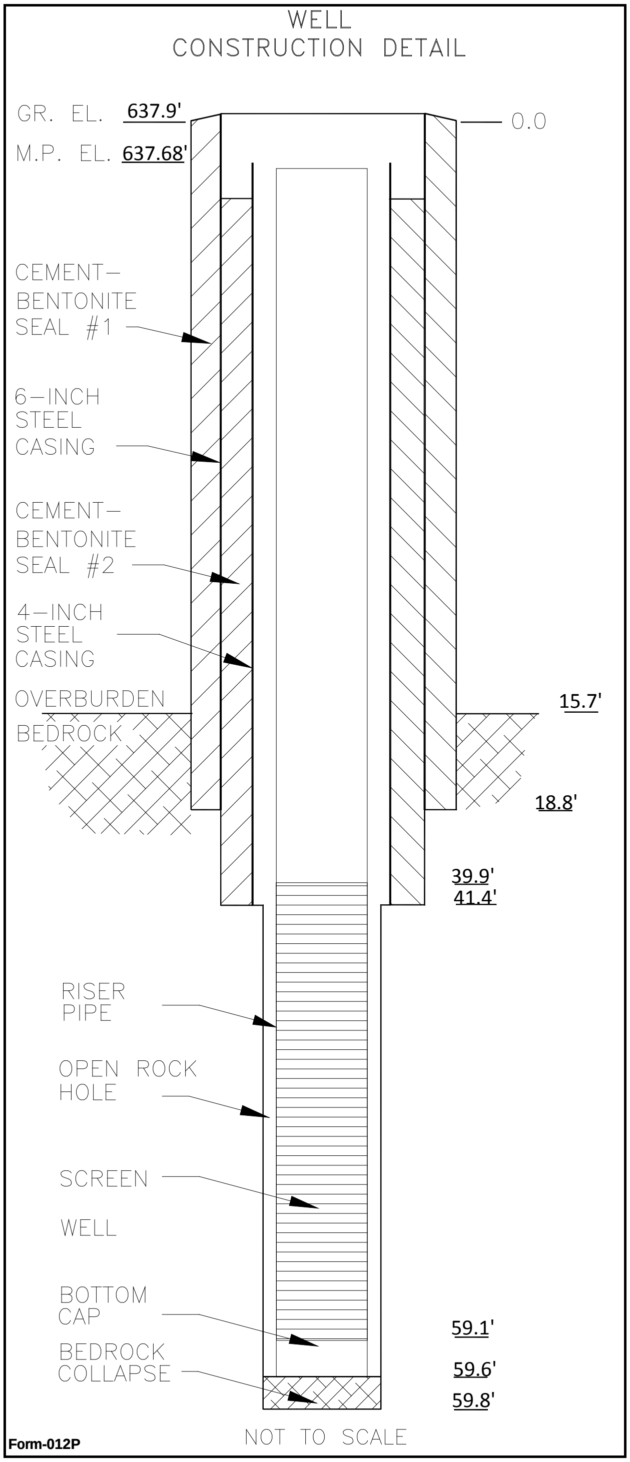
Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

OBRIEN & GERE

WELL COMPLETION LOG

Well ID: PT-MW-2

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 08/28/12 - 09/11/12
Date Developed: 10/2/12 - 10/15/12



Form-012P

Inspection Notes:

Inspector: Robert Hornung, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 51.34 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 59.37

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 18.8' - 59.8'

Riser Pipe:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Length: 39.1' Joint Type: Flush Thread

Screen:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 18.8'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 41.4'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

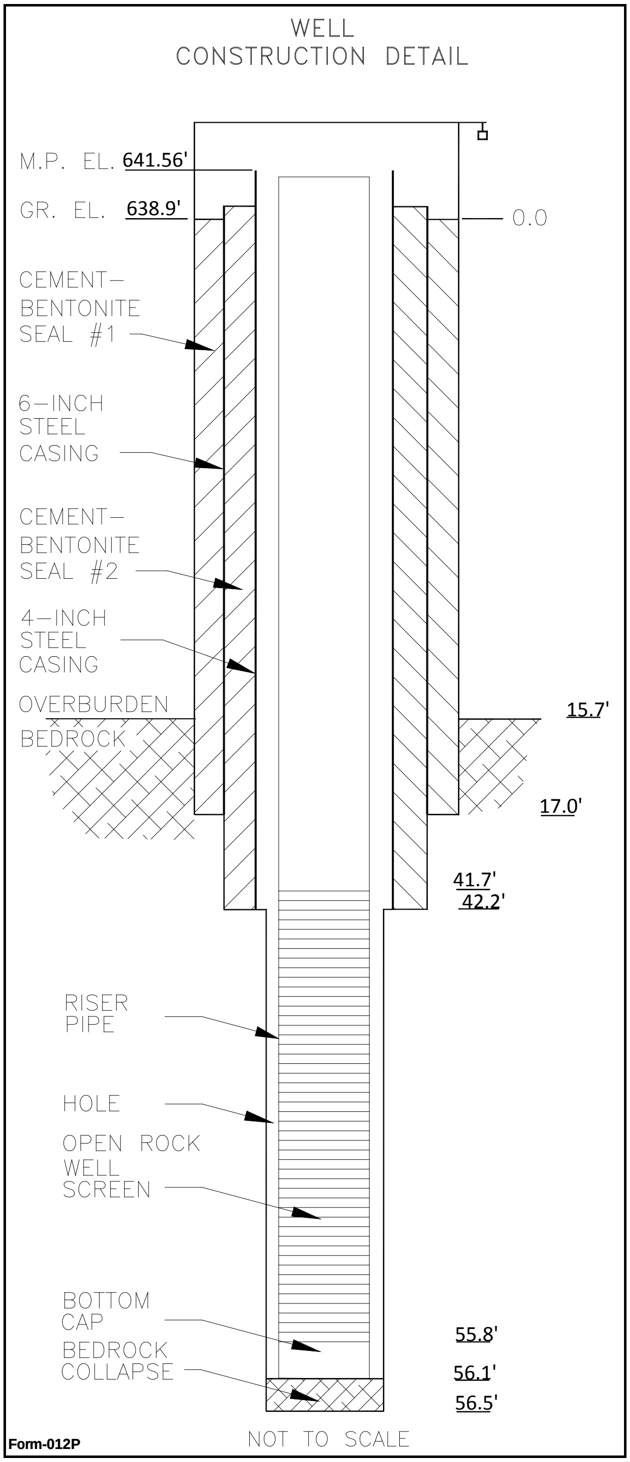
O'BRIEN & GERE

Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

WELL COMPLETION LOG

Well ID: PT-MW-3

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 08/29/12 - 09/20/12
Date Developed: 10/5/12



Form-012P

Inspection Notes:

Inspector: Robert Hornung, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 42.97 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 58.76

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 17.0' - 56.5'

Riser Pipe:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Length: 43.5' Joint Type: Flush Thread

Screen:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 17.0'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 42.2'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

O'BRIEN & GERE

Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

WELL COMPLETION LOG

Well ID: PT-MW-4

Project: AP RI/FS WP Addendum No. 4

Location: Former Powerex Inc. Facility, Auburn N.Y.

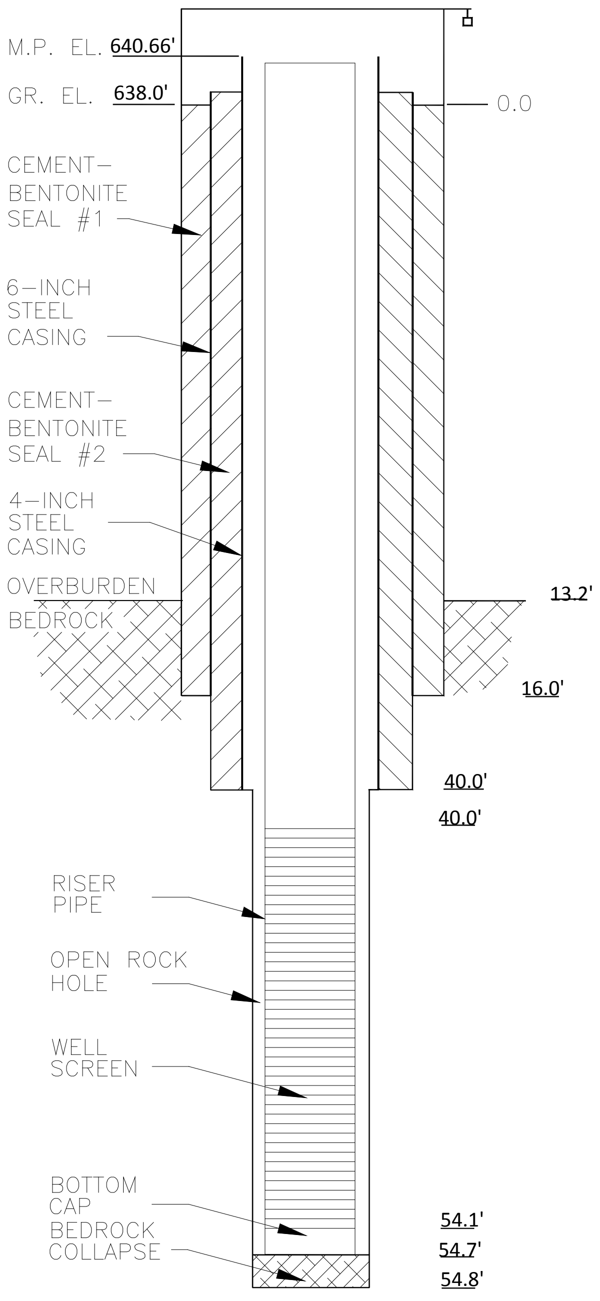
Project No.: 49543.004.402

Client: General Electric Company

Date Drilled: 08/30/12 - 09/19/12

Date Developed: 10/4/12 - 10/5/12

WELL
CONSTRUCTION DETAIL



NOT TO SCALE

Form-012P

Inspection Notes:

Inspector: Robert Hornung, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 41.49 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 57.37

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 16.1' - 54.8'

Riser Pipe:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Length: 40.3' Joint Type: Flush Thread

Screen:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 16.0'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 40.0'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

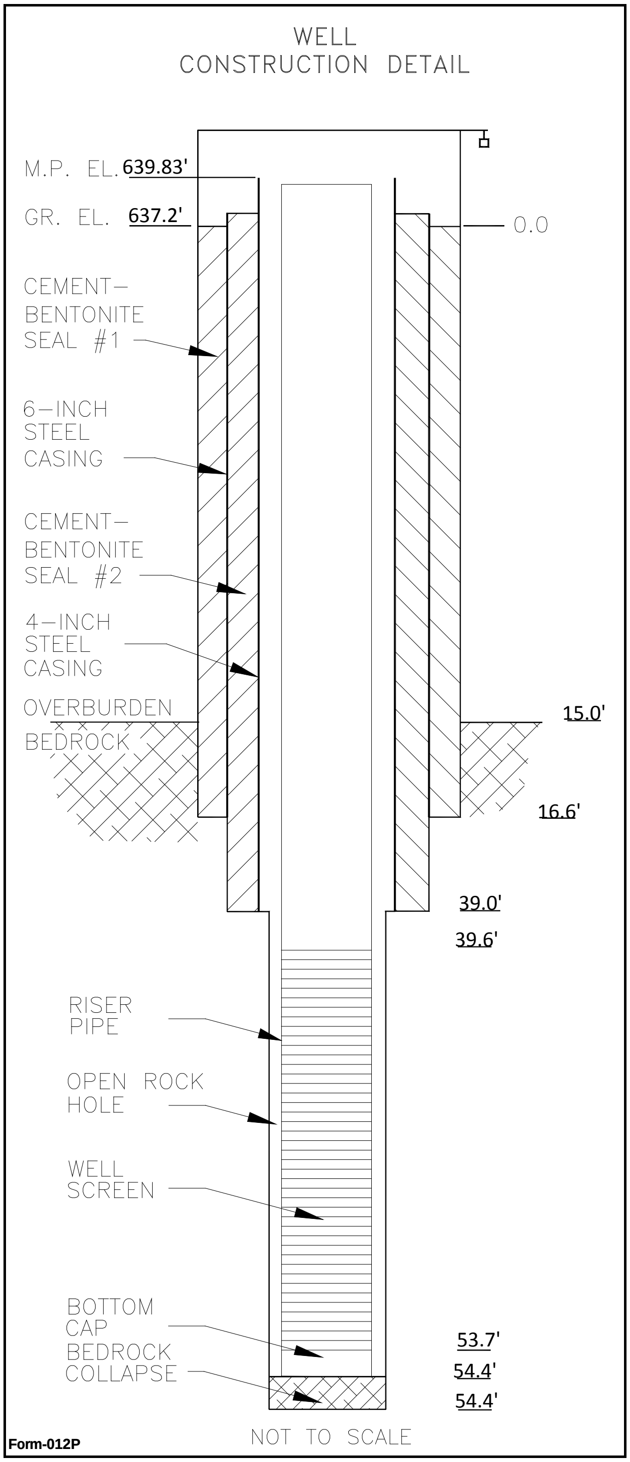
O'BRIEN & GERE

Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

WELL COMPLETION LOG

Well ID: PT-MW-5

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 08/31/12 - 09/17/12
Date Developed: 10/4/12



Inspection Notes:

Inspector: Robert Hornung, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 40.42 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 56.99

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 16.6' - 54.4'

Riser Pipe:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Length: 40.7' Joint Type: Flush Thread

Screen:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 16.6'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 39.0'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

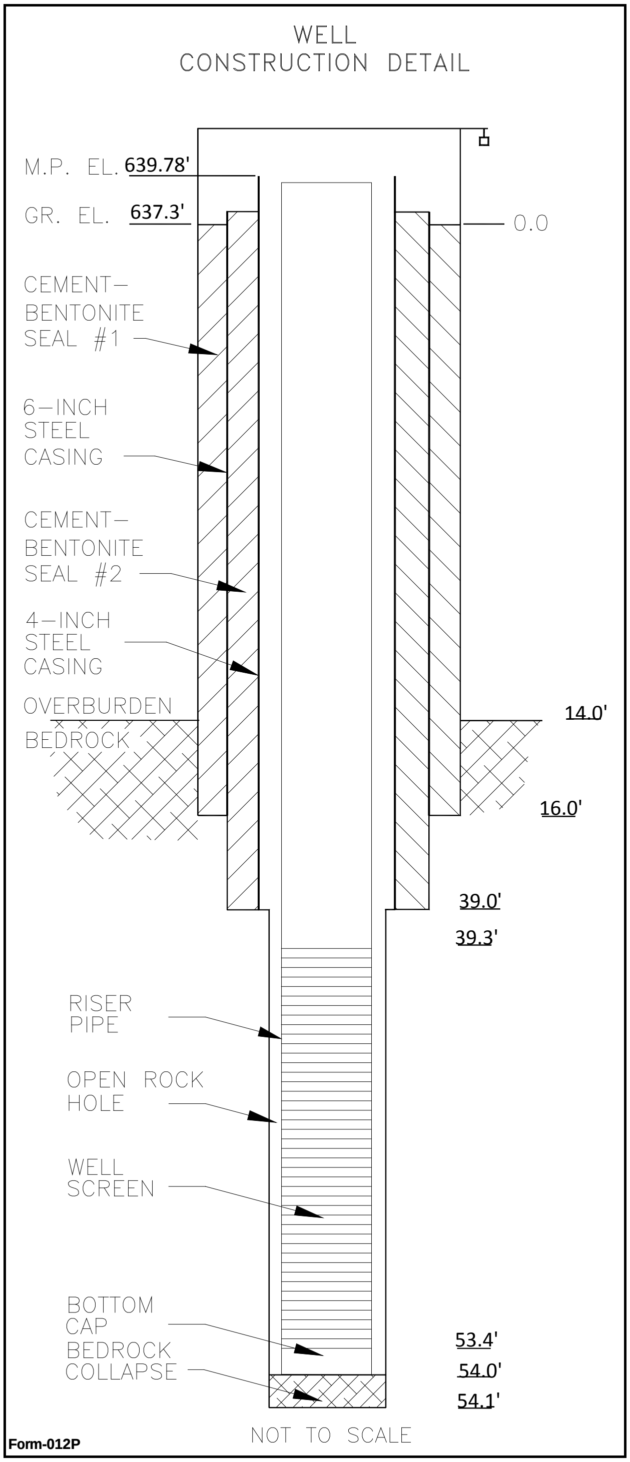
O'BRIEN & GERE

Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

WELL COMPLETION LOG

Well ID: PT-MW-6

Project: AP RI/FS WP Addendum No. 4
Location: Former Powerex Inc. Facility, Auburn N.Y.
Project No.: 49543.004.402
Client: General Electric Company
Date Drilled: 08/31/12 - 09/20/12
Date Developed: 10/4/12



Form-012P

Inspection Notes:

Inspector: Robert Hornung, Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 40.41 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 56.42

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 16.0' - 54.1'

Riser Pipe:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Length: 40.8' Joint Type: Flush Thread

Screen:

See Note Below
Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 16.0'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 39.0'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

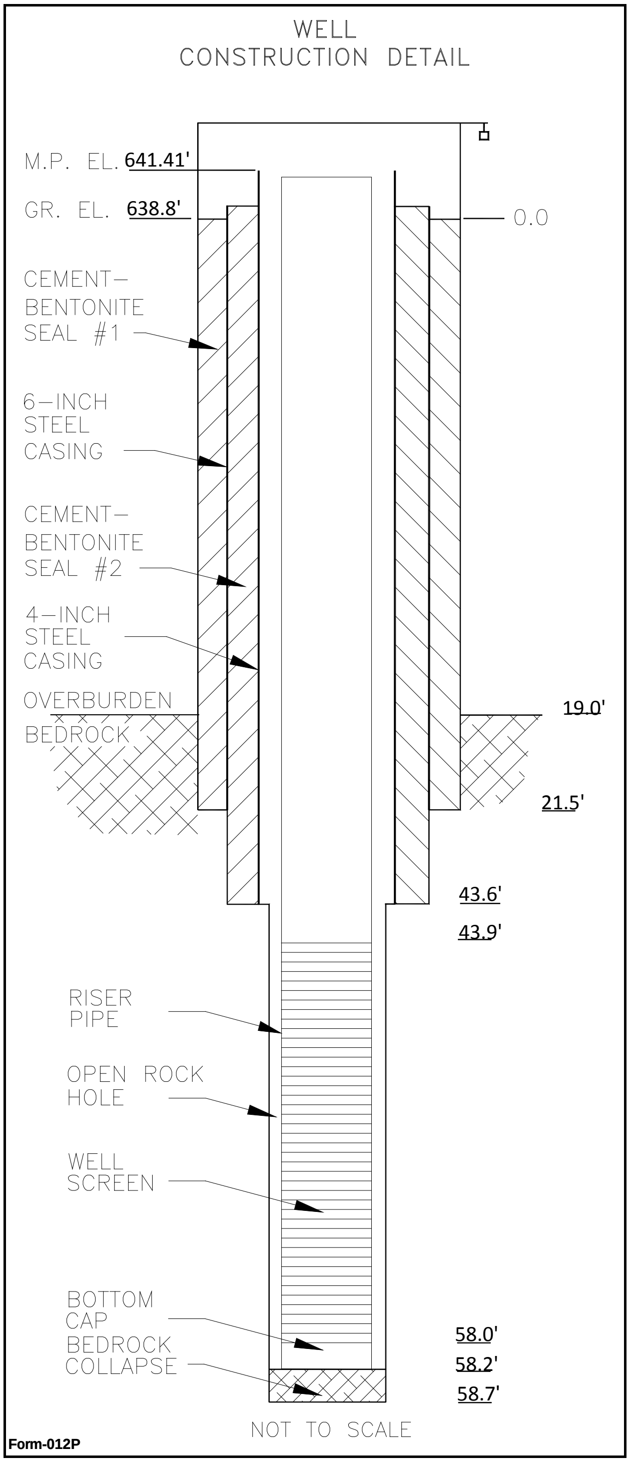
O'BRIEN & GERE

Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

WELL COMPLETION LOG

Well ID: PT-MW-7

Project: AP RI/FS WP Addendum No. 4
Client: General Electric Company
Location: Former Powerex Inc. Facility, Auburn N.Y.
Date Drilled: 08/27/12 - 09/17/12
Project No.: 49543.004.402
Date Developed: 10/2/12



Form-012P

Inspection Notes:

Inspector: Paul Freyer
Drilling Contractor: Parratt Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 43.46 Date: 10/15/12
Measuring Point: TOC
Total Depth of Well (ft bmp): 60.78

Drilling Method - Overburden:

Type: HSA/ Roller Bit Diameter: 8_1/4"/ 9_7/8"
Casing: 6" Steel

Sampling Method - Overburden:

Type: NA Diameter: NA
Weight: NA Fall: NA
Interval: NA

Drilling Method - Bedrock:

Type: HQ Wireline Diameter: 3_3/4"
Casing: 4" Steel

Sampling Method - Bedrock:

Type: HQ Core Diameter: 2_3/16"
Interval: 21.5' - 58.7'

Riser Pipe:

See Note Below

Material: Sch. 40 PVC Diameter: 3" ID
Length: 45.7' Joint Type: Flush Thread

Screen:

See Note Below

Material: Sch. 40 PVC Diameter: 3" ID
Slot Size: 0.040" Joint Type: Flush Thread

Filter Pack:

Type: NA Grade: NA
Interval: NA

Seal(s):

Type: Cement-Bentonite Seal #1 Interval: 0.0' - 21.5'
Type: Cement-Bentonite Seal #2 Interval: 0.0'- 43.6'
Type: Interval:

Locking Casing: ☒ Yes ☐ No

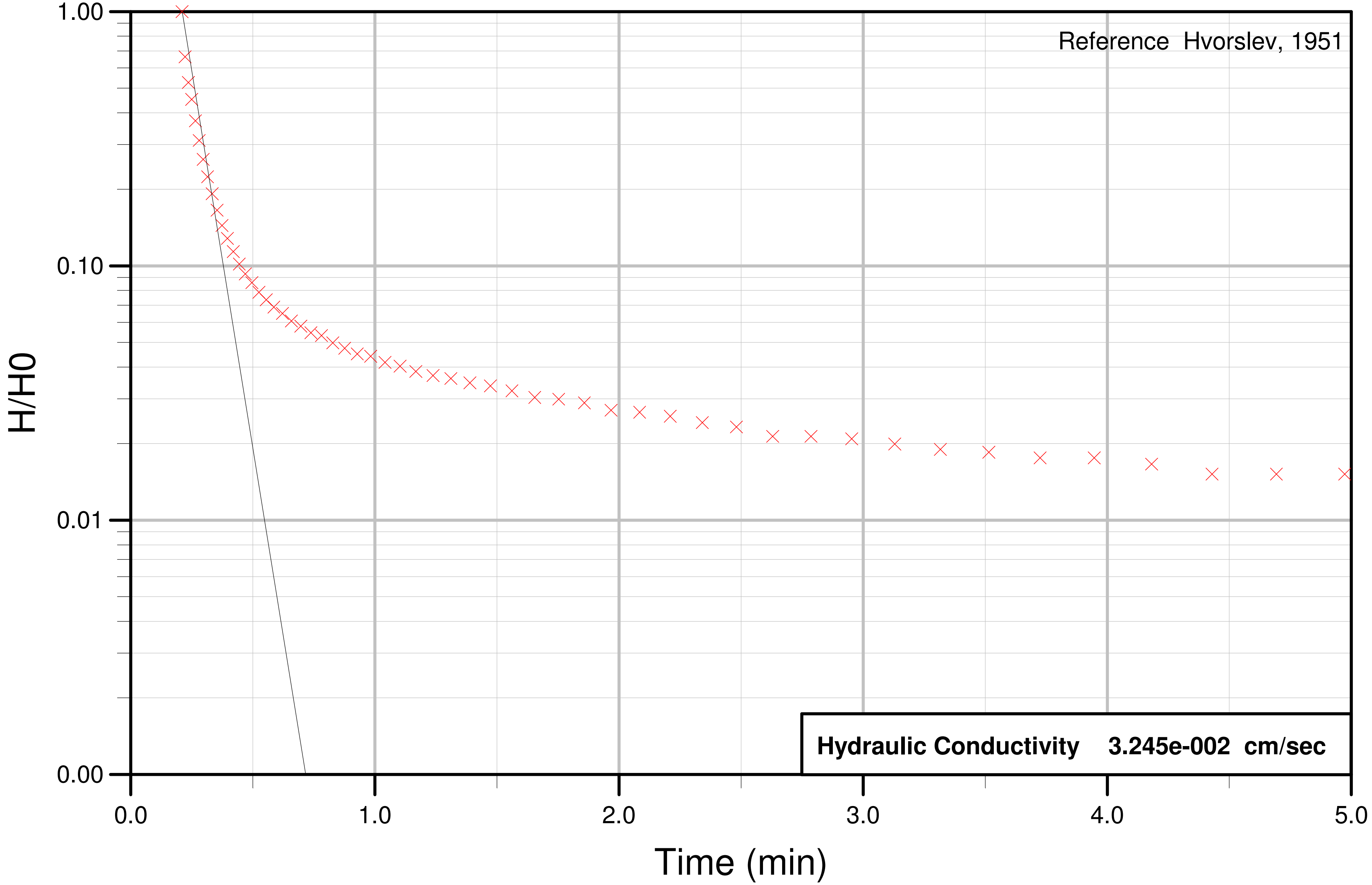
O'BRIEN & GERE

Note:
Installed 3" ID, Sch. 40 PVC, riser and screen to stabilize borehole.

ATTACHMENT C

HYDRAULIC CONDUCTIVITY TEST DATA

PT-MW-1 Rising Head Test 1



Reference Hvorslev, 1951

Hydraulic Conductivity 3.245e-002 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-1 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 56                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.9 ft
```

```
     Initial Displacement
          Fixed Value                  = 2.107 ft

     Hydraulic Conductivity
          Calculated Value             = 0.0324491 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.0728405 min

     Linear Regression Slope
          Fixed Value                  = -13.6497 /min

     Linear Regression Intercept
          Fixed Value                  = 18.2285

     Calculation Type
          Selected Value               = Partial - Top

     Kz/Kr
          Fixed Value                  = 0.5
```

ANALYSIS STATISTICS

```
     Regression Line
                  Slope:       -13.649724 /min
                  Intercept:    18.228461 dimensionless

     Residual Mean           =  0.031709
     Residual Standard Dev.  =  0.125476
     Residual Sum of Squares =  0.937976
     Absolute Residual Mean  =  0.098478
     Minimum Residual        = -0.443615
     Maximum Residual        =  0.137112
```

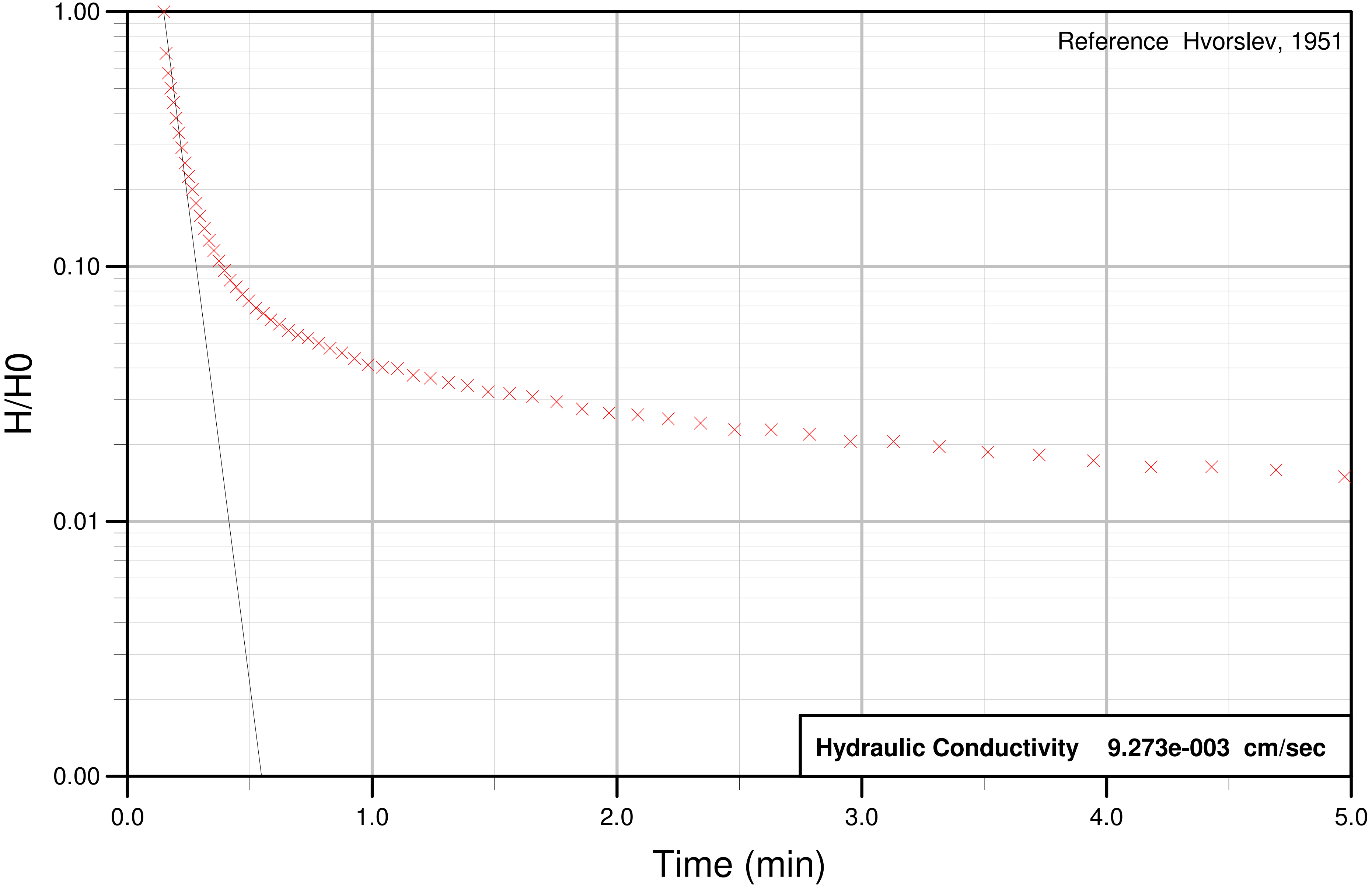
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.21	2.11	2.19	-0.08
1	0.22	1.40	1.84	-0.44
2	0.24	1.11	1.54	-0.43
3	0.25	0.95	1.27	-0.32
4	0.26	0.78	1.04	-0.25
5	0.28	0.66	0.84	-0.18
6	0.30	0.55	0.67	-0.11

Index	Time	Obs. Displacement	Calc. Displacement	Residual
7	0.31	0.47	0.52	-0.05
8	0.33	0.41	0.41	0.00
9	0.35	0.35	0.31	0.04
10	0.37	0.30	0.23	0.07
11	0.40	0.27	0.17	0.10
12	0.42	0.24	0.12	0.12
13	0.44	0.21	0.09	0.12
14	0.47	0.20	0.06	0.13
15	0.50	0.18	0.04	0.14
16	0.52	0.17	0.03	0.14
17	0.55	0.16	0.02	0.14
18	0.59	0.15	0.01	0.13
19	0.62	0.14	0.01	0.13
20	0.66	0.13	0.00	0.12
21	0.70	0.12	0.00	0.12
22	0.74	0.12	0.00	0.11
23	0.78	0.11	0.00	0.11
24	0.83	0.11	0.00	0.10
25	0.88	0.10	0.00	0.10
26	0.93	0.10	0.00	0.09
27	0.98	0.09	0.00	0.09
28	1.04	0.09	0.00	0.09
29	1.10	0.09	0.00	0.08
30	1.17	0.08	0.00	0.08
31	1.24	0.08	0.00	0.08
32	1.31	0.08	0.00	0.08
33	1.39	0.07	0.00	0.07
34	1.47	0.07	0.00	0.07
35	1.56	0.07	0.00	0.07
36	1.65	0.06	0.00	0.06
37	1.75	0.06	0.00	0.06
38	1.86	0.06	0.00	0.06
39	1.97	0.06	0.00	0.06
40	2.08	0.06	0.00	0.06
41	2.21	0.05	0.00	0.05
42	2.34	0.05	0.00	0.05
43	2.48	0.05	0.00	0.05
44	2.63	0.05	0.00	0.05
45	2.79	0.05	0.00	0.05
46	2.95	0.04	0.00	0.04
47	3.13	0.04	0.00	0.04

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
48	3.32	0.04	0.00	0.04
49	3.51	0.04	0.00	0.04
50	3.72	0.04	0.00	0.04
51	3.95	0.04	0.00	0.04
52	4.18	0.04	0.00	0.04
53	4.43	0.03	0.00	0.03
54	4.69	0.03	0.00	0.03
55	4.97	0.03	0.00	0.03

PT-MW-1 Rising Head Test 2



```
                          AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-1 Rising Test 2
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 62                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.9 ft
```

```
     Initial Displacement
          Fixed Value                  = 2.139 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00927295 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.207478 min

     Linear Regression Slope
          Fixed Value                  = -17.2979 /min

     Linear Regression Intercept
          Fixed Value                  = 13.3924

     Calculation Type
          Selected Value               = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                  Slope:       -17.297896 /min
                  Intercept:    13.392361 dimensionless

     Residual Mean           =  0.059349
     Residual Standard Dev.  =  0.113907
     Residual Sum of Squares =  1.022825
     Absolute Residual Mean  =  0.105078
     Minimum Residual        = -0.404021
     Maximum Residual        =  0.183365
```

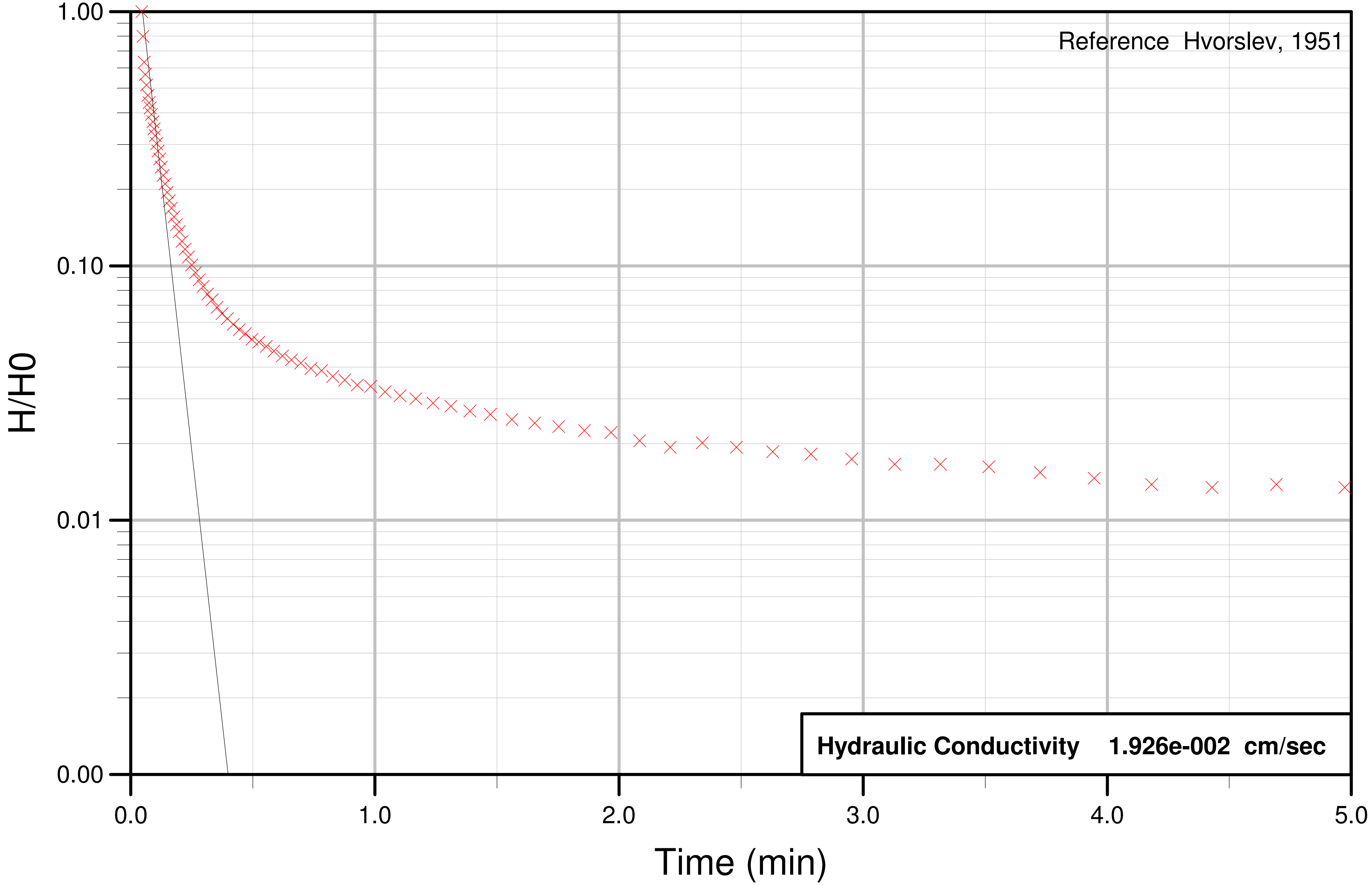
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.15	2.14	2.18	-0.04
1	0.16	1.47	1.87	-0.40
2	0.17	1.23	1.59	-0.37
3	0.18	1.07	1.35	-0.27
4	0.19	0.94	1.12	-0.18
5	0.20	0.82	0.92	-0.11
6	0.21	0.72	0.76	-0.04
7	0.22	0.63	0.61	0.02
8	0.24	0.55	0.48	0.06
9	0.25	0.48	0.38	0.10

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.26	0.43	0.29	0.13
11	0.28	0.38	0.22	0.15
12	0.30	0.34	0.17	0.17
13	0.31	0.30	0.12	0.18
14	0.33	0.27	0.09	0.18
15	0.35	0.25	0.06	0.18
16	0.37	0.23	0.04	0.18
17	0.40	0.21	0.03	0.18
18	0.42	0.19	0.02	0.17
19	0.44	0.18	0.01	0.16
20	0.47	0.17	0.01	0.16
21	0.50	0.16	0.01	0.15
22	0.52	0.15	0.00	0.14
23	0.55	0.14	0.00	0.14
24	0.59	0.13	0.00	0.13
25	0.62	0.13	0.00	0.13
26	0.66	0.12	0.00	0.12
27	0.70	0.12	0.00	0.11
28	0.74	0.11	0.00	0.11
29	0.78	0.11	0.00	0.11
30	0.83	0.10	0.00	0.10
31	0.88	0.10	0.00	0.10
32	0.93	0.09	0.00	0.09
33	0.98	0.09	0.00	0.09
34	1.04	0.09	0.00	0.09
35	1.10	0.09	0.00	0.08
36	1.17	0.08	0.00	0.08
37	1.24	0.08	0.00	0.08
38	1.31	0.08	0.00	0.08
39	1.39	0.07	0.00	0.07
40	1.47	0.07	0.00	0.07
41	1.56	0.07	0.00	0.07
42	1.65	0.07	0.00	0.07
43	1.75	0.06	0.00	0.06
44	1.86	0.06	0.00	0.06
45	1.97	0.06	0.00	0.06
46	2.08	0.06	0.00	0.06
47	2.21	0.05	0.00	0.05
48	2.34	0.05	0.00	0.05
49	2.48	0.05	0.00	0.05
50	2.63	0.05	0.00	0.05

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	2.79	0.05	0.00	0.05
52	2.95	0.04	0.00	0.04
53	3.13	0.04	0.00	0.04
54	3.32	0.04	0.00	0.04
55	3.51	0.04	0.00	0.04
56	3.72	0.04	0.00	0.04
57	3.95	0.04	0.00	0.04
58	4.18	0.04	0.00	0.04
59	4.43	0.04	0.00	0.04
60	4.69	0.03	0.00	0.03
61	4.97	0.03	0.00	0.03

PT-MW-1 Rising Head Test 3



Hydraulic Conductivity 1.926e-002 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE

Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-1 Rising Test 3
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 80                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.9 ft
```

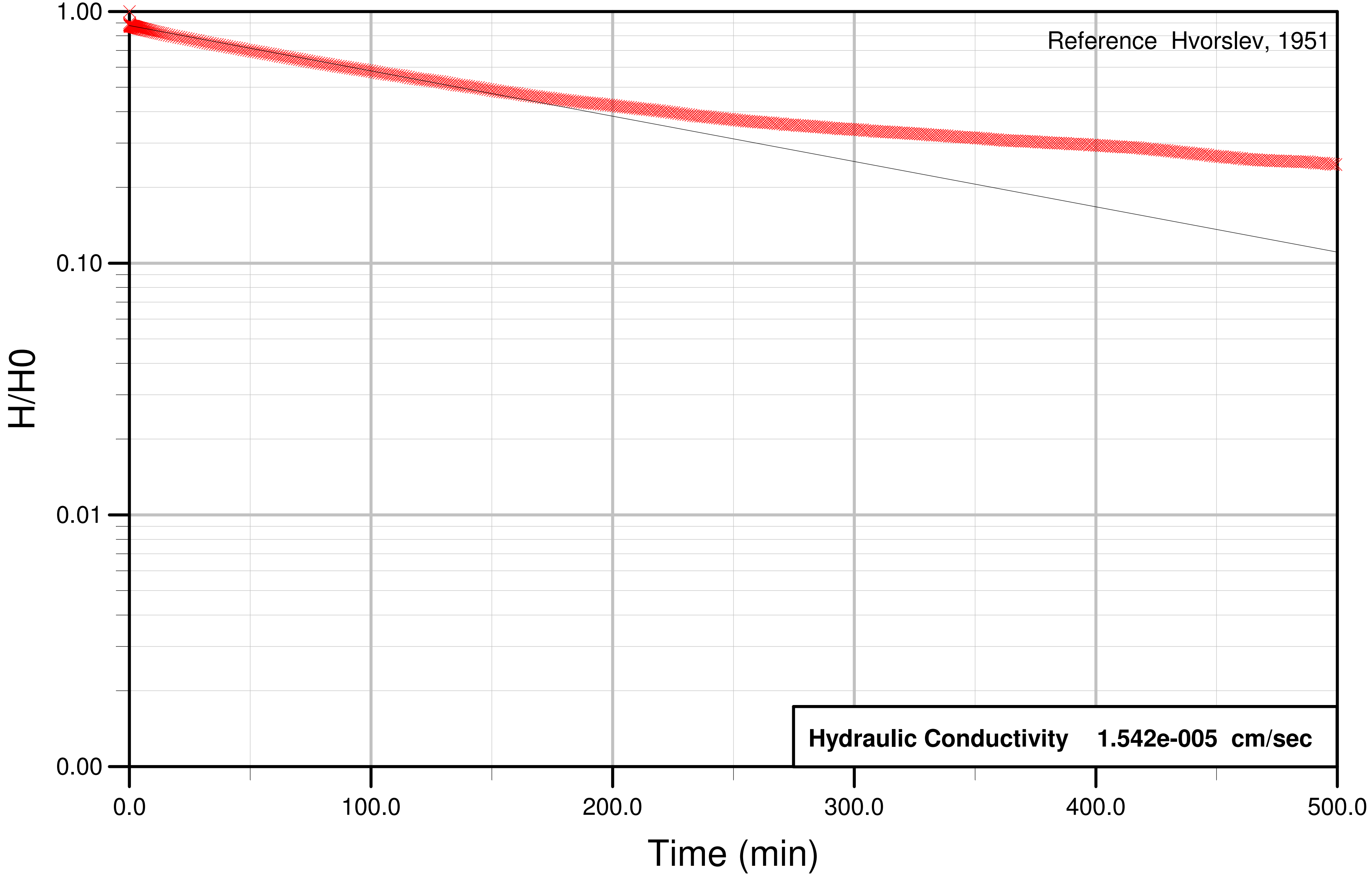
```
     Initial Displacement
          Fixed Value                    = 2.531 ft

     Hydraulic Conductivity
          Calculated Value               = 0.0192636 cm/sec

     Time to 37% Displacement
          Calculated Value               = 0.099874 min

     Linear Regression Slope
          Fixed Value                    = -19.9353 /min

     Linear Regression Intercept
          Fixed Value                    = 2.7095

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -19.935270 /min
                  Intercept:     2.709498 dimensionless

     Residual Mean           =  0.026525
     Residual Standard Dev.  =  0.199720
     Residual Sum of Squares =  3.247319
     Absolute Residual Mean  =  0.146852
     Minimum Residual        = -0.699037
     Maximum Residual        =  0.213897


DATA DETAIL
```

Index	Time	Obs. Displacement	Calc. Displacement	Residual
	(min)	(ft)	(ft)	
0	0.05	2.53	2.80	-0.27
1	0.05	2.02	2.53	-0.51
2	0.05	1.60	2.30	-0.70
3	0.06	1.43	2.07	-0.64
4	0.06	1.30	1.88	-0.58
5	0.07	1.18	1.70	-0.51
6	0.08	1.11	1.54	-0.43
7	0.08	1.06	1.40	-0.34
8	0.08	1.00	1.26	-0.27
9	0.09	0.93	1.14	-0.21

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.10	0.88	1.03	−0.16
11	0.10	0.82	0.93	−0.11
12	0.11	0.77	0.83	−0.07
13	0.11	0.72	0.74	−0.02
14	0.12	0.67	0.65	0.02
15	0.13	0.62	0.56	0.06
16	0.13	0.57	0.49	0.09
17	0.14	0.53	0.42	0.12
18	0.15	0.49	0.35	0.14
19	0.16	0.46	0.30	0.16
20	0.17	0.43	0.25	0.18
21	0.18	0.40	0.20	0.19
22	0.19	0.37	0.16	0.20
23	0.20	0.35	0.13	0.21
24	0.21	0.32	0.10	0.21
25	0.22	0.29	0.08	0.21
26	0.24	0.27	0.06	0.21
27	0.25	0.26	0.05	0.21
28	0.26	0.24	0.04	0.20
29	0.28	0.22	0.03	0.20
30	0.30	0.21	0.02	0.19
31	0.31	0.20	0.01	0.18
32	0.33	0.19	0.01	0.18
33	0.35	0.17	0.01	0.17
34	0.37	0.16	0.00	0.16
35	0.40	0.16	0.00	0.15
36	0.42	0.15	0.00	0.15
37	0.44	0.14	0.00	0.14
38	0.47	0.14	0.00	0.14
39	0.50	0.13	0.00	0.13
40	0.52	0.13	0.00	0.13
41	0.55	0.12	0.00	0.12
42	0.59	0.12	0.00	0.12
43	0.62	0.11	0.00	0.11
44	0.66	0.11	0.00	0.11
45	0.70	0.11	0.00	0.10
46	0.74	0.10	0.00	0.10
47	0.78	0.10	0.00	0.10
48	0.83	0.09	0.00	0.09
49	0.88	0.09	0.00	0.09
50	0.93	0.09	0.00	0.09

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	0.98	0.09	0.00	0.08
52	1.04	0.08	0.00	0.08
53	1.10	0.08	0.00	0.08
54	1.17	0.08	0.00	0.08
55	1.24	0.07	0.00	0.07
56	1.31	0.07	0.00	0.07
57	1.39	0.07	0.00	0.07
58	1.47	0.07	0.00	0.07
59	1.56	0.06	0.00	0.06
60	1.65	0.06	0.00	0.06
61	1.75	0.06	0.00	0.06
62	1.86	0.06	0.00	0.06
63	1.97	0.06	0.00	0.06
64	2.08	0.05	0.00	0.05
65	2.21	0.05	0.00	0.05
66	2.34	0.05	0.00	0.05
67	2.48	0.05	0.00	0.05
68	2.63	0.05	0.00	0.05
69	2.79	0.05	0.00	0.05
70	2.95	0.04	0.00	0.04
71	3.13	0.04	0.00	0.04
72	3.32	0.04	0.00	0.04
73	3.51	0.04	0.00	0.04
74	3.72	0.04	0.00	0.04
75	3.95	0.04	0.00	0.04
76	4.18	0.04	0.00	0.04
77	4.43	0.03	0.00	0.03
78	4.69	0.04	0.00	0.04
79	4.97	0.03	0.00	0.03

PT-MW-2 Rising Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-2 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/23/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 551                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 8.6 ft
```

```
     Initial Displacement
          Fixed Value                  = 2.883 ft

     Hydraulic Conductivity
          Calculated Value             = 1.54156e-005 cm/sec

     Time to 37% Displacement
          Calculated Value             = 239.527 min

     Linear Regression Slope
          Fixed Value                  = -0.0041509 /min

     Linear Regression Intercept
          Fixed Value                  = 0.88308

     Calculation Type
          Selected Value               = Partial - Top

     Kz/Kr
          Fixed Value                  = 0.5


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -0.004151 /min
                  Intercept:    0.883080 dimensionless

     Residual Mean          =  0.154316
     Residual Standard Dev. =  0.163104
     Residual Sum of Squares =  27.779359
     Absolute Residual Mean =  0.174990
     Minimum Residual       = -0.064470
     Maximum Residual       =  0.392985


DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.04	2.88	2.55	0.34
1	0.06	2.60	2.55	0.05
2	0.08	2.57	2.55	0.02
3	0.11	2.56	2.54	0.01
4	0.13	2.55	2.54	0.00
5	0.16	2.54	2.54	0.00
6	0.18	2.53	2.54	-0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
7	0.21	2.54	2.54	0.00
8	0.24	2.52	2.54	-0.02
9	0.27	2.51	2.54	-0.03
10	0.31	2.54	2.54	0.00
11	0.34	2.53	2.54	-0.02
12	0.38	2.52	2.54	-0.02
13	0.42	2.52	2.54	-0.02
14	0.47	2.52	2.54	-0.02
15	0.51	2.52	2.54	-0.02
16	0.56	2.52	2.54	-0.02
17	0.61	2.52	2.54	-0.02
18	0.67	2.52	2.54	-0.02
19	0.73	2.52	2.54	-0.01
20	0.79	2.52	2.54	-0.01
21	0.85	2.52	2.54	-0.02
22	0.92	2.52	2.54	-0.02
23	1.00	2.52	2.54	-0.01
24	1.08	2.52	2.53	-0.01
25	1.16	2.52	2.53	-0.01
26	1.25	2.52	2.53	-0.01
27	1.34	2.52	2.53	-0.01
28	1.44	2.52	2.53	-0.01
29	1.54	2.52	2.53	-0.01
30	1.65	2.51	2.53	-0.01
31	1.77	2.51	2.53	-0.02
32	1.90	2.51	2.53	-0.02
33	2.03	2.51	2.52	-0.02
34	2.17	2.51	2.52	-0.02
35	2.32	2.50	2.52	-0.02
36	2.47	2.50	2.52	-0.02
37	2.64	2.50	2.52	-0.02
38	2.82	2.49	2.52	-0.02
39	3.00	2.49	2.51	-0.02
40	3.20	2.49	2.51	-0.02
41	3.41	2.48	2.51	-0.03
42	3.63	2.48	2.51	-0.03
43	3.87	2.48	2.51	-0.03
44	4.12	2.47	2.50	-0.03
45	4.38	2.47	2.50	-0.03
46	4.66	2.47	2.50	-0.03
47	4.96	2.46	2.49	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
48	5.27	2.46	2.49	-0.03
49	5.60	2.45	2.49	-0.03
50	5.95	2.45	2.48	-0.04
51	6.33	2.44	2.48	-0.04
52	6.72	2.44	2.48	-0.04
53	7.14	2.43	2.47	-0.04
54	7.58	2.43	2.47	-0.04
55	8.05	2.42	2.46	-0.04
56	8.55	2.42	2.46	-0.04
57	9.08	2.41	2.45	-0.04
58	9.64	2.40	2.45	-0.05
59	10.23	2.39	2.44	-0.05
60	10.85	2.39	2.43	-0.05
61	11.52	2.38	2.43	-0.05
62	12.22	2.37	2.42	-0.05
63	12.97	2.36	2.41	-0.05
64	13.76	2.35	2.40	-0.05
65	14.59	2.34	2.40	-0.06
66	15.48	2.33	2.39	-0.06
67	16.42	2.32	2.38	-0.06
68	17.41	2.31	2.37	-0.06
69	18.41	2.30	2.36	-0.06
70	19.41	2.29	2.35	-0.06
71	20.41	2.28	2.34	-0.06
72	21.41	2.27	2.33	-0.06
73	22.41	2.26	2.32	-0.06
74	23.41	2.25	2.31	-0.06
75	24.41	2.24	2.30	-0.06
76	25.41	2.23	2.29	-0.06
77	26.41	2.22	2.28	-0.06
78	27.41	2.21	2.27	-0.06
79	28.41	2.20	2.26	-0.06
80	29.41	2.19	2.25	-0.06
81	30.41	2.18	2.24	-0.06
82	31.41	2.17	2.23	-0.06
83	32.41	2.16	2.23	-0.06
84	33.41	2.15	2.22	-0.06
85	34.41	2.14	2.21	-0.06
86	35.41	2.13	2.20	-0.06
87	36.41	2.13	2.19	-0.06
88	37.41	2.12	2.18	-0.06

Index	Time	Obs. Displacement	Calc. Displacement	Residual
89	38.41	2.11	2.17	-0.06
90	39.41	2.10	2.16	-0.06
91	40.41	2.10	2.15	-0.06
92	41.41	2.09	2.14	-0.06
93	42.41	2.08	2.13	-0.06
94	43.41	2.07	2.13	-0.06
95	44.41	2.06	2.12	-0.06
96	45.41	2.05	2.11	-0.06
97	46.41	2.04	2.10	-0.06
98	47.41	2.03	2.09	-0.06
99	48.41	2.03	2.08	-0.06
100	49.41	2.02	2.07	-0.06
101	50.41	2.01	2.07	-0.06
102	51.41	2.00	2.06	-0.05
103	52.41	2.00	2.05	-0.05
104	53.41	1.99	2.04	-0.05
105	54.41	1.98	2.03	-0.05
106	55.41	1.97	2.02	-0.05
107	56.41	1.97	2.01	-0.05
108	57.41	1.96	2.01	-0.05
109	58.41	1.95	2.00	-0.05
110	59.41	1.94	1.99	-0.05
111	60.41	1.93	1.98	-0.05
112	61.41	1.92	1.97	-0.05
113	62.41	1.92	1.96	-0.05
114	63.41	1.91	1.96	-0.05
115	64.41	1.90	1.95	-0.05
116	65.41	1.89	1.94	-0.05
117	66.41	1.89	1.93	-0.05
118	67.41	1.88	1.92	-0.05
119	68.41	1.87	1.92	-0.05
120	69.41	1.86	1.91	-0.04
121	70.41	1.86	1.90	-0.04
122	71.41	1.85	1.89	-0.04
123	72.41	1.84	1.89	-0.04
124	73.41	1.83	1.88	-0.04
125	74.41	1.83	1.87	-0.04
126	75.41	1.82	1.86	-0.04
127	76.41	1.81	1.85	-0.04
128	77.41	1.81	1.85	-0.04
129	78.41	1.80	1.84	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
130	79.41	1.79	1.83	-0.04
131	80.41	1.79	1.82	-0.04
132	81.41	1.78	1.82	-0.03
133	82.41	1.78	1.81	-0.03
134	83.41	1.77	1.80	-0.03
135	84.41	1.76	1.79	-0.03
136	85.41	1.76	1.79	-0.03
137	86.41	1.75	1.78	-0.03
138	87.41	1.74	1.77	-0.03
139	88.41	1.74	1.76	-0.03
140	89.41	1.73	1.76	-0.03
141	90.41	1.72	1.75	-0.03
142	91.41	1.72	1.74	-0.03
143	92.41	1.71	1.73	-0.02
144	93.41	1.71	1.73	-0.02
145	94.41	1.70	1.72	-0.02
146	95.41	1.70	1.71	-0.02
147	96.41	1.69	1.71	-0.02
148	97.41	1.68	1.70	-0.02
149	98.41	1.68	1.69	-0.02
150	99.41	1.67	1.69	-0.01
151	100.41	1.67	1.68	-0.01
152	101.41	1.66	1.67	-0.01
153	102.41	1.65	1.66	-0.01
154	103.41	1.65	1.66	-0.01
155	104.41	1.64	1.65	-0.01
156	105.41	1.63	1.64	-0.01
157	106.41	1.63	1.64	-0.01
158	107.41	1.62	1.63	-0.01
159	108.41	1.62	1.62	0.00
160	109.41	1.62	1.62	0.00
161	110.41	1.61	1.61	0.00
162	111.41	1.60	1.60	0.00
163	112.41	1.60	1.60	0.00
164	113.41	1.59	1.59	0.00
165	114.41	1.59	1.58	0.00
166	115.41	1.58	1.58	0.00
167	116.41	1.57	1.57	0.00
168	117.41	1.57	1.56	0.00
169	118.41	1.56	1.56	0.00
170	119.41	1.56	1.55	0.00

Index	Time	Obs. Displacement	Calc. Displacement	Residual
171	120.41	1.55	1.54	0.01
172	121.41	1.55	1.54	0.01
173	122.41	1.54	1.53	0.01
174	123.41	1.54	1.53	0.01
175	124.41	1.53	1.52	0.01
176	125.41	1.53	1.51	0.02
177	126.41	1.53	1.51	0.02
178	127.41	1.52	1.50	0.02
179	128.41	1.52	1.49	0.02
180	129.41	1.51	1.49	0.02
181	130.41	1.50	1.48	0.02
182	131.41	1.50	1.48	0.02
183	132.41	1.49	1.47	0.02
184	133.41	1.49	1.46	0.02
185	134.41	1.48	1.46	0.02
186	135.41	1.47	1.45	0.02
187	136.41	1.47	1.45	0.02
188	137.41	1.47	1.44	0.03
189	138.41	1.46	1.43	0.03
190	139.41	1.46	1.43	0.03
191	140.41	1.45	1.42	0.03
192	141.41	1.45	1.42	0.03
193	142.41	1.44	1.41	0.03
194	143.41	1.44	1.40	0.04
195	144.41	1.44	1.40	0.04
196	145.41	1.43	1.39	0.04
197	146.41	1.42	1.39	0.04
198	147.41	1.42	1.38	0.04
199	148.41	1.41	1.38	0.04
200	149.41	1.41	1.37	0.04
201	150.41	1.40	1.36	0.04
202	151.41	1.40	1.36	0.04
203	152.41	1.39	1.35	0.04
204	153.41	1.38	1.35	0.04
205	154.41	1.38	1.34	0.04
206	155.41	1.38	1.34	0.04
207	156.41	1.38	1.33	0.04
208	157.41	1.37	1.32	0.05
209	158.41	1.37	1.32	0.05
210	159.41	1.36	1.31	0.05
211	160.41	1.36	1.31	0.05

Index	Time	Obs. Displacement	Calc. Displacement	Residual
212	161.41	1.35	1.30	0.05
213	162.41	1.35	1.30	0.05
214	163.41	1.34	1.29	0.05
215	164.41	1.34	1.29	0.05
216	165.41	1.34	1.28	0.05
217	166.41	1.33	1.28	0.05
218	167.41	1.33	1.27	0.06
219	168.41	1.32	1.27	0.06
220	169.41	1.32	1.26	0.06
221	170.41	1.32	1.26	0.06
222	171.41	1.31	1.25	0.06
223	172.41	1.31	1.24	0.06
224	173.41	1.31	1.24	0.07
225	174.41	1.30	1.23	0.07
226	175.41	1.30	1.23	0.07
227	176.41	1.29	1.22	0.07
228	177.41	1.29	1.22	0.07
229	178.41	1.29	1.21	0.07
230	179.41	1.28	1.21	0.07
231	180.41	1.28	1.20	0.08
232	181.41	1.28	1.20	0.08
233	182.41	1.27	1.19	0.08
234	183.41	1.27	1.19	0.08
235	184.41	1.27	1.18	0.08
236	185.41	1.26	1.18	0.08
237	186.41	1.26	1.17	0.08
238	187.41	1.26	1.17	0.09
239	188.41	1.25	1.16	0.09
240	189.41	1.25	1.16	0.09
241	190.41	1.25	1.16	0.09
242	191.41	1.25	1.15	0.10
243	192.41	1.24	1.15	0.10
244	193.41	1.24	1.14	0.10
245	194.41	1.24	1.14	0.10
246	195.41	1.23	1.13	0.10
247	196.41	1.23	1.13	0.11
248	197.41	1.23	1.12	0.11
249	198.41	1.23	1.12	0.11
250	199.41	1.22	1.11	0.11
251	200.41	1.22	1.11	0.11
252	201.41	1.22	1.10	0.11

Index	Time	Obs. Displacement	Calc. Displacement	Residual
253	202.41	1.21	1.10	0.11
254	203.41	1.21	1.09	0.11
255	204.41	1.21	1.09	0.12
256	205.41	1.20	1.09	0.12
257	206.41	1.20	1.08	0.12
258	207.41	1.20	1.08	0.12
259	208.41	1.19	1.07	0.12
260	209.41	1.19	1.07	0.12
261	210.41	1.19	1.06	0.12
262	211.41	1.18	1.06	0.12
263	212.41	1.18	1.05	0.13
264	213.41	1.18	1.05	0.13
265	214.41	1.18	1.05	0.13
266	215.41	1.17	1.04	0.13
267	216.41	1.17	1.04	0.13
268	217.41	1.17	1.03	0.13
269	218.41	1.16	1.03	0.13
270	219.41	1.16	1.02	0.14
271	220.41	1.16	1.02	0.14
272	221.41	1.16	1.02	0.14
273	222.41	1.15	1.01	0.14
274	223.41	1.15	1.01	0.14
275	224.41	1.14	1.00	0.14
276	225.41	1.14	1.00	0.14
277	226.41	1.14	0.99	0.14
278	227.41	1.13	0.99	0.14
279	228.41	1.13	0.99	0.14
280	229.41	1.13	0.98	0.14
281	230.41	1.12	0.98	0.14
282	231.41	1.12	0.97	0.15
283	232.41	1.12	0.97	0.15
284	233.41	1.11	0.97	0.15
285	234.41	1.11	0.96	0.15
286	235.41	1.11	0.96	0.15
287	236.41	1.11	0.95	0.15
288	237.41	1.11	0.95	0.15
289	238.41	1.10	0.95	0.16
290	239.41	1.10	0.94	0.16
291	240.41	1.10	0.94	0.16
292	241.41	1.09	0.93	0.16
293	242.41	1.09	0.93	0.16

Index	Time	Obs. Displacement	Calc. Displacement	Residual
294	243.41	1.09	0.93	0.16
295	244.41	1.08	0.92	0.16
296	245.41	1.08	0.92	0.16
297	246.41	1.08	0.92	0.16
298	247.41	1.08	0.91	0.17
299	248.41	1.08	0.91	0.17
300	249.41	1.08	0.90	0.17
301	250.41	1.07	0.90	0.17
302	251.41	1.07	0.90	0.17
303	252.41	1.07	0.89	0.17
304	253.41	1.06	0.89	0.17
305	254.41	1.06	0.89	0.18
306	255.41	1.06	0.88	0.18
307	256.41	1.06	0.88	0.18
308	257.41	1.05	0.87	0.18
309	258.41	1.05	0.87	0.18
310	259.41	1.05	0.87	0.18
311	260.41	1.05	0.86	0.18
312	261.41	1.05	0.86	0.19
313	262.41	1.04	0.86	0.19
314	263.41	1.04	0.85	0.19
315	264.41	1.04	0.85	0.19
316	265.41	1.04	0.85	0.19
317	266.41	1.04	0.84	0.20
318	267.41	1.03	0.84	0.19
319	268.41	1.03	0.84	0.20
320	269.41	1.03	0.83	0.20
321	270.41	1.03	0.83	0.20
322	271.41	1.02	0.83	0.20
323	272.41	1.02	0.82	0.20
324	273.41	1.02	0.82	0.20
325	274.41	1.02	0.82	0.21
326	275.41	1.02	0.81	0.21
327	276.41	1.02	0.81	0.21
328	277.41	1.02	0.80	0.21
329	278.41	1.02	0.80	0.21
330	279.41	1.01	0.80	0.21
331	280.41	1.01	0.79	0.22
332	281.41	1.01	0.79	0.22
333	282.41	1.01	0.79	0.22
334	283.41	1.01	0.79	0.22

Index	Time	Obs. Displacement	Calc. Displacement	Residual
335	284.41	1.00	0.78	0.22
336	285.41	1.00	0.78	0.22
337	286.41	1.00	0.78	0.23
338	287.41	1.00	0.77	0.23
339	288.41	1.00	0.77	0.23
340	289.41	0.99	0.77	0.23
341	290.41	0.99	0.76	0.23
342	291.41	0.99	0.76	0.23
343	292.41	0.99	0.76	0.23
344	293.41	0.99	0.75	0.23
345	294.41	0.99	0.75	0.23
346	295.41	0.99	0.75	0.24
347	296.41	0.99	0.74	0.24
348	297.41	0.98	0.74	0.24
349	298.41	0.98	0.74	0.24
350	299.41	0.98	0.73	0.25
351	300.41	0.98	0.73	0.25
352	301.41	0.98	0.73	0.25
353	302.41	0.98	0.73	0.25
354	303.41	0.98	0.72	0.25
355	304.41	0.97	0.72	0.25
356	305.41	0.97	0.72	0.25
357	306.41	0.97	0.71	0.26
358	307.41	0.97	0.71	0.26
359	308.41	0.96	0.71	0.26
360	309.41	0.96	0.70	0.26
361	310.41	0.96	0.70	0.26
362	311.41	0.96	0.70	0.26
363	312.41	0.96	0.70	0.26
364	313.41	0.96	0.69	0.26
365	314.41	0.96	0.69	0.27
366	315.41	0.96	0.69	0.27
367	316.41	0.95	0.68	0.27
368	317.41	0.95	0.68	0.27
369	318.41	0.95	0.68	0.27
370	319.41	0.95	0.68	0.27
371	320.41	0.95	0.67	0.28
372	321.41	0.95	0.67	0.28
373	322.41	0.95	0.67	0.28
374	323.41	0.94	0.67	0.28
375	324.41	0.94	0.66	0.28

Index	Time	Obs. Displacement	Calc. Displacement	Residual
376	325.41	0.94	0.66	0.28
377	326.41	0.94	0.66	0.28
378	327.41	0.94	0.65	0.28
379	328.41	0.94	0.65	0.29
380	329.41	0.94	0.65	0.29
381	330.41	0.93	0.65	0.29
382	331.41	0.93	0.64	0.29
383	332.41	0.93	0.64	0.29
384	333.41	0.93	0.64	0.29
385	334.41	0.93	0.64	0.29
386	335.41	0.93	0.63	0.29
387	336.41	0.93	0.63	0.30
388	337.41	0.93	0.63	0.30
389	338.41	0.92	0.62	0.30
390	339.41	0.92	0.62	0.30
391	340.41	0.92	0.62	0.30
392	341.41	0.92	0.62	0.30
393	342.41	0.92	0.61	0.30
394	343.41	0.91	0.61	0.30
395	344.41	0.91	0.61	0.30
396	345.41	0.91	0.61	0.31
397	346.41	0.91	0.60	0.31
398	347.41	0.91	0.60	0.31
399	348.41	0.91	0.60	0.31
400	349.41	0.91	0.60	0.31
401	350.41	0.91	0.59	0.31
402	351.41	0.90	0.59	0.31
403	352.41	0.90	0.59	0.31
404	353.41	0.90	0.59	0.31
405	354.41	0.90	0.58	0.32
406	355.41	0.90	0.58	0.31
407	356.41	0.90	0.58	0.32
408	357.41	0.90	0.58	0.32
409	358.41	0.89	0.58	0.32
410	359.41	0.89	0.57	0.32
411	360.41	0.89	0.57	0.32
412	361.41	0.89	0.57	0.32
413	362.41	0.89	0.57	0.32
414	363.41	0.89	0.56	0.32
415	364.41	0.88	0.56	0.32
416	365.41	0.88	0.56	0.33

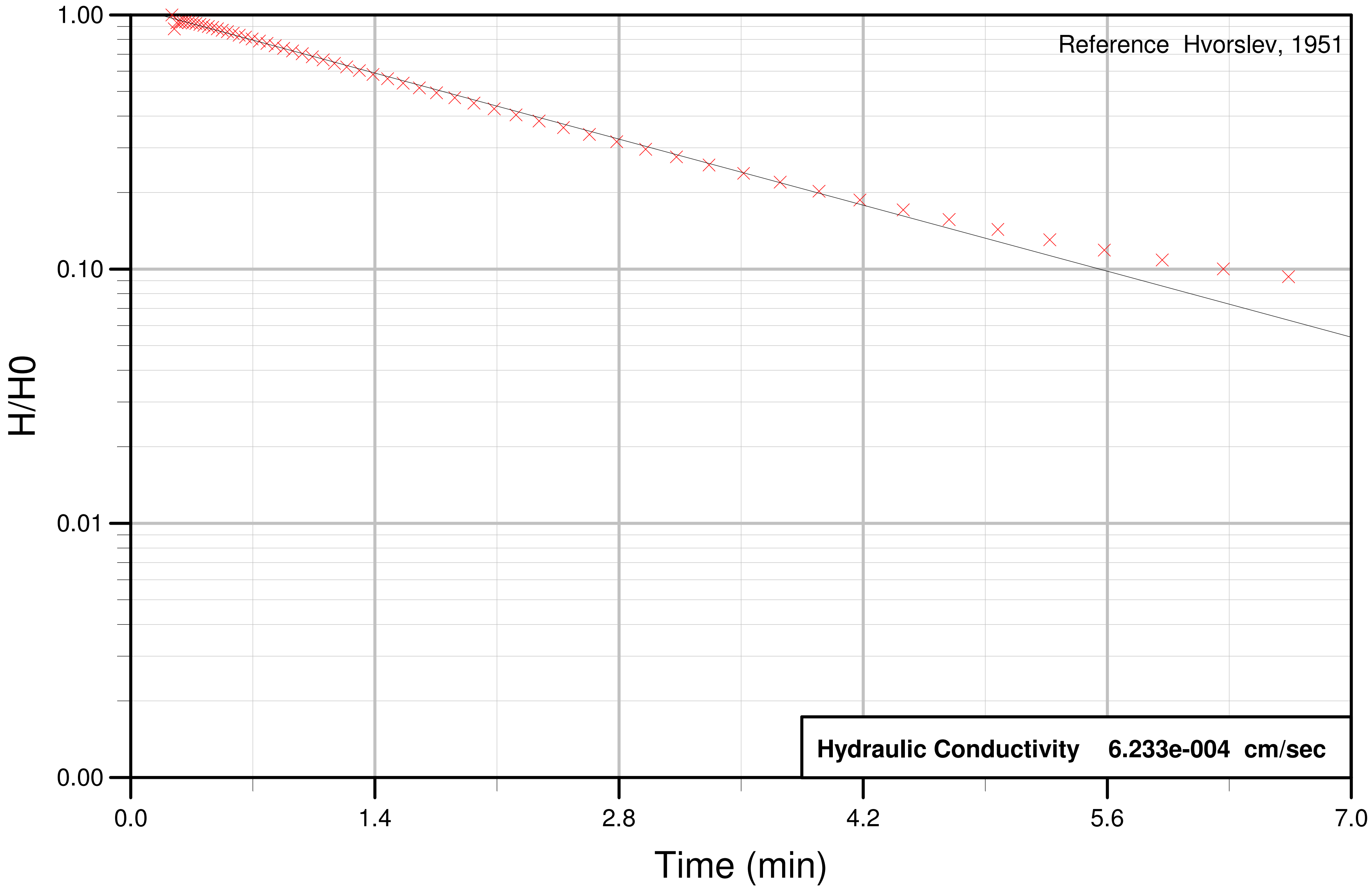
Index	Time	Obs. Displacement	Calc. Displacement	Residual
417	366.41	0.88	0.56	0.33
418	367.41	0.88	0.55	0.33
419	368.41	0.88	0.55	0.33
420	369.41	0.88	0.55	0.33
421	370.41	0.88	0.55	0.33
422	371.41	0.88	0.54	0.33
423	372.41	0.88	0.54	0.33
424	373.41	0.88	0.54	0.34
425	374.41	0.88	0.54	0.34
426	375.41	0.87	0.54	0.34
427	376.41	0.87	0.53	0.34
428	377.41	0.87	0.53	0.34
429	378.41	0.87	0.53	0.34
430	379.41	0.87	0.53	0.34
431	380.41	0.87	0.52	0.34
432	381.41	0.87	0.52	0.34
433	382.41	0.87	0.52	0.35
434	383.41	0.87	0.52	0.35
435	384.41	0.87	0.52	0.35
436	385.41	0.87	0.51	0.35
437	386.41	0.86	0.51	0.35
438	387.41	0.86	0.51	0.35
439	388.41	0.86	0.51	0.35
440	389.41	0.86	0.51	0.35
441	390.41	0.86	0.50	0.35
442	391.41	0.86	0.50	0.36
443	392.41	0.86	0.50	0.36
444	393.41	0.86	0.50	0.36
445	394.41	0.86	0.50	0.36
446	395.41	0.85	0.49	0.36
447	396.41	0.85	0.49	0.36
448	397.41	0.85	0.49	0.36
449	398.41	0.85	0.49	0.36
450	399.41	0.85	0.49	0.36
451	400.41	0.85	0.48	0.36
452	401.41	0.85	0.48	0.37
453	402.41	0.84	0.48	0.36
454	403.41	0.84	0.48	0.37
455	404.41	0.84	0.48	0.37
456	405.41	0.84	0.47	0.37
457	406.41	0.84	0.47	0.37

Index	Time	Obs. Displacement	Calc. Displacement	Residual
458	407.41	0.84	0.47	0.37
459	408.41	0.84	0.47	0.37
460	409.41	0.84	0.47	0.37
461	410.41	0.84	0.46	0.37
462	411.41	0.83	0.46	0.37
463	412.41	0.83	0.46	0.37
464	413.41	0.83	0.46	0.38
465	414.41	0.83	0.46	0.38
466	415.41	0.83	0.45	0.38
467	416.41	0.83	0.45	0.38
468	417.41	0.83	0.45	0.38
469	418.41	0.83	0.45	0.38
470	419.41	0.82	0.45	0.38
471	420.41	0.82	0.44	0.38
472	421.41	0.82	0.44	0.38
473	422.41	0.82	0.44	0.38
474	423.41	0.82	0.44	0.38
475	424.41	0.81	0.44	0.38
476	425.41	0.81	0.44	0.38
477	426.41	0.81	0.43	0.38
478	427.41	0.81	0.43	0.38
479	428.41	0.81	0.43	0.38
480	429.41	0.81	0.43	0.38
481	430.41	0.81	0.43	0.38
482	431.41	0.80	0.42	0.38
483	432.41	0.80	0.42	0.38
484	433.41	0.80	0.42	0.38
485	434.41	0.80	0.42	0.38
486	435.41	0.80	0.42	0.38
487	436.41	0.79	0.42	0.38
488	437.41	0.79	0.41	0.38
489	438.41	0.79	0.41	0.38
490	439.41	0.79	0.41	0.38
491	440.41	0.78	0.41	0.37
492	441.41	0.78	0.41	0.38
493	442.41	0.78	0.41	0.38
494	443.41	0.78	0.40	0.38
495	444.41	0.78	0.40	0.38
496	445.41	0.78	0.40	0.38
497	446.41	0.78	0.40	0.38
498	447.41	0.77	0.40	0.37

Index	Time	Obs. Displacement	Calc. Displacement	Residual
499	448.41	0.77	0.40	0.37
500	449.41	0.77	0.39	0.37
501	450.41	0.77	0.39	0.37
502	451.41	0.76	0.39	0.37
503	452.41	0.76	0.39	0.37
504	453.41	0.76	0.39	0.37
505	454.41	0.76	0.39	0.37
506	455.41	0.76	0.38	0.37
507	456.41	0.76	0.38	0.37
508	457.41	0.76	0.38	0.38
509	458.41	0.75	0.38	0.37
510	459.41	0.75	0.38	0.37
511	460.41	0.75	0.38	0.38
512	461.41	0.75	0.38	0.37
513	462.41	0.75	0.37	0.37
514	463.41	0.75	0.37	0.37
515	464.41	0.75	0.37	0.37
516	465.41	0.74	0.37	0.37
517	466.41	0.74	0.37	0.38
518	467.41	0.74	0.37	0.37
519	468.41	0.74	0.36	0.38
520	469.41	0.74	0.36	0.38
521	470.41	0.74	0.36	0.38
522	471.41	0.74	0.36	0.38
523	472.41	0.74	0.36	0.38
524	473.41	0.74	0.36	0.38
525	474.41	0.74	0.36	0.38
526	475.41	0.74	0.35	0.38
527	476.41	0.73	0.35	0.38
528	477.41	0.73	0.35	0.38
529	478.41	0.73	0.35	0.38
530	479.41	0.73	0.35	0.38
531	480.41	0.73	0.35	0.38
532	481.41	0.73	0.35	0.39
533	482.41	0.73	0.34	0.39
534	483.41	0.73	0.34	0.39
535	484.41	0.73	0.34	0.39
536	485.41	0.73	0.34	0.39
537	486.41	0.73	0.34	0.39
538	487.41	0.73	0.34	0.39
539	488.41	0.73	0.34	0.39

Index	Time	Obs. Displacement	Calc. Displacement	Residual
540	489.41	0.72	0.33	0.39
541	490.41	0.72	0.33	0.39
542	491.41	0.72	0.33	0.39
543	492.41	0.72	0.33	0.39
544	493.41	0.72	0.33	0.39
545	494.41	0.72	0.33	0.39
546	495.41	0.72	0.33	0.39
547	496.41	0.72	0.32	0.39
548	497.41	0.71	0.32	0.39
549	498.41	0.71	0.32	0.39
550	499.41	0.71	0.32	0.39

PT-MW-3 Falling Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-3 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 59                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Length
            Fixed Value                  = 14.4 ft
```

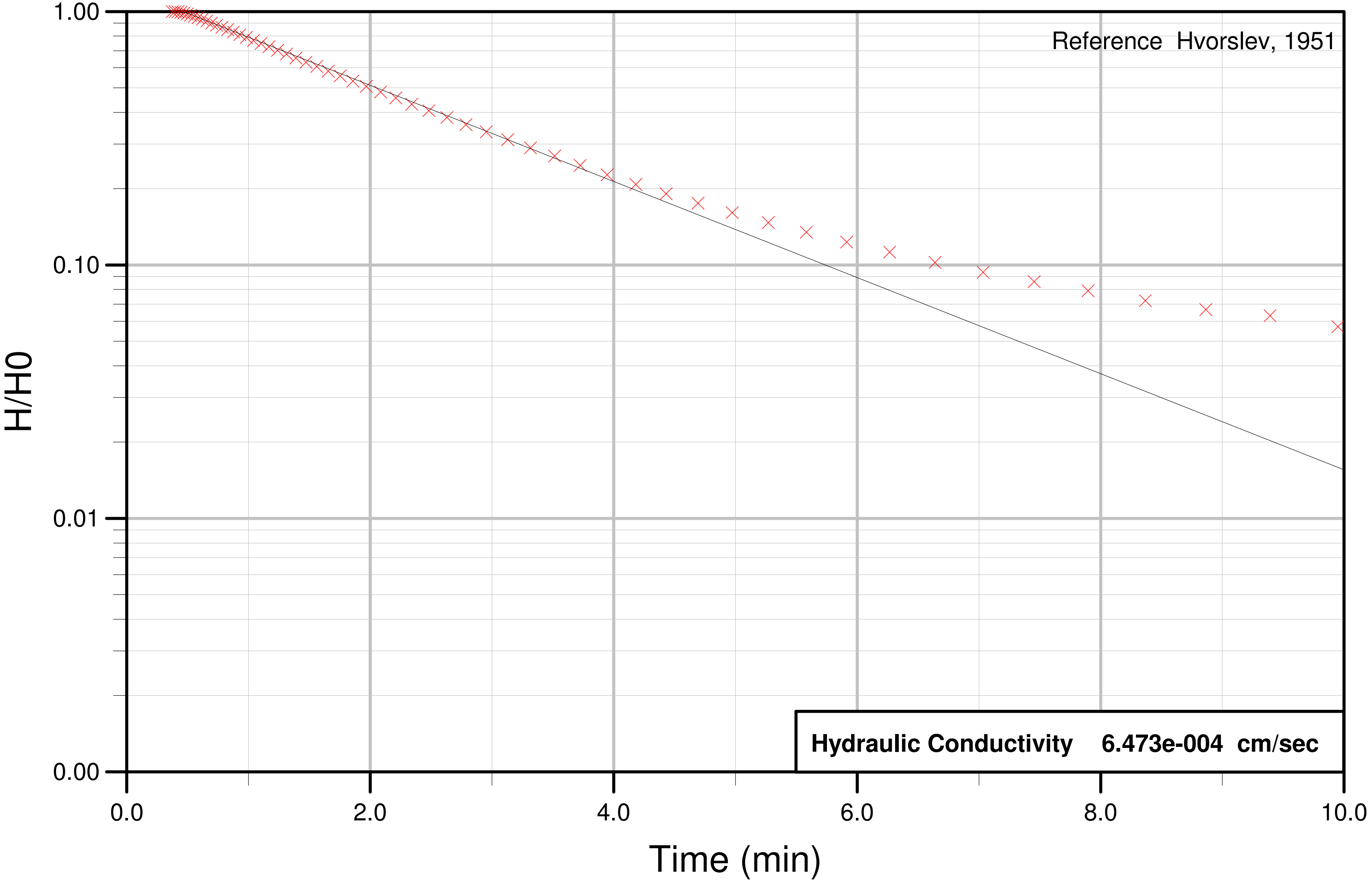
```
     Initial Displacement
          Fixed Value                    = 5.23 ft

     Hydraulic Conductivity
          Calculated Value               = 0.000623336 cm/sec

     Time to 37% Displacement
          Calculated Value               = 2.50099 min

     Linear Regression Slope
          Fixed Value                    = -0.427453 /min

     Linear Regression Intercept
          Fixed Value                    = 1.07767

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:        -0.427453 /min
                  Intercept:     1.077673 dimensionless

     Residual Mean           = -0.011092
     Residual Standard Dev.  =  0.087592
     Residual Sum of Squares =  0.459924
     Absolute Residual Mean  =  0.061620
     Minimum Residual        = -0.453424
     Maximum Residual        =  0.158064


DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.24	5.23	5.10	0.13
1	0.25	4.61	5.07	-0.45
2	0.26	4.87	5.03	-0.16
3	0.28	4.90	5.00	-0.10
4	0.30	4.90	4.96	-0.07
5	0.31	4.91	4.93	-0.02
6	0.33	4.90	4.89	0.01
7	0.35	4.86	4.85	0.01
8	0.37	4.84	4.80	0.03
9	0.40	4.80	4.76	0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.42	4.76	4.71	0.05
11	0.44	4.71	4.66	0.05
12	0.47	4.67	4.61	0.05
13	0.50	4.61	4.56	0.05
14	0.52	4.55	4.50	0.05
15	0.55	4.49	4.45	0.05
16	0.59	4.43	4.39	0.04
17	0.62	4.35	4.32	0.03
18	0.66	4.28	4.25	0.02
19	0.70	4.20	4.19	0.02
20	0.74	4.12	4.11	0.01
21	0.78	4.04	4.04	0.01
22	0.83	3.95	3.96	0.00
23	0.88	3.86	3.88	-0.01
24	0.93	3.77	3.79	-0.02
25	0.98	3.68	3.70	-0.03
26	1.04	3.58	3.61	-0.03
27	1.10	3.48	3.52	-0.04
28	1.17	3.37	3.42	-0.05
29	1.24	3.27	3.32	-0.05
30	1.31	3.16	3.22	-0.06
31	1.39	3.05	3.11	-0.06
32	1.47	2.93	3.00	-0.07
33	1.56	2.82	2.89	-0.07
34	1.65	2.70	2.78	-0.08
35	1.75	2.58	2.66	-0.08
36	1.86	2.47	2.55	-0.08
37	1.97	2.35	2.43	-0.08
38	2.08	2.23	2.31	-0.08
39	2.21	2.11	2.19	-0.08
40	2.34	2.00	2.07	-0.07
41	2.48	1.88	1.95	-0.07
42	2.63	1.77	1.83	-0.06
43	2.79	1.66	1.71	-0.06
44	2.95	1.55	1.60	-0.05
45	3.13	1.45	1.48	-0.03
46	3.32	1.34	1.37	-0.02
47	3.51	1.25	1.25	-0.01
48	3.72	1.15	1.15	0.00
49	3.95	1.06	1.04	0.02
50	4.18	0.98	0.94	0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	4.43	0.89	0.85	0.05
52	4.69	0.82	0.76	0.06
53	4.97	0.75	0.67	0.08
54	5.27	0.68	0.59	0.09
55	5.58	0.62	0.52	0.10
56	5.91	0.57	0.45	0.12
57	6.27	0.52	0.39	0.14
58	6.64	0.49	0.33	0.16

PT-MW-3 Falling Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-3 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 58                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Length
            Fixed Value                  = 14.4 ft
```

```
     Initial Displacement
          Fixed Value                    = 4.768 ft

     Hydraulic Conductivity
          Calculated Value               = 0.000647322 cm/sec

     Time to 37% Displacement
          Calculated Value               = 2.74877 min

     Linear Regression Slope
          Fixed Value                    = -0.437271 /min

     Linear Regression Intercept
          Fixed Value                    = 1.23085

     Calculation Type
          Selected Value                 = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                  Slope:        -0.437271 /min
                  Intercept:     1.230849 dimensionless

     Residual Mean           =  0.002193
     Residual Standard Dev.  =  0.100318
     Residual Sum of Squares =  0.583974
     Absolute Residual Mean  =  0.082015
     Minimum Residual        = -0.215295
     Maximum Residual        =  0.204375
```

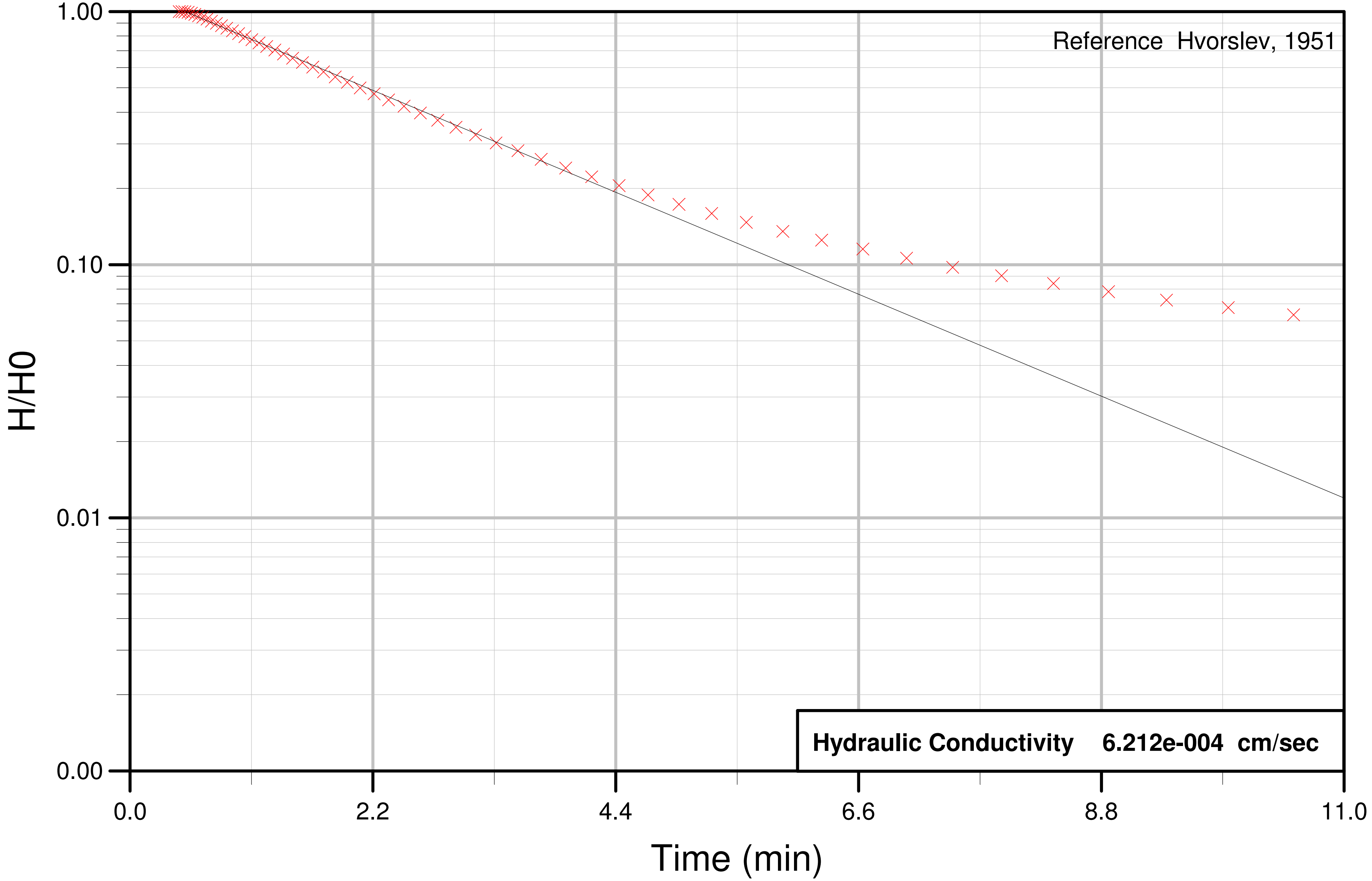
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.37	4.77	4.98	-0.22
1	0.40	4.77	4.93	-0.17
2	0.42	4.76	4.88	-0.13
3	0.44	4.74	4.83	-0.10
4	0.47	4.70	4.78	-0.08
5	0.50	4.67	4.72	-0.06
6	0.52	4.61	4.67	-0.05
7	0.55	4.57	4.60	-0.04
8	0.59	4.51	4.54	-0.03
9	0.62	4.45	4.47	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.66	4.37	4.40	-0.03
11	0.70	4.30	4.33	-0.03
12	0.74	4.21	4.25	-0.04
13	0.78	4.13	4.17	-0.04
14	0.83	4.04	4.09	-0.04
15	0.88	3.96	4.00	-0.05
16	0.93	3.86	3.91	-0.05
17	0.98	3.77	3.82	-0.05
18	1.04	3.67	3.72	-0.06
19	1.10	3.57	3.62	-0.06
20	1.17	3.46	3.52	-0.06
21	1.24	3.35	3.42	-0.06
22	1.31	3.24	3.31	-0.07
23	1.39	3.13	3.20	-0.07
24	1.47	3.01	3.08	-0.07
25	1.56	2.89	2.97	-0.07
26	1.65	2.77	2.85	-0.07
27	1.75	2.66	2.73	-0.07
28	1.86	2.54	2.60	-0.07
29	1.97	2.42	2.48	-0.07
30	2.08	2.30	2.36	-0.06
31	2.21	2.17	2.23	-0.06
32	2.34	2.06	2.11	-0.05
33	2.48	1.94	1.98	-0.05
34	2.63	1.82	1.86	-0.04
35	2.79	1.71	1.74	-0.03
36	2.95	1.60	1.61	-0.02
37	3.13	1.49	1.49	0.00
38	3.32	1.38	1.38	0.01
39	3.51	1.28	1.26	0.02
40	3.72	1.18	1.15	0.03
41	3.95	1.08	1.05	0.04
42	4.18	0.99	0.94	0.05
43	4.43	0.91	0.85	0.07
44	4.69	0.84	0.75	0.08
45	4.97	0.77	0.67	0.10
46	5.27	0.70	0.59	0.12
47	5.58	0.64	0.51	0.13
48	5.91	0.59	0.44	0.15
49	6.27	0.54	0.38	0.16
50	6.64	0.49	0.32	0.17

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
51	7.03	0.45	0.27	0.18
52	7.45	0.41	0.23	0.18
53	7.90	0.38	0.19	0.19
54	8.37	0.35	0.15	0.19
55	8.86	0.32	0.12	0.20
56	9.39	0.30	0.10	0.20
57	9.95	0.27	0.08	0.20

PT-MW-3 Falling Head Test 3



Hydraulic Conductivity 6.212e-004 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-3 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 56                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.297 ft

       Screen Inner Diameter
            Fixed Value                 = 0.297 ft

       Screen Length
            Fixed Value                 = 14.4 ft
```

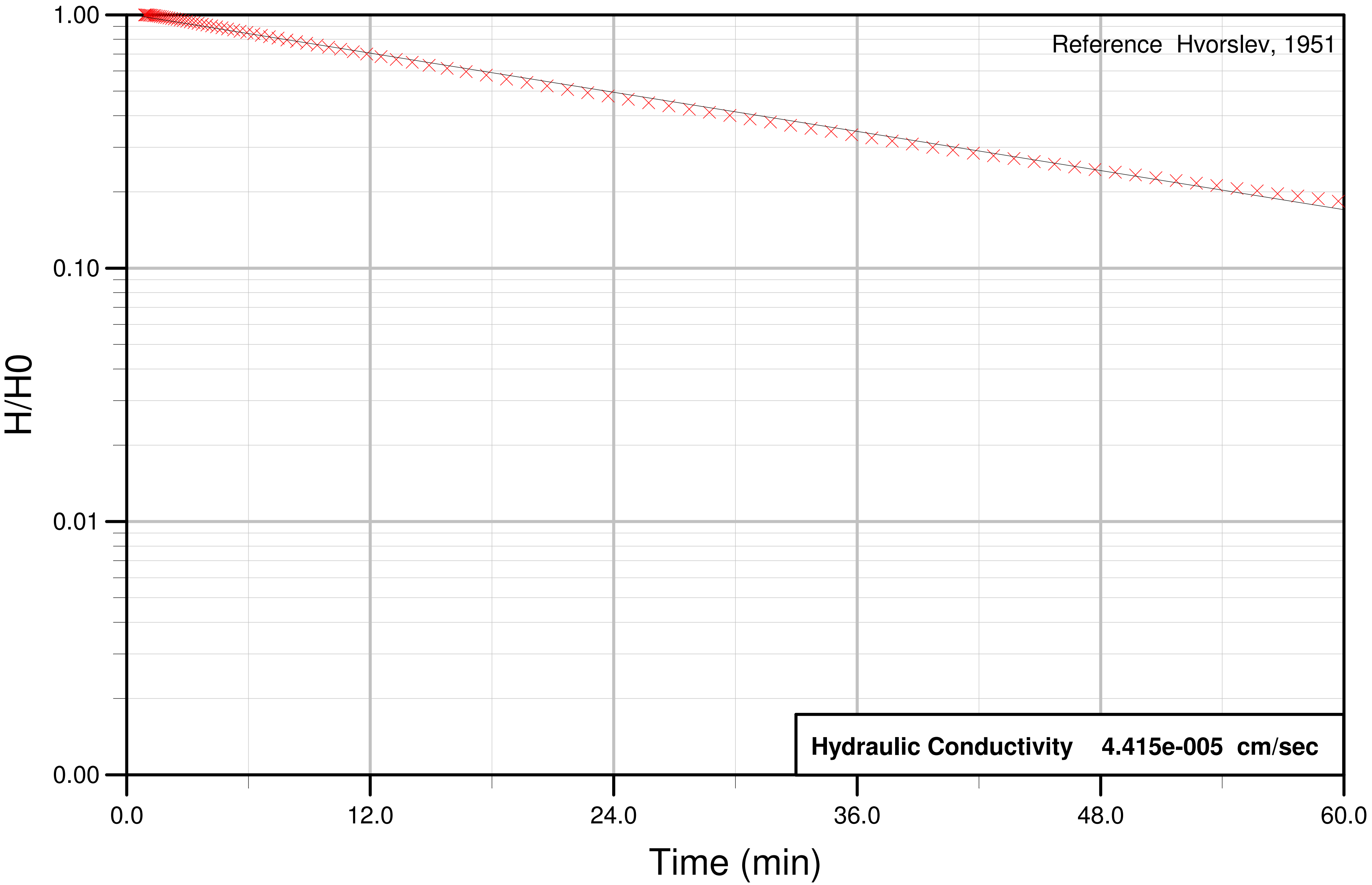
```
     Initial Displacement
          Fixed Value                    = 4.565 ft

     Hydraulic Conductivity
          Calculated Value               = 0.000621171 cm/sec

     Time to 37% Displacement
          Calculated Value               = 2.86449 min

     Linear Regression Slope
          Fixed Value                    = -0.422056 /min

     Linear Regression Intercept
          Fixed Value                    = 1.23952

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -0.422056 /min
                  Intercept:    1.239516 dimensionless

     Residual Mean           =  0.033418
     Residual Standard Dev.  =  0.097376
     Residual Sum of Squares =  0.593535
     Absolute Residual Mean  =  0.076729
     Minimum Residual        = -0.125483
     Maximum Residual        =  0.224092


DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.44	4.57	4.69	-0.13
1	0.47	4.57	4.64	-0.08
2	0.50	4.55	4.59	-0.04
3	0.52	4.53	4.53	0.00
4	0.55	4.49	4.48	0.01
5	0.59	4.45	4.42	0.03
6	0.62	4.39	4.35	0.04
7	0.66	4.33	4.29	0.04
8	0.70	4.26	4.22	0.04
9	0.74	4.18	4.14	0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.78	4.10	4.07	0.03
11	0.83	4.01	3.99	0.02
12	0.88	3.92	3.91	0.01
13	0.93	3.83	3.82	0.01
14	0.98	3.73	3.74	0.00
15	1.04	3.64	3.65	-0.01
16	1.10	3.53	3.55	-0.02
17	1.17	3.43	3.46	-0.03
18	1.24	3.32	3.36	-0.03
19	1.31	3.21	3.25	-0.04
20	1.39	3.10	3.15	-0.05
21	1.47	2.99	3.04	-0.05
22	1.56	2.87	2.93	-0.06
23	1.65	2.75	2.81	-0.06
24	1.75	2.64	2.70	-0.06
25	1.86	2.52	2.58	-0.06
26	1.97	2.40	2.47	-0.07
27	2.08	2.28	2.35	-0.07
28	2.21	2.16	2.23	-0.07
29	2.34	2.04	2.11	-0.06
30	2.48	1.93	1.99	-0.06
31	2.63	1.81	1.86	-0.05
32	2.79	1.70	1.75	-0.05
33	2.95	1.59	1.63	-0.03
34	3.13	1.49	1.51	-0.02
35	3.32	1.38	1.40	-0.01
36	3.51	1.29	1.28	0.00
37	3.72	1.19	1.17	0.01
38	3.95	1.10	1.07	0.03
39	4.18	1.02	0.97	0.05
40	4.43	0.94	0.87	0.07
41	4.69	0.86	0.78	0.08
42	4.97	0.79	0.69	0.10
43	5.27	0.73	0.61	0.11
44	5.58	0.67	0.54	0.13
45	5.91	0.62	0.47	0.15
46	6.27	0.57	0.40	0.17
47	6.64	0.53	0.34	0.18
48	7.03	0.48	0.29	0.19
49	7.45	0.45	0.24	0.20
50	7.90	0.41	0.20	0.21

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	8.37	0.39	0.17	0.22
52	8.86	0.36	0.13	0.22
53	9.39	0.33	0.11	0.22
54	9.95	0.31	0.08	0.22
55	10.54	0.29	0.07	0.22

PT-MW-4 Falling Head Test 1



Hydraulic Conductivity 4.415e-005 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-4 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 95                    Optimized Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 14.8 ft
```

```
Initial Displacement
     Fixed Value                 = 5.257 ft

Hydraulic Conductivity
     Calculated Value            = 4.41523e-005 cm/sec

Time to 37% Displacement
     Calculated Value            = 33.6784 min

Linear Regression Slope
     Fixed Value                 = -0.0298385 /min

Linear Regression Intercept
     Fixed Value                 = 1.01072

Calculation Type
     Selected Value              = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -0.029838 /min
             Intercept:    1.010718 dimensionless

Residual Mean           =  0.008996
Residual Standard Dev.  =  0.075702
Residual Sum of Squares =  0.552120
Absolute Residual Mean  =  0.067542
Minimum Residual        = -0.108858
Maximum Residual        =  0.119509
```

DATA DETAIL

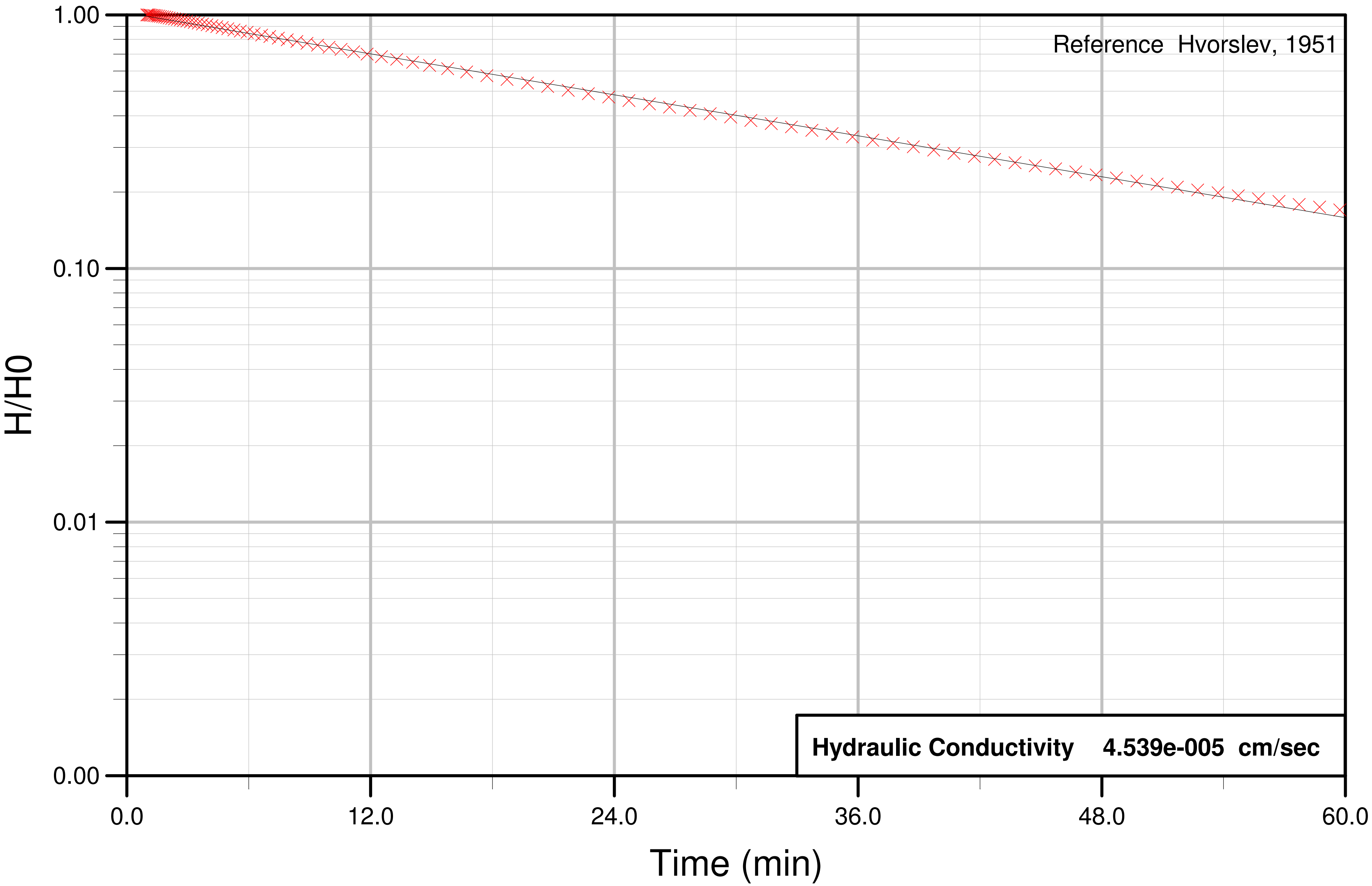
Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.88	5.26	5.18	0.08
1	0.93	5.25	5.17	0.08
2	0.98	5.25	5.16	0.09
3	1.04	5.25	5.15	0.10
4	1.10	5.25	5.14	0.10
5	1.17	5.24	5.13	0.11
6	1.24	5.23	5.12	0.11
7	1.31	5.22	5.11	0.11
8	1.39	5.22	5.10	0.12
9	1.47	5.20	5.08	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	1.56	5.19	5.07	0.12
11	1.65	5.18	5.06	0.12
12	1.75	5.16	5.04	0.12
13	1.86	5.15	5.03	0.12
14	1.97	5.13	5.01	0.12
15	2.08	5.11	4.99	0.11
16	2.21	5.09	4.97	0.11
17	2.34	5.07	4.95	0.11
18	2.48	5.04	4.93	0.11
19	2.63	5.01	4.91	0.10
20	2.79	4.99	4.89	0.10
21	2.95	4.96	4.87	0.09
22	3.13	4.93	4.84	0.09
23	3.32	4.90	4.81	0.09
24	3.51	4.87	4.78	0.08
25	3.72	4.83	4.75	0.07
26	3.95	4.79	4.72	0.07
27	4.18	4.75	4.69	0.06
28	4.43	4.72	4.66	0.06
29	4.69	4.67	4.62	0.05
30	4.97	4.62	4.58	0.04
31	5.27	4.58	4.54	0.04
32	5.58	4.53	4.50	0.03
33	5.91	4.48	4.45	0.02
34	6.27	4.43	4.41	0.02
35	6.64	4.37	4.36	0.01
36	7.03	4.31	4.31	0.00
37	7.45	4.25	4.25	0.00
38	7.90	4.19	4.20	−0.01
39	8.37	4.12	4.14	−0.02
40	8.86	4.06	4.08	−0.02
41	9.39	3.99	4.01	−0.03
42	9.95	3.92	3.95	−0.03
43	10.54	3.85	3.88	−0.03
44	11.17	3.76	3.81	−0.05
45	11.83	3.68	3.73	−0.05
46	12.53	3.60	3.66	−0.06
47	13.28	3.51	3.58	−0.07
48	14.07	3.42	3.49	−0.07
49	14.91	3.32	3.41	−0.08
50	15.79	3.23	3.32	−0.09

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	16.73	3.14	3.23	-0.09
52	17.72	3.04	3.13	-0.10
53	18.72	2.93	3.04	-0.11
54	19.72	2.84	2.95	-0.11
55	20.72	2.76	2.86	-0.11
56	21.72	2.67	2.78	-0.11
57	22.72	2.59	2.70	-0.11
58	23.72	2.51	2.62	-0.10
59	24.72	2.44	2.54	-0.10
60	25.72	2.36	2.47	-0.10
61	26.72	2.30	2.39	-0.10
62	27.72	2.23	2.32	-0.09
63	28.72	2.17	2.26	-0.09
64	29.72	2.11	2.19	-0.08
65	30.72	2.04	2.12	-0.08
66	31.72	1.98	2.06	-0.08
67	32.72	1.93	2.00	-0.07
68	33.72	1.87	1.94	-0.07
69	34.72	1.82	1.89	-0.06
70	35.72	1.77	1.83	-0.06
71	36.72	1.72	1.78	-0.06
72	37.72	1.67	1.72	-0.05
73	38.72	1.63	1.67	-0.05
74	39.72	1.58	1.62	-0.05
75	40.72	1.54	1.58	-0.04
76	41.72	1.50	1.53	-0.03
77	42.72	1.46	1.49	-0.03
78	43.72	1.42	1.44	-0.02
79	44.72	1.39	1.40	-0.01
80	45.72	1.35	1.36	0.00
81	46.72	1.32	1.32	0.00
82	47.72	1.29	1.28	0.01
83	48.72	1.26	1.24	0.02
84	49.72	1.23	1.21	0.02
85	50.72	1.20	1.17	0.03
86	51.72	1.17	1.14	0.03
87	52.72	1.14	1.10	0.04
88	53.72	1.11	1.07	0.04
89	54.72	1.09	1.04	0.05
90	55.72	1.06	1.01	0.05
91	56.72	1.04	0.98	0.06

Index	Time	Obs. Displacement	Calc. Displacement	Residual
92	57.72	1.01	0.95	0.06
93	58.72	0.99	0.92	0.07
94	59.72	0.97	0.89	0.07

PT-MW-4 Falling Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-4 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 93                    Optimized Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 14.8 ft
```

```
     Initial Displacement
          Fixed Value                  = 5.222 ft

     Hydraulic Conductivity
          Calculated Value             = 4.53862e-005 cm/sec

     Time to 37% Displacement
          Calculated Value             = 32.7628 min

     Linear Regression Slope
          Fixed Value                  = -0.0309347 /min

     Linear Regression Intercept
          Fixed Value                  = 1.01944

     Calculation Type
          Selected Value               = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                 Slope:       -0.030935 /min
                 Intercept:    1.019440 dimensionless

     Residual Mean            =  0.006608
     Residual Standard Dev.   =  0.055125
     Residual Sum of Squares  =  0.286669
     Absolute Residual Mean   =  0.048407
     Minimum Residual         = -0.083662
     Maximum Residual         =  0.088878
```

DATA DETAIL

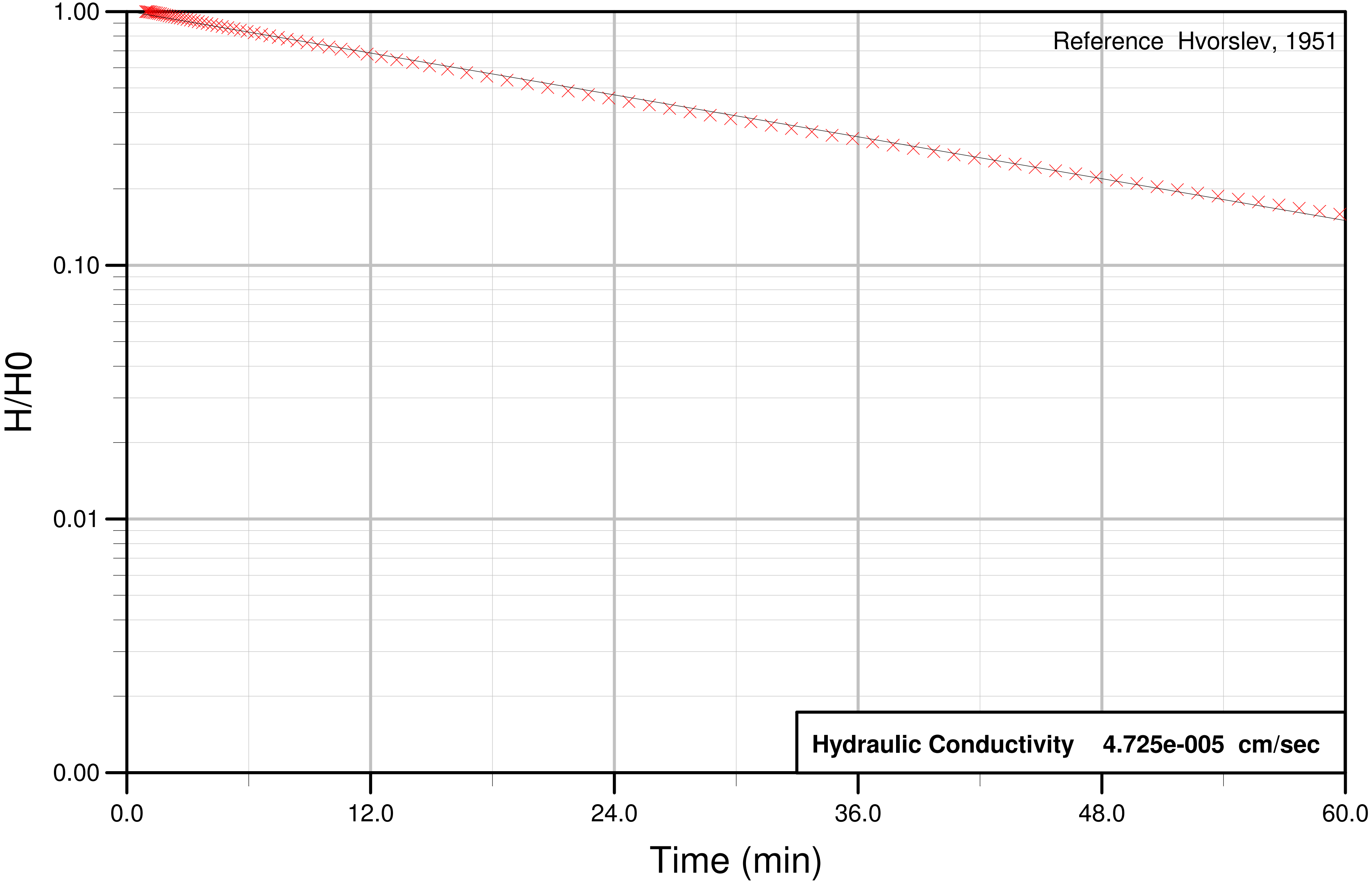
Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.98	5.22	5.16	0.06
1	1.04	5.22	5.15	0.07
2	1.10	5.22	5.14	0.07
3	1.17	5.21	5.13	0.07
4	1.24	5.20	5.12	0.08
5	1.31	5.19	5.11	0.08
6	1.39	5.19	5.10	0.09
7	1.47	5.17	5.09	0.09
8	1.56	5.16	5.07	0.09
9	1.65	5.15	5.06	0.09

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	1.75	5.13	5.04	0.09
11	1.86	5.12	5.03	0.09
12	1.97	5.10	5.01	0.09
13	2.08	5.08	4.99	0.09
14	2.21	5.06	4.97	0.09
15	2.34	5.04	4.95	0.08
16	2.48	5.01	4.93	0.08
17	2.63	4.99	4.91	0.08
18	2.79	4.96	4.88	0.08
19	2.95	4.93	4.86	0.07
20	3.13	4.90	4.83	0.07
21	3.32	4.87	4.80	0.07
22	3.51	4.84	4.78	0.06
23	3.72	4.80	4.74	0.06
24	3.95	4.77	4.71	0.06
25	4.18	4.73	4.68	0.05
26	4.43	4.69	4.64	0.05
27	4.69	4.65	4.60	0.04
28	4.97	4.60	4.56	0.03
29	5.27	4.55	4.52	0.03
30	5.58	4.51	4.48	0.03
31	5.91	4.45	4.43	0.02
32	6.27	4.40	4.39	0.01
33	6.64	4.35	4.34	0.01
34	7.03	4.29	4.28	0.00
35	7.45	4.23	4.23	0.00
36	7.90	4.16	4.17	-0.01
37	8.37	4.10	4.11	-0.01
38	8.86	4.03	4.05	-0.01
39	9.39	3.96	3.98	-0.02
40	9.95	3.89	3.91	-0.02
41	10.54	3.82	3.84	-0.03
42	11.17	3.74	3.77	-0.03
43	11.83	3.66	3.69	-0.03
44	12.53	3.57	3.61	-0.04
45	13.28	3.49	3.53	-0.05
46	14.07	3.39	3.44	-0.05
47	14.91	3.30	3.36	-0.06
48	15.79	3.20	3.27	-0.06
49	16.73	3.11	3.17	-0.07
50	17.72	3.01	3.08	-0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	18.72	2.90	2.98	-0.08
52	19.72	2.81	2.89	-0.08
53	20.72	2.72	2.80	-0.08
54	21.72	2.64	2.72	-0.08
55	22.72	2.55	2.64	-0.08
56	23.72	2.48	2.56	-0.08
57	24.72	2.40	2.48	-0.08
58	25.72	2.33	2.40	-0.08
59	26.72	2.26	2.33	-0.07
60	27.72	2.19	2.26	-0.07
61	28.72	2.13	2.19	-0.06
62	29.72	2.06	2.12	-0.06
63	30.72	2.00	2.06	-0.06
64	31.72	1.95	2.00	-0.05
65	32.72	1.89	1.93	-0.05
66	33.72	1.83	1.88	-0.05
67	34.72	1.78	1.82	-0.04
68	35.72	1.73	1.76	-0.04
69	36.72	1.67	1.71	-0.04
70	37.72	1.63	1.66	-0.03
71	38.72	1.58	1.61	-0.03
72	39.72	1.53	1.56	-0.03
73	40.72	1.49	1.51	-0.02
74	41.72	1.44	1.46	-0.02
75	42.72	1.40	1.42	-0.02
76	43.72	1.37	1.38	-0.01
77	44.72	1.33	1.33	-0.01
78	45.72	1.29	1.29	0.00
79	46.72	1.25	1.25	0.00
80	47.72	1.22	1.22	0.01
81	48.72	1.19	1.18	0.01
82	49.72	1.16	1.14	0.01
83	50.72	1.12	1.11	0.01
84	51.72	1.09	1.07	0.02
85	52.72	1.07	1.04	0.02
86	53.72	1.04	1.01	0.03
87	54.72	1.01	0.98	0.03
88	55.72	0.98	0.95	0.03
89	56.72	0.96	0.92	0.04
90	57.72	0.93	0.89	0.04
91	58.72	0.91	0.87	0.05

Index	Time	Obs. Displacement	Calc. Displacement	Residual
92	59.72	0.89	0.84	0.05

PT-MW-4 Falling Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addedum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-4 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 94                    Optimized Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 14.8 ft
```

```
Initial Displacement
     Fixed Value                  = 5.09 ft

Hydraulic Conductivity
     Calculated Value             = 4.72523e-005 cm/sec

Time to 37% Displacement
     Calculated Value             = 31.4689 min

Linear Regression Slope
     Fixed Value                  = -0.0318165 /min

Linear Regression Intercept
     Fixed Value                  = 1.007

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -0.031816 /min
             Intercept:    1.007002 dimensionless

Residual Mean           =  0.007963
Residual Standard Dev.  =  0.069374
Residual Sum of Squares =  0.458363
Absolute Residual Mean  =  0.058401
Minimum Residual        = -0.096134
Maximum Residual        =  0.132308
```

DATA DETAIL

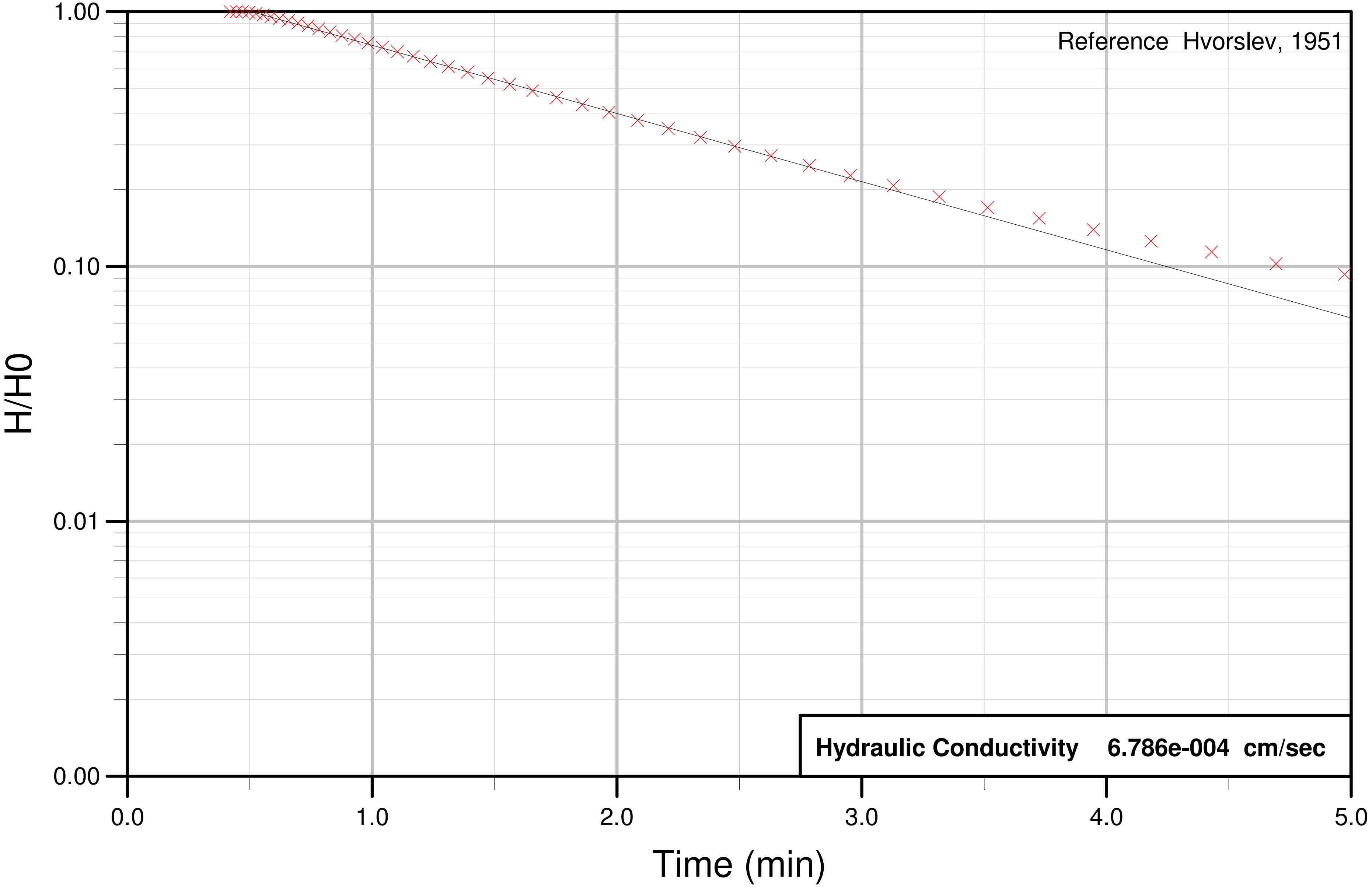
Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.93	5.09	4.98	0.11
1	0.98	5.09	4.97	0.12
2	1.04	5.09	4.96	0.13
3	1.10	5.08	4.95	0.13
4	1.17	5.07	4.94	0.13
5	1.24	5.06	4.93	0.13
6	1.31	5.05	4.92	0.13
7	1.39	5.03	4.90	0.13
8	1.47	5.02	4.89	0.13
9	1.56	5.00	4.88	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	1.65	4.99	4.86	0.12
11	1.75	4.96	4.85	0.11
12	1.86	4.94	4.83	0.11
13	1.97	4.92	4.81	0.11
14	2.08	4.90	4.80	0.10
15	2.21	4.88	4.78	0.10
16	2.34	4.85	4.76	0.09
17	2.48	4.82	4.74	0.09
18	2.63	4.80	4.71	0.08
19	2.79	4.77	4.69	0.08
20	2.95	4.74	4.67	0.07
21	3.13	4.71	4.64	0.07
22	3.32	4.68	4.61	0.06
23	3.51	4.64	4.58	0.06
24	3.72	4.60	4.55	0.05
25	3.95	4.57	4.52	0.05
26	4.18	4.53	4.49	0.04
27	4.43	4.48	4.45	0.03
28	4.69	4.44	4.41	0.03
29	4.97	4.40	4.38	0.02
30	5.27	4.35	4.33	0.02
31	5.58	4.30	4.29	0.01
32	5.91	4.25	4.25	0.00
33	6.27	4.20	4.20	0.00
34	6.64	4.14	4.15	-0.01
35	7.03	4.08	4.10	-0.02
36	7.45	4.02	4.04	-0.02
37	7.90	3.96	3.99	-0.03
38	8.37	3.90	3.93	-0.03
39	8.86	3.83	3.87	-0.03
40	9.39	3.76	3.80	-0.04
41	9.95	3.69	3.73	-0.04
42	10.54	3.62	3.67	-0.05
43	11.17	3.54	3.59	-0.05
44	11.83	3.46	3.52	-0.06
45	12.53	3.38	3.44	-0.06
46	13.28	3.29	3.36	-0.07
47	14.07	3.20	3.28	-0.07
48	14.91	3.11	3.19	-0.08
49	15.79	3.02	3.10	-0.08
50	16.73	2.92	3.01	-0.09

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	17.72	2.83	2.92	-0.09
52	18.72	2.73	2.83	-0.10
53	19.72	2.64	2.74	-0.10
54	20.72	2.56	2.65	-0.09
55	21.72	2.47	2.57	-0.09
56	22.72	2.40	2.49	-0.09
57	23.72	2.32	2.41	-0.09
58	24.72	2.25	2.33	-0.09
59	25.72	2.18	2.26	-0.08
60	26.72	2.12	2.19	-0.08
61	27.72	2.05	2.12	-0.07
62	28.72	1.99	2.06	-0.07
63	29.72	1.93	1.99	-0.06
64	30.72	1.87	1.93	-0.06
65	31.72	1.82	1.87	-0.05
66	32.72	1.76	1.81	-0.05
67	33.72	1.71	1.75	-0.04
68	34.72	1.66	1.70	-0.04
69	35.72	1.61	1.64	-0.04
70	36.72	1.56	1.59	-0.03
71	37.72	1.51	1.54	-0.03
72	38.72	1.47	1.50	-0.03
73	39.72	1.43	1.45	-0.02
74	40.72	1.39	1.40	-0.02
75	41.72	1.35	1.36	-0.01
76	42.72	1.31	1.32	-0.01
77	43.72	1.27	1.28	0.00
78	44.72	1.24	1.24	0.00
79	45.72	1.20	1.20	0.00
80	46.72	1.17	1.16	0.01
81	47.72	1.13	1.12	0.01
82	48.72	1.10	1.09	0.01
83	49.72	1.07	1.05	0.02
84	50.72	1.04	1.02	0.02
85	51.72	1.01	0.99	0.02
86	52.72	0.98	0.96	0.02
87	53.72	0.95	0.93	0.03
88	54.72	0.93	0.90	0.03
89	55.72	0.90	0.87	0.03
90	56.72	0.88	0.84	0.04
91	57.72	0.85	0.82	0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
92	58.72	0.83	0.79	0.04
93	59.72	0.81	0.77	0.04

PT-MW-5 Falling Head Test 2



Hydraulic Conductivity 6.786e-004 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-5 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 44                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 15.4 ft
```

```
     Initial Displacement
          Fixed Value                    = 4.544 ft

     Hydraulic Conductivity
          Calculated Value               = 0.000678631 cm/sec

     Time to 37% Displacement
          Calculated Value               = 2.12444 min

     Linear Regression Slope
          Fixed Value                    = -0.616806 /min

     Linear Regression Intercept
          Fixed Value                    = 1.37179

     Calculation Type
          Selected Value                 = Default
```

ANALYSIS STATISTICS

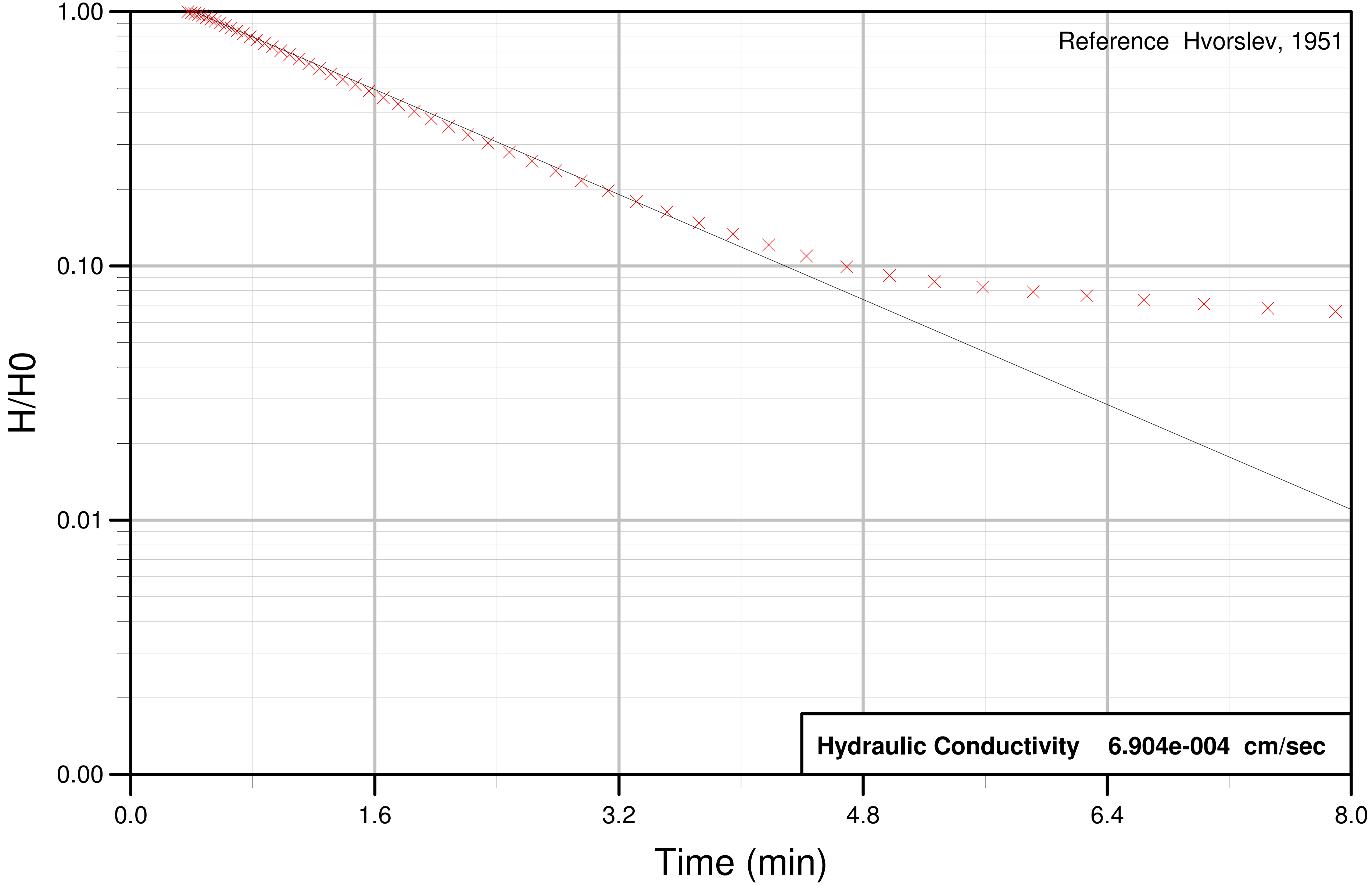
```
     Regression Line
                  Slope:        -0.616806 /min
                  Intercept:     1.371785 dimensionless

     Residual Mean           =  0.003369
     Residual Standard Dev.  =  0.071678
     Residual Sum of Squares =  0.226562
     Absolute Residual Mean  =  0.047611
     Minimum Residual        = -0.267388
     Maximum Residual        =  0.132842
```

DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.42	4.54	4.81	-0.27
1	0.44	4.54	4.74	-0.20
2	0.47	4.54	4.67	-0.13
3	0.50	4.51	4.59	-0.08
4	0.52	4.46	4.51	-0.05
5	0.55	4.41	4.43	-0.02
6	0.59	4.34	4.34	0.00
7	0.62	4.27	4.25	0.02
8	0.66	4.19	4.15	0.03
9	0.70	4.10	4.06	0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.74	3.99	3.95	0.04
11	0.78	3.89	3.85	0.04
12	0.83	3.78	3.74	0.04
13	0.88	3.66	3.63	0.03
14	0.93	3.54	3.52	0.03
15	0.98	3.42	3.40	0.02
16	1.04	3.29	3.28	0.01
17	1.10	3.16	3.16	0.01
18	1.17	3.03	3.03	0.00
19	1.24	2.90	2.90	-0.01
20	1.31	2.77	2.78	-0.01
21	1.39	2.63	2.65	-0.02
22	1.47	2.49	2.51	-0.02
23	1.56	2.36	2.38	-0.02
24	1.65	2.22	2.25	-0.03
25	1.75	2.09	2.11	-0.03
26	1.86	1.96	1.98	-0.03
27	1.97	1.83	1.85	-0.02
28	2.08	1.70	1.72	-0.02
29	2.21	1.58	1.60	-0.02
30	2.34	1.46	1.47	-0.01
31	2.48	1.35	1.35	0.00
32	2.63	1.24	1.23	0.00
33	2.79	1.13	1.12	0.01
34	2.95	1.03	1.01	0.02
35	3.13	0.94	0.90	0.04
36	3.32	0.85	0.81	0.05
37	3.51	0.77	0.71	0.06
38	3.72	0.70	0.63	0.08
39	3.95	0.63	0.55	0.09
40	4.18	0.57	0.47	0.10
41	4.43	0.52	0.41	0.11
42	4.69	0.47	0.34	0.12
43	4.97	0.42	0.29	0.13

PT-MW-5 Falling Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-5 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 54                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.278 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 15.4 ft
```

```
Initial Displacement
     Fixed Value                  = 4.874 ft

Hydraulic Conductivity
     Calculated Value             = 0.000690398 cm/sec

Time to 37% Displacement
     Calculated Value             = 2.08823 min

Linear Regression Slope
     Fixed Value                  = -0.593664 /min

Linear Regression Intercept
     Fixed Value                  = 1.2782

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -0.593664 /min
             Intercept:    1.278202 dimensionless

Residual Mean           =  0.000427
Residual Standard Dev.  =  0.105220
Residual Sum of Squares =  0.597853
Absolute Residual Mean  =  0.082438
Minimum Residual        = -0.115517
Maximum Residual        =  0.264635
```

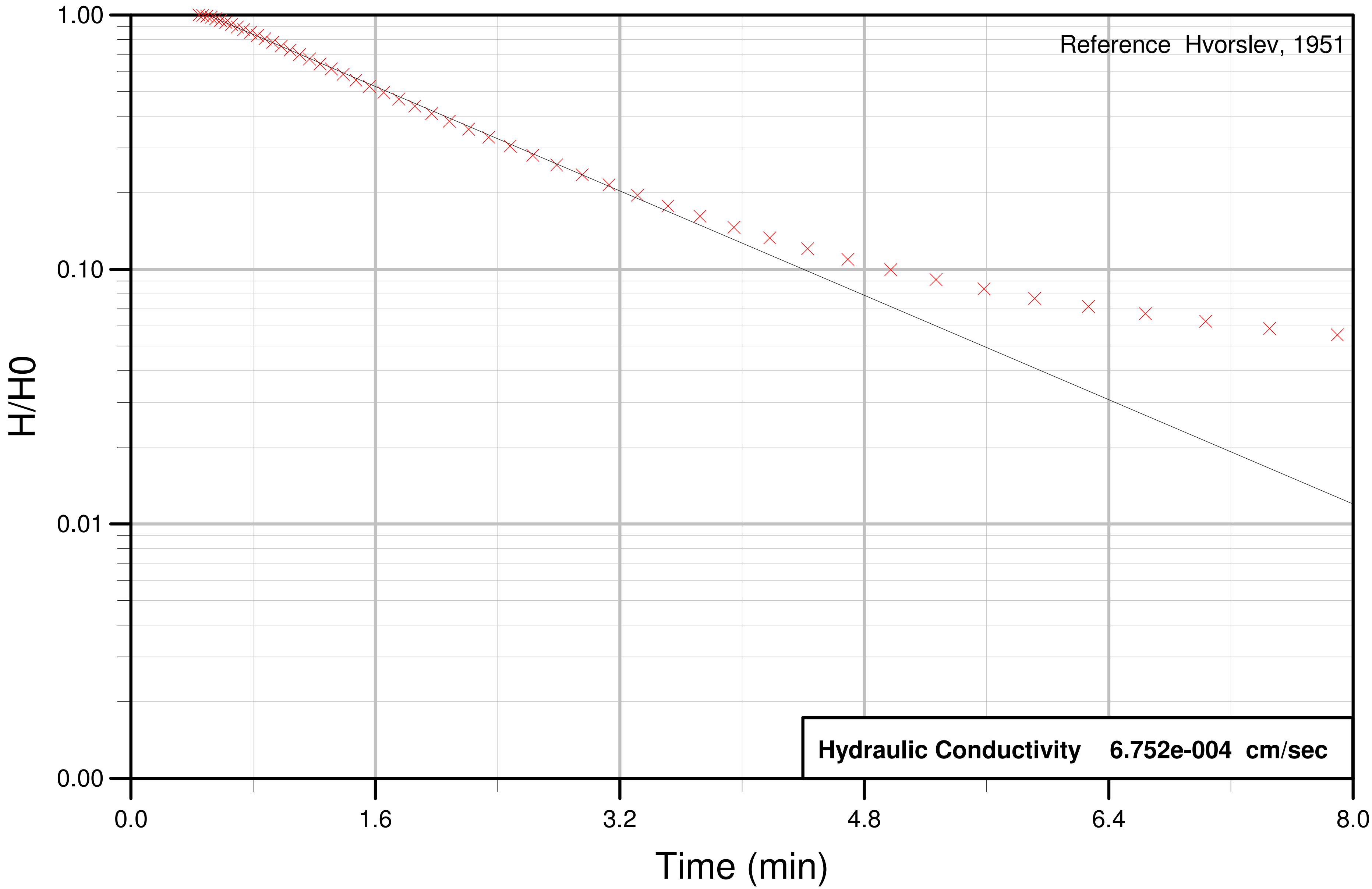
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.37	4.87	4.99	-0.12
1	0.40	4.82	4.92	-0.10
2	0.42	4.79	4.86	-0.07
3	0.44	4.74	4.78	-0.04
4	0.47	4.69	4.71	-0.03
5	0.50	4.62	4.64	-0.02
6	0.52	4.55	4.56	-0.02
7	0.55	4.47	4.48	-0.01
8	0.59	4.39	4.40	-0.01
9	0.62	4.29	4.31	-0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.66	4.19	4.22	-0.02
11	0.70	4.09	4.12	-0.03
12	0.74	3.98	4.02	-0.04
13	0.78	3.88	3.92	-0.04
14	0.83	3.76	3.81	-0.05
15	0.88	3.65	3.70	-0.05
16	0.93	3.54	3.59	-0.05
17	0.98	3.42	3.48	-0.06
18	1.04	3.30	3.36	-0.06
19	1.10	3.17	3.24	-0.07
20	1.17	3.04	3.11	-0.07
21	1.24	2.91	2.99	-0.08
22	1.31	2.78	2.86	-0.08
23	1.39	2.64	2.73	-0.09
24	1.47	2.51	2.60	-0.09
25	1.56	2.37	2.47	-0.09
26	1.65	2.24	2.33	-0.10
27	1.75	2.11	2.20	-0.09
28	1.86	1.98	2.07	-0.09
29	1.97	1.85	1.94	-0.09
30	2.08	1.72	1.81	-0.09
31	2.21	1.60	1.68	-0.08
32	2.34	1.48	1.55	-0.07
33	2.48	1.37	1.43	-0.06
34	2.63	1.26	1.31	-0.05
35	2.79	1.15	1.19	-0.04
36	2.95	1.05	1.08	-0.03
37	3.13	0.96	0.97	-0.01
38	3.32	0.87	0.87	0.00
39	3.51	0.80	0.77	0.02
40	3.72	0.72	0.68	0.04
41	3.95	0.65	0.60	0.05
42	4.18	0.59	0.52	0.07
43	4.43	0.53	0.45	0.08
44	4.69	0.48	0.38	0.10
45	4.97	0.45	0.33	0.12
46	5.27	0.42	0.27	0.15
47	5.58	0.40	0.23	0.18
48	5.91	0.39	0.19	0.20
49	6.27	0.37	0.15	0.22
50	6.64	0.36	0.12	0.24

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	7.03	0.35	0.10	0.25
52	7.45	0.33	0.07	0.26
53	7.90	0.32	0.06	0.26

PT-MW-5 Falling Head Test 4



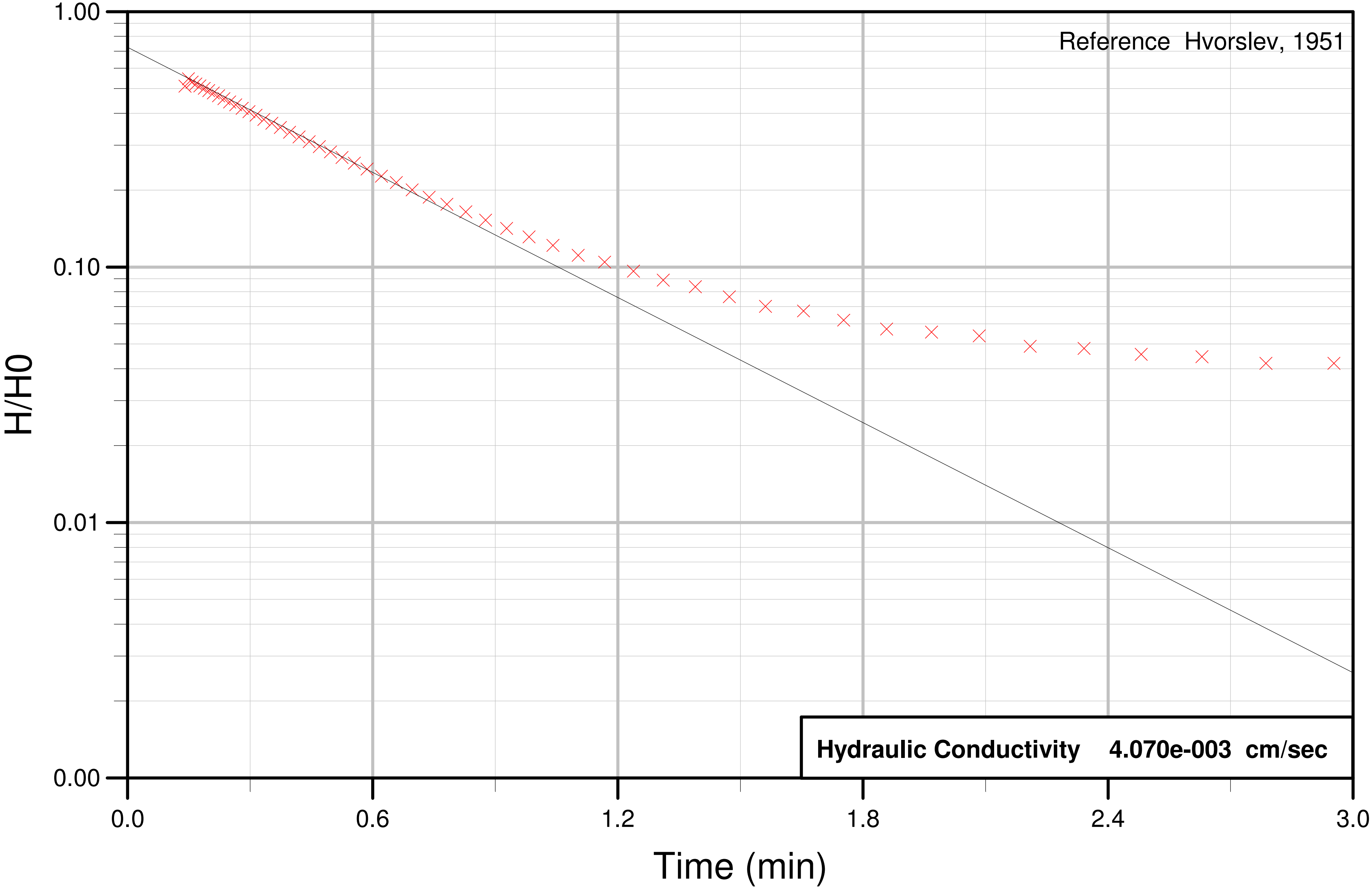
```
                         AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-5 Falling Test 4
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 51                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Length
            Fixed Value                  = 15.4 ft
```

```
     Initial Displacement
          Fixed Value                    = 4.288 ft

     Hydraulic Conductivity
          Calculated Value               = 0.000675164 cm/sec

     Time to 37% Displacement
          Calculated Value               = 2.19076 min

     Linear Regression Slope
          Fixed Value                    = -0.591548 /min

     Linear Regression Intercept
          Fixed Value                    = 1.35214

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:        -0.591548 /min
                  Intercept:     1.352141 dimensionless

     Residual Mean           =  0.014743
     Residual Standard Dev.  =  0.082148
     Residual Sum of Squares =  0.355248
     Absolute Residual Mean  =  0.061512
     Minimum Residual        = -0.169405
     Maximum Residual        =  0.182713


DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.44	4.29	4.46	-0.17
1	0.47	4.27	4.39	-0.12
2	0.50	4.24	4.32	-0.09
3	0.52	4.19	4.25	-0.06
4	0.55	4.14	4.18	-0.03
5	0.59	4.08	4.10	-0.02
6	0.62	4.01	4.01	0.00
7	0.66	3.93	3.93	0.00
8	0.70	3.85	3.84	0.01
9	0.74	3.76	3.75	0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.78	3.66	3.65	0.01
11	0.83	3.56	3.55	0.01
12	0.88	3.46	3.45	0.00
13	0.93	3.34	3.35	-0.01
14	0.98	3.23	3.24	-0.01
15	1.04	3.12	3.13	-0.02
16	1.10	3.00	3.02	-0.02
17	1.17	2.88	2.91	-0.03
18	1.24	2.75	2.79	-0.03
19	1.31	2.63	2.67	-0.04
20	1.39	2.50	2.55	-0.04
21	1.47	2.38	2.43	-0.05
22	1.56	2.25	2.30	-0.05
23	1.65	2.13	2.18	-0.05
24	1.75	2.00	2.06	-0.05
25	1.86	1.88	1.93	-0.05
26	1.97	1.76	1.81	-0.05
27	2.08	1.64	1.69	-0.05
28	2.21	1.53	1.57	-0.04
29	2.34	1.42	1.45	-0.03
30	2.48	1.31	1.34	-0.03
31	2.63	1.20	1.22	-0.02
32	2.79	1.10	1.12	-0.01
33	2.95	1.01	1.01	0.00
34	3.13	0.92	0.91	0.01
35	3.32	0.84	0.82	0.02
36	3.51	0.76	0.73	0.04
37	3.72	0.69	0.64	0.05
38	3.95	0.63	0.56	0.07
39	4.18	0.57	0.49	0.08
40	4.43	0.52	0.42	0.10
41	4.69	0.47	0.36	0.11
42	4.97	0.43	0.31	0.12
43	5.27	0.39	0.26	0.13
44	5.58	0.36	0.21	0.15
45	5.91	0.33	0.18	0.15
46	6.27	0.31	0.14	0.16
47	6.64	0.29	0.11	0.17
48	7.03	0.27	0.09	0.18
49	7.45	0.25	0.07	0.18
50	7.90	0.24	0.05	0.18

PT-MW-6 Falling Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-6 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 60                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 15.1 ft
```

```
     Initial Displacement
          Fixed Value                  = 3.164 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00406978 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.359715 min

     Linear Regression Slope
          Fixed Value                  = -1.88065 /min

     Linear Regression Intercept
          Fixed Value                  = 0.72778

     Calculation Type
          Selected Value               = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                   Slope:       -1.880645 /min
                   Intercept:    0.727780 dimensionless

     Residual Mean           = -0.161814
     Residual Standard Dev.  =  0.567160
     Residual Sum of Squares =  20.871247
     Absolute Residual Mean  =  0.235556
     Minimum Residual        = -1.907924
     Maximum Residual        =  0.124616
```

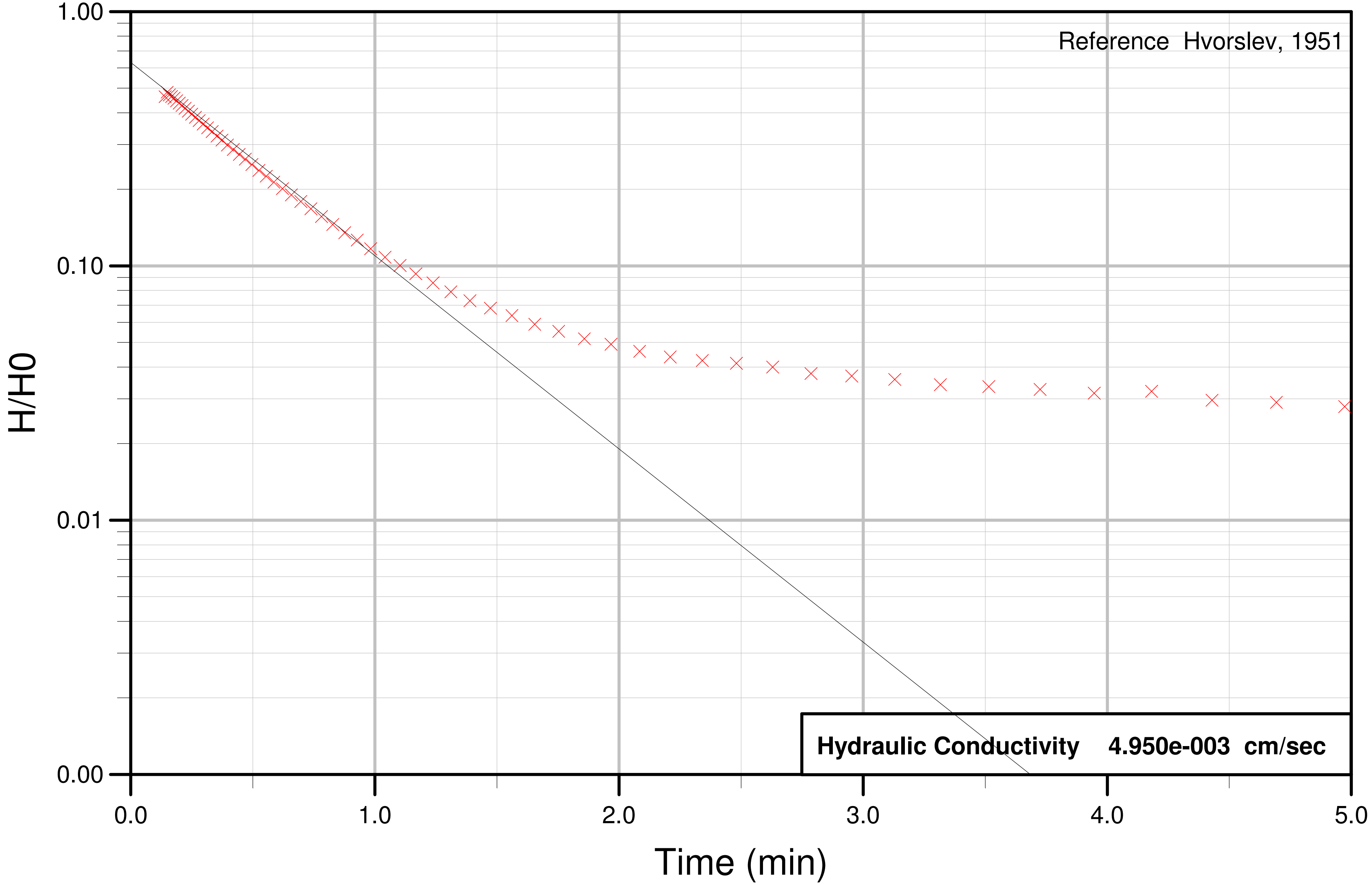
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.10	0.00	1.91	-1.91
1	0.11	0.00	1.89	-1.89
2	0.11	0.00	1.87	-1.87
3	0.12	0.00	1.84	-1.84
4	0.13	0.00	1.82	-1.82
5	0.13	0.00	1.79	-1.79
6	0.14	1.62	1.77	-0.15
7	0.15	1.73	1.74	-0.01
8	0.16	1.68	1.71	-0.04
9	0.17	1.65	1.68	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.18	1.62	1.65	-0.03
11	0.19	1.58	1.62	-0.03
12	0.20	1.55	1.59	-0.03
13	0.21	1.52	1.55	-0.03
14	0.22	1.48	1.52	-0.03
15	0.24	1.44	1.48	-0.03
16	0.25	1.40	1.44	-0.04
17	0.26	1.37	1.40	-0.03
18	0.28	1.32	1.36	-0.04
19	0.30	1.28	1.32	-0.03
20	0.31	1.24	1.27	-0.03
21	0.33	1.20	1.23	-0.03
22	0.35	1.16	1.19	-0.03
23	0.37	1.11	1.14	-0.03
24	0.40	1.07	1.09	-0.03
25	0.42	1.02	1.05	-0.02
26	0.44	0.98	1.00	-0.02
27	0.47	0.94	0.95	-0.02
28	0.50	0.89	0.91	-0.01
29	0.52	0.85	0.86	-0.01
30	0.55	0.81	0.81	0.00
31	0.59	0.77	0.76	0.00
32	0.62	0.72	0.72	0.00
33	0.66	0.68	0.67	0.01
34	0.70	0.64	0.62	0.01
35	0.74	0.59	0.57	0.02
36	0.78	0.56	0.53	0.03
37	0.83	0.52	0.49	0.03
38	0.88	0.48	0.44	0.04
39	0.93	0.45	0.40	0.05
40	0.98	0.42	0.36	0.05
41	1.04	0.39	0.32	0.06
42	1.10	0.35	0.29	0.06
43	1.17	0.33	0.26	0.07
44	1.24	0.31	0.22	0.08
45	1.31	0.28	0.20	0.09
46	1.39	0.27	0.17	0.10
47	1.47	0.24	0.14	0.10
48	1.56	0.22	0.12	0.10
49	1.65	0.21	0.10	0.11
50	1.75	0.20	0.09	0.11

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.86	0.18	0.07	0.11
52	1.97	0.18	0.06	0.12
53	2.08	0.17	0.05	0.12
54	2.21	0.16	0.04	0.12
55	2.34	0.15	0.03	0.12
56	2.48	0.14	0.02	0.12
57	2.63	0.14	0.02	0.12
58	2.79	0.13	0.01	0.12
59	2.95	0.13	0.01	0.12

PT-MW-6 Falling Head Test 2



```
                    AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-6 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 63                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Length
            Fixed Value                  = 15.1 ft
```

```
     Initial Displacement
          Fixed Value                 = 3.579 ft

     Hydraulic Conductivity
          Calculated Value            = 0.0049495 cm/sec

     Time to 37% Displacement
          Calculated Value            = 0.303489 min

     Linear Regression Slope
          Fixed Value                 = -1.74876 /min

     Linear Regression Intercept
          Fixed Value                 = 0.629064

     Calculation Type
          Selected Value              = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                 Slope:       -1.748762 /min
                 Intercept:    0.629064 dimensionless

     Residual Mean           =  0.021180
     Residual Standard Dev.  =  0.068773
     Residual Sum of Squares =  0.326236
     Absolute Residual Mean  =  0.061999
     Minimum Residual        = -0.104960
     Maximum Residual        =  0.120340
```

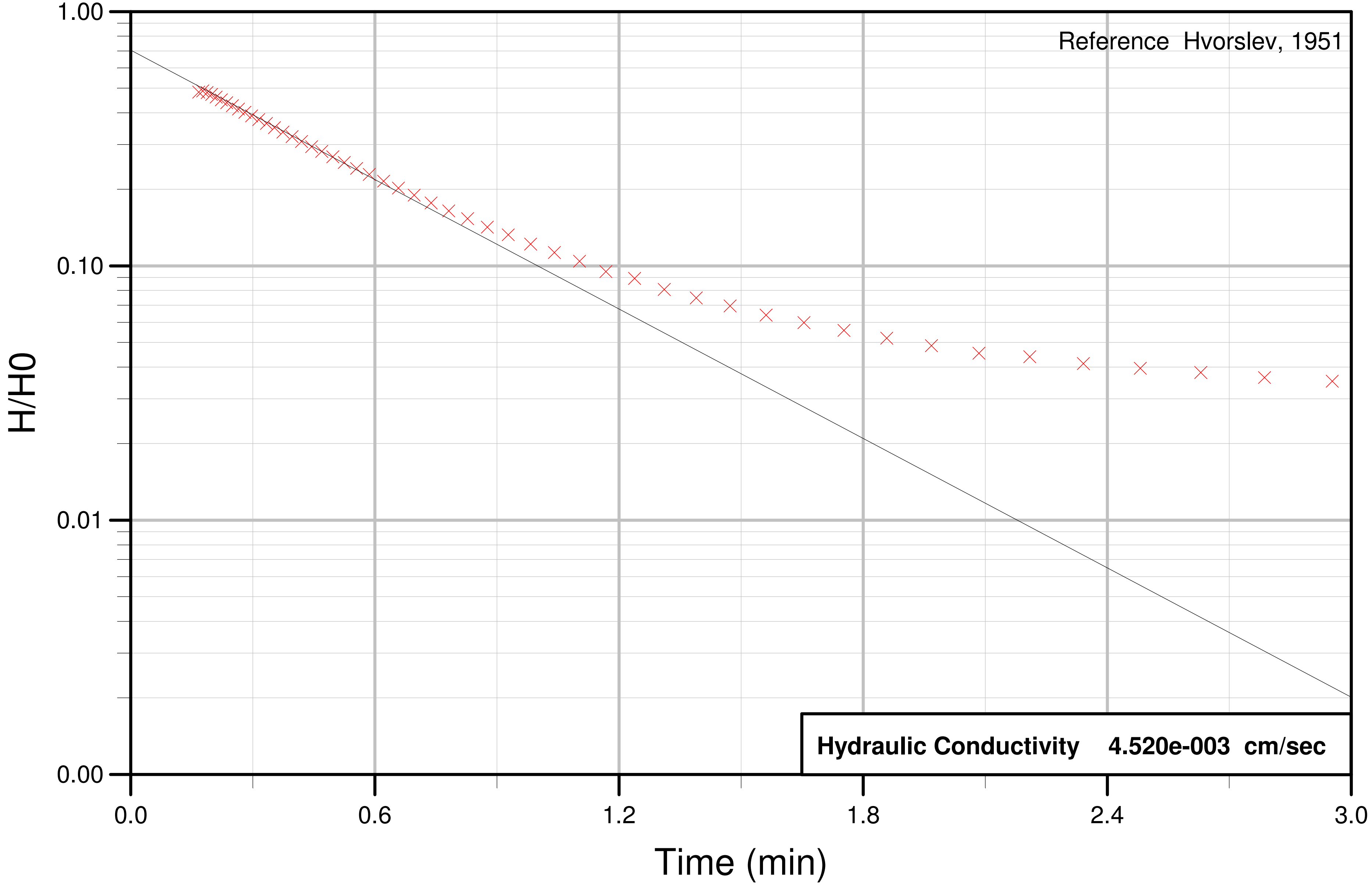
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.14	1.66	1.76	-0.10
1	0.15	1.72	1.74	-0.01
2	0.16	1.68	1.71	-0.02
3	0.17	1.66	1.68	-0.02
4	0.18	1.63	1.65	-0.02
5	0.19	1.60	1.62	-0.03
6	0.20	1.56	1.59	-0.03
7	0.21	1.53	1.56	-0.03
8	0.22	1.49	1.53	-0.03
9	0.24	1.45	1.49	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.25	1.41	1.45	-0.04
11	0.26	1.37	1.42	-0.04
12	0.28	1.33	1.38	-0.05
13	0.30	1.29	1.34	-0.05
14	0.31	1.25	1.30	-0.05
15	0.33	1.21	1.26	-0.05
16	0.35	1.16	1.21	-0.05
17	0.37	1.12	1.17	-0.05
18	0.40	1.07	1.13	-0.06
19	0.42	1.03	1.08	-0.05
20	0.44	0.98	1.03	-0.05
21	0.47	0.94	0.99	-0.05
22	0.50	0.90	0.95	-0.05
23	0.52	0.85	0.90	-0.05
24	0.55	0.81	0.85	-0.05
25	0.59	0.76	0.81	-0.04
26	0.62	0.72	0.76	-0.04
27	0.66	0.68	0.71	-0.03
28	0.70	0.64	0.67	-0.03
29	0.74	0.60	0.62	-0.02
30	0.78	0.56	0.57	-0.02
31	0.83	0.52	0.53	-0.01
32	0.88	0.48	0.49	0.00
33	0.93	0.45	0.44	0.01
34	0.98	0.42	0.40	0.01
35	1.04	0.39	0.36	0.02
36	1.10	0.36	0.33	0.03
37	1.17	0.33	0.29	0.04
38	1.24	0.31	0.26	0.05
39	1.31	0.28	0.23	0.06
40	1.39	0.26	0.20	0.06
41	1.47	0.24	0.17	0.07
42	1.56	0.23	0.15	0.08
43	1.65	0.21	0.12	0.09
44	1.75	0.20	0.10	0.09
45	1.86	0.19	0.09	0.10
46	1.97	0.18	0.07	0.10
47	2.08	0.17	0.06	0.11
48	2.21	0.16	0.05	0.11
49	2.34	0.15	0.04	0.11
50	2.48	0.15	0.03	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	2.63	0.14	0.02	0.12
52	2.79	0.14	0.02	0.12
53	2.95	0.13	0.01	0.12
54	3.13	0.13	0.01	0.12
55	3.32	0.12	0.01	0.12
56	3.51	0.12	0.00	0.12
57	3.72	0.12	0.00	0.11
58	3.95	0.11	0.00	0.11
59	4.18	0.12	0.00	0.11
60	4.43	0.11	0.00	0.11
61	4.69	0.10	0.00	0.10
62	4.97	0.10	0.00	0.10

PT-MW-6 Falling Head Test 3



Hydraulic Conductivity 4.520e-003 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-6 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 51                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Length
            Fixed Value                  = 15.1 ft
```

```
Initial Displacement
     Fixed Value                  = 3.464 ft

Hydraulic Conductivity
     Calculated Value             = 0.00451969 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.332349 min

Linear Regression Slope
     Fixed Value                  = -1.95236 /min

Linear Regression Intercept
     Fixed Value                  = 0.707946

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

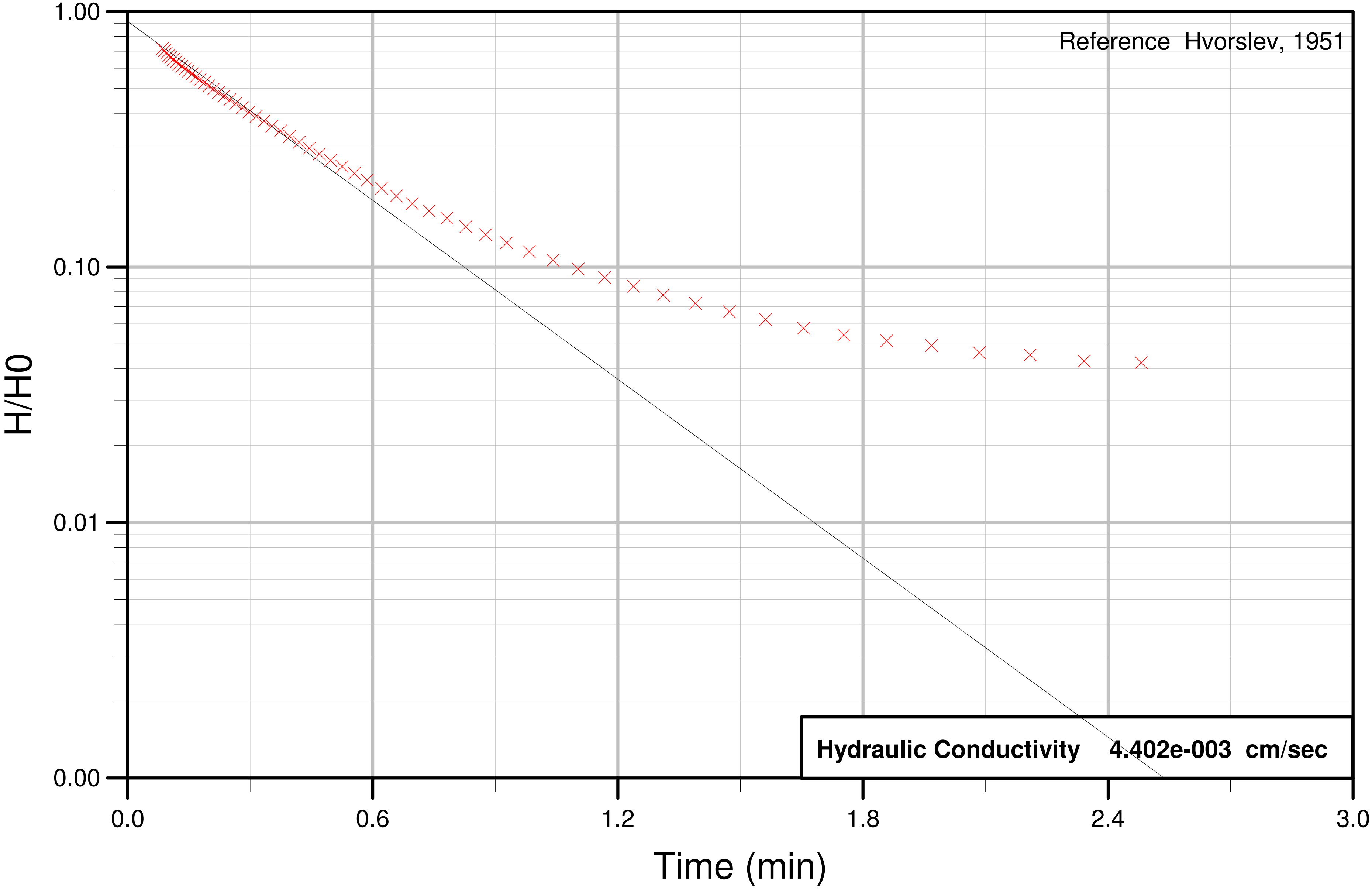
```
Regression Line
             Slope:       -1.952358 /min
             Intercept:    0.707946 dimensionless

Residual Mean           =  0.035465
Residual Standard Dev.  =  0.060168
Residual Sum of Squares =  0.248777
Absolute Residual Mean  =  0.056622
Minimum Residual        = -0.099023
Maximum Residual        =  0.119192
```

DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.17	1.67	1.77	-0.10
1	0.18	1.69	1.74	-0.05
2	0.19	1.67	1.70	-0.04
3	0.20	1.64	1.66	-0.03
4	0.21	1.60	1.63	-0.03
5	0.22	1.56	1.59	-0.03
6	0.24	1.52	1.55	-0.03
7	0.25	1.48	1.51	-0.03
8	0.26	1.43	1.46	-0.03
9	0.28	1.39	1.42	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.30	1.35	1.37	-0.03
11	0.31	1.30	1.33	-0.03
12	0.33	1.26	1.28	-0.02
13	0.35	1.21	1.23	-0.02
14	0.37	1.16	1.18	-0.02
15	0.40	1.12	1.13	-0.01
16	0.42	1.07	1.08	-0.01
17	0.44	1.02	1.03	-0.01
18	0.47	0.98	0.98	0.00
19	0.50	0.93	0.93	0.00
20	0.52	0.88	0.88	0.00
21	0.55	0.84	0.83	0.01
22	0.59	0.79	0.78	0.01
23	0.62	0.75	0.73	0.02
24	0.66	0.70	0.68	0.02
25	0.70	0.66	0.63	0.03
26	0.74	0.61	0.58	0.03
27	0.78	0.57	0.53	0.04
28	0.83	0.53	0.49	0.04
29	0.88	0.49	0.44	0.05
30	0.93	0.46	0.40	0.06
31	0.98	0.42	0.36	0.06
32	1.04	0.39	0.32	0.07
33	1.10	0.36	0.28	0.08
34	1.17	0.33	0.25	0.08
35	1.24	0.31	0.22	0.09
36	1.31	0.28	0.19	0.09
37	1.39	0.26	0.16	0.10
38	1.47	0.24	0.14	0.10
39	1.56	0.22	0.12	0.11
40	1.65	0.21	0.10	0.11
41	1.75	0.19	0.08	0.11
42	1.86	0.18	0.07	0.11
43	1.97	0.17	0.05	0.12
44	2.08	0.16	0.04	0.12
45	2.21	0.15	0.03	0.12
46	2.34	0.14	0.03	0.12
47	2.48	0.14	0.02	0.12
48	2.63	0.13	0.01	0.12
49	2.79	0.13	0.01	0.12
50	2.95	0.12	0.01	0.11

PT-MW-6 Rising Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-6 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 60                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 15.1 ft
```

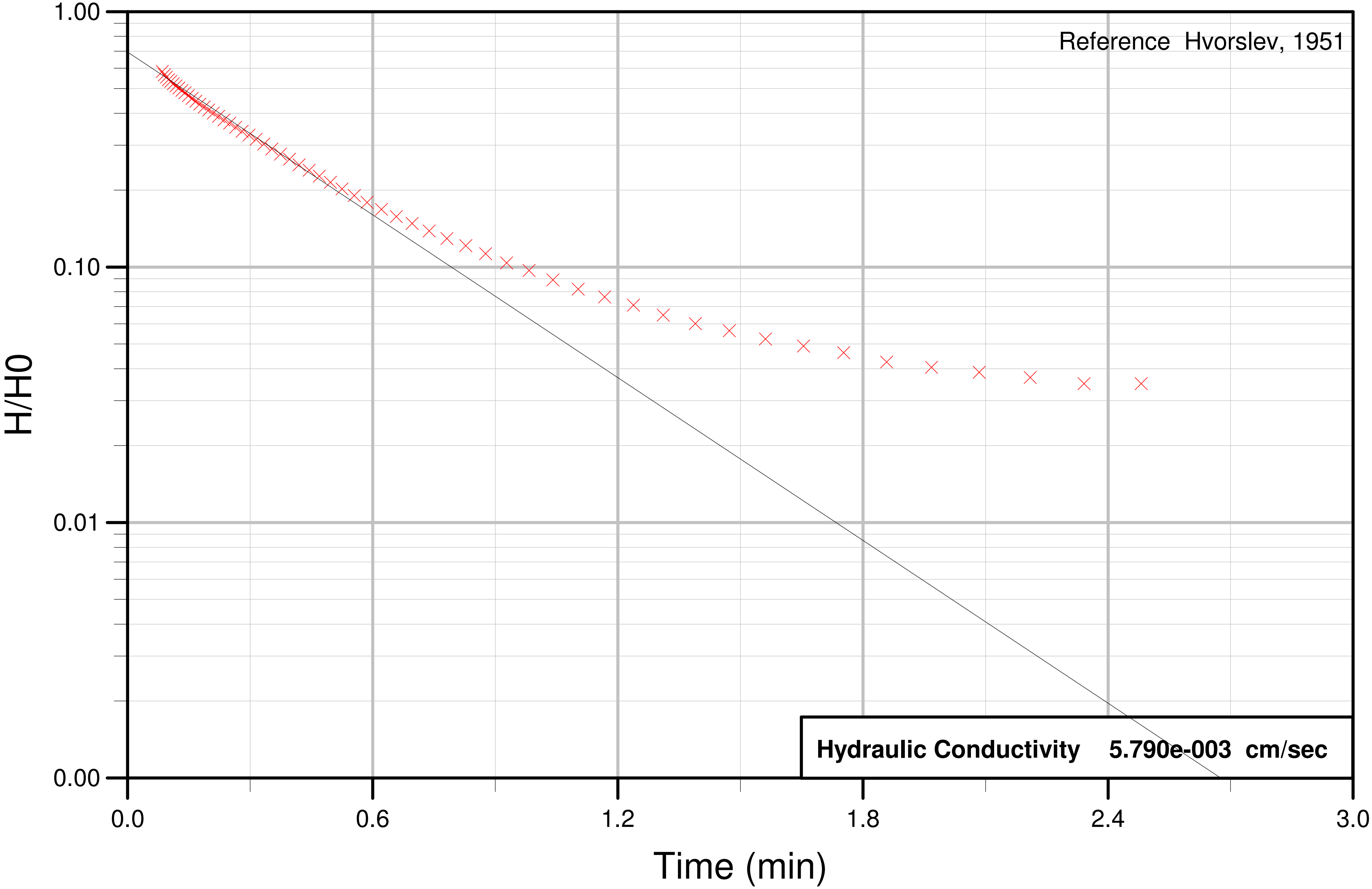
```
     Initial Displacement
          Fixed Value                    = 3.245 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00440229 cm/sec

     Time to 37% Displacement
          Calculated Value               = 0.336868 min

     Linear Regression Slope
          Fixed Value                    = -2.68659 /min

     Linear Regression Intercept
          Fixed Value                    = 0.914638

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:        -2.686585 /min
                  Intercept:     0.914638 dimensionless

     Residual Mean           =  0.041780
     Residual Standard Dev.  =  0.100676
     Residual Sum of Squares =  0.712873
     Absolute Residual Mean  =  0.097921
     Minimum Residual        = -0.097852
     Maximum Residual        =  0.166339


DATA DETAIL
```

Index	**Time** (min)	**Obs. Displacement** (ft)	**Calc. Displacement** (ft)	**Residual**
0	0.08	2.32	2.36	-0.04
1	0.09	2.28	2.33	-0.05
2	0.10	2.23	2.30	-0.07
3	0.10	2.18	2.27	-0.09
4	0.11	2.15	2.23	-0.09
5	0.11	2.11	2.20	-0.09
6	0.12	2.07	2.16	-0.09
7	0.13	2.02	2.12	-0.09
8	0.13	1.98	2.08	-0.09
9	0.14	1.94	2.03	-0.10

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.15	1.90	1.99	-0.09
11	0.16	1.85	1.94	-0.09
12	0.17	1.81	1.90	-0.09
13	0.18	1.76	1.85	-0.09
14	0.19	1.71	1.79	-0.08
15	0.20	1.66	1.74	-0.08
16	0.21	1.61	1.69	-0.07
17	0.22	1.57	1.63	-0.07
18	0.24	1.52	1.58	-0.06
19	0.25	1.47	1.52	-0.05
20	0.26	1.42	1.46	-0.04
21	0.28	1.37	1.40	-0.03
22	0.30	1.31	1.34	-0.02
23	0.31	1.26	1.28	-0.01
24	0.33	1.21	1.21	0.00
25	0.35	1.16	1.15	0.01
26	0.37	1.11	1.09	0.02
27	0.40	1.06	1.02	0.03
28	0.42	1.00	0.96	0.04
29	0.44	0.95	0.90	0.05
30	0.47	0.90	0.84	0.06
31	0.50	0.85	0.78	0.07
32	0.52	0.80	0.72	0.08
33	0.55	0.76	0.67	0.09
34	0.59	0.71	0.61	0.10
35	0.62	0.66	0.56	0.10
36	0.66	0.62	0.51	0.11
37	0.70	0.58	0.46	0.12
38	0.74	0.54	0.41	0.13
39	0.78	0.50	0.36	0.14
40	0.83	0.47	0.32	0.15
41	0.88	0.43	0.28	0.15
42	0.93	0.40	0.25	0.16
43	0.98	0.37	0.21	0.16
44	1.04	0.35	0.18	0.16
45	1.10	0.32	0.15	0.17
46	1.17	0.30	0.13	0.17
47	1.24	0.27	0.11	0.17
48	1.31	0.25	0.09	0.16
49	1.39	0.23	0.07	0.16
50	1.47	0.22	0.06	0.16

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.56	0.20	0.04	0.16
52	1.65	0.19	0.03	0.15
53	1.75	0.18	0.03	0.15
54	1.86	0.17	0.02	0.15
55	1.97	0.16	0.02	0.14
56	2.08	0.15	0.01	0.14
57	2.21	0.15	0.01	0.14
58	2.34	0.14	0.01	0.13
59	2.48	0.14	0.00	0.13

PT-MW-6 Rising Head Test 2



```
                         AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-6 Rising Test 2
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 60                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.278 ft

       Screen Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Length
            Fixed Value                 = 15.1 ft
```

```
Initial Displacement
     Fixed Value                  = 3.977 ft

Hydraulic Conductivity
     Calculated Value             = 0.00578954 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.25615 min

Linear Regression Slope
     Fixed Value                  = -2.44223 /min

Linear Regression Intercept
     Fixed Value                  = 0.691651

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -2.442234 /min
             Intercept:    0.691651 dimensionless

Residual Mean           =  0.046498
Residual Standard Dev.  =  0.076239
Residual Sum of Squares =  0.478472
Absolute Residual Mean  =  0.073535
Minimum Residual        = -0.059159
Maximum Residual        =  0.148609
```

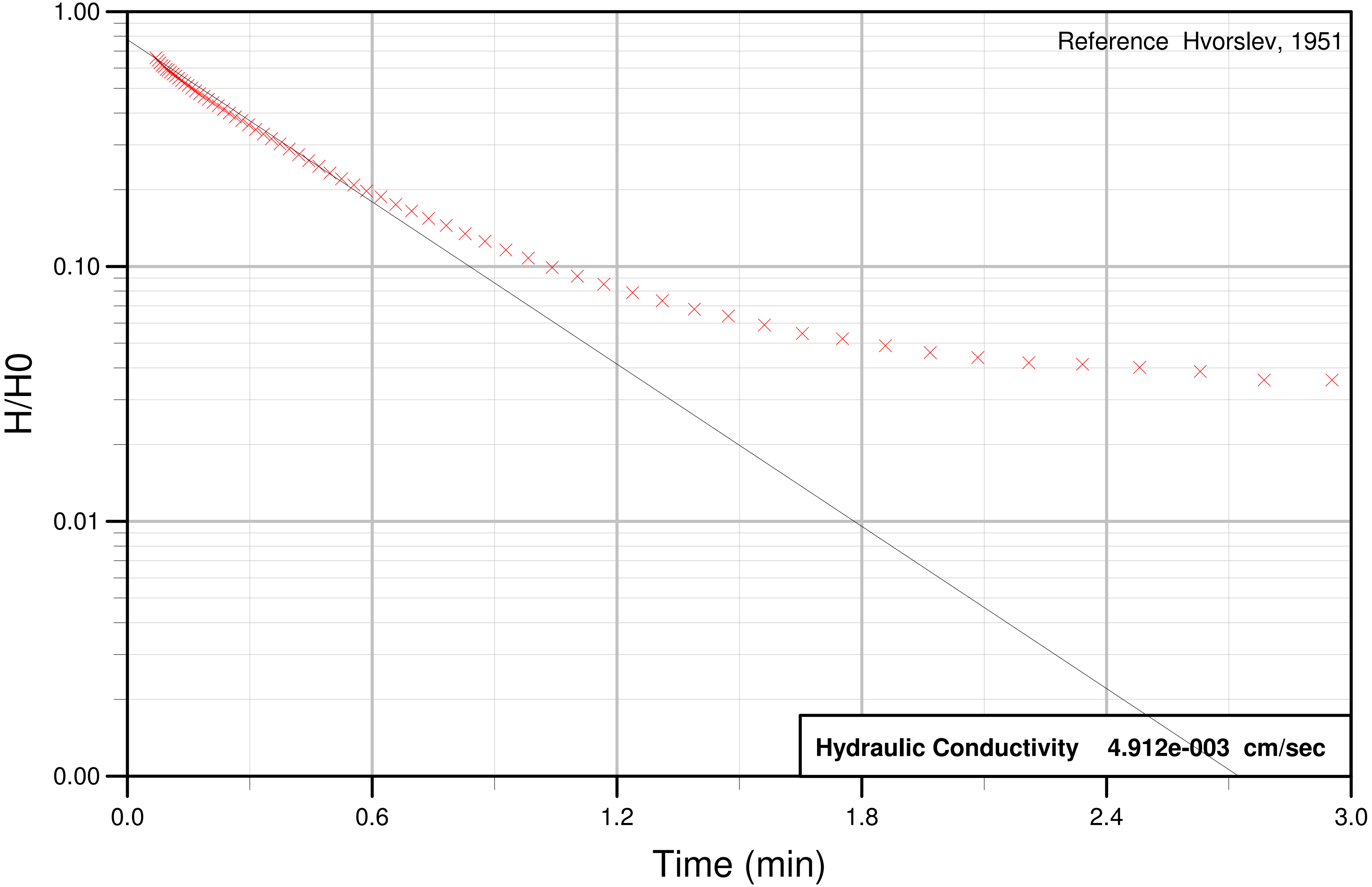
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.08	2.32	2.24	0.08
1	0.09	2.25	2.21	0.04
2	0.10	2.20	2.18	0.02
3	0.10	2.15	2.15	0.00
4	0.11	2.12	2.12	0.00
5	0.11	2.07	2.09	-0.02
6	0.12	2.04	2.06	-0.02
7	0.13	2.00	2.02	-0.03
8	0.13	1.95	1.99	-0.04
9	0.14	1.91	1.95	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.15	1.87	1.91	-0.05
11	0.16	1.82	1.87	-0.05
12	0.17	1.77	1.83	-0.06
13	0.18	1.73	1.79	-0.06
14	0.19	1.68	1.74	-0.06
15	0.20	1.64	1.69	-0.06
16	0.21	1.59	1.65	-0.05
17	0.22	1.55	1.60	-0.05
18	0.24	1.50	1.55	-0.05
19	0.25	1.45	1.49	-0.04
20	0.26	1.40	1.44	-0.04
21	0.28	1.35	1.39	-0.03
22	0.30	1.31	1.33	-0.02
23	0.31	1.26	1.28	-0.02
24	0.33	1.21	1.22	-0.01
25	0.35	1.15	1.16	-0.01
26	0.37	1.10	1.10	0.00
27	0.40	1.05	1.04	0.01
28	0.42	1.00	0.99	0.01
29	0.44	0.95	0.93	0.02
30	0.47	0.90	0.87	0.03
31	0.50	0.85	0.82	0.04
32	0.52	0.81	0.76	0.04
33	0.55	0.76	0.71	0.05
34	0.59	0.71	0.66	0.05
35	0.62	0.67	0.60	0.07
36	0.66	0.63	0.55	0.08
37	0.70	0.59	0.50	0.09
38	0.74	0.55	0.45	0.10
39	0.78	0.51	0.41	0.11
40	0.83	0.48	0.36	0.12
41	0.88	0.45	0.32	0.13
42	0.93	0.41	0.29	0.13
43	0.98	0.39	0.25	0.14
44	1.04	0.35	0.22	0.14
45	1.10	0.33	0.19	0.14
46	1.17	0.30	0.16	0.15
47	1.24	0.28	0.13	0.15
48	1.31	0.26	0.11	0.15
49	1.39	0.24	0.09	0.15
50	1.47	0.22	0.08	0.15

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.56	0.21	0.06	0.15
52	1.65	0.20	0.05	0.15
53	1.75	0.18	0.04	0.15
54	1.86	0.17	0.03	0.14
55	1.97	0.16	0.02	0.14
56	2.08	0.15	0.02	0.14
57	2.21	0.15	0.01	0.13
58	2.34	0.14	0.01	0.13
59	2.48	0.14	0.01	0.13

PT-MW-6 Rising Head Test 3



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                           AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-6 Rising Test 3
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 66                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.278 ft

       Screen Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Length
            Fixed Value                 = 15.1 ft
```

```
Initial Displacement
     Fixed Value                  = 3.46 ft

Hydraulic Conductivity
     Calculated Value             = 0.00491203 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.30191 min

Linear Regression Slope
     Fixed Value                  = -2.43922 /min

Linear Regression Intercept
     Fixed Value                  = 0.772729

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -2.439222 /min
             Intercept:    0.772729 dimensionless

Residual Mean           =  0.027035
Residual Standard Dev.  =  0.089854
Residual Sum of Squares =  0.581107
Absolute Residual Mean  =  0.082843
Minimum Residual        = -0.089073
Maximum Residual        =  0.147395
```

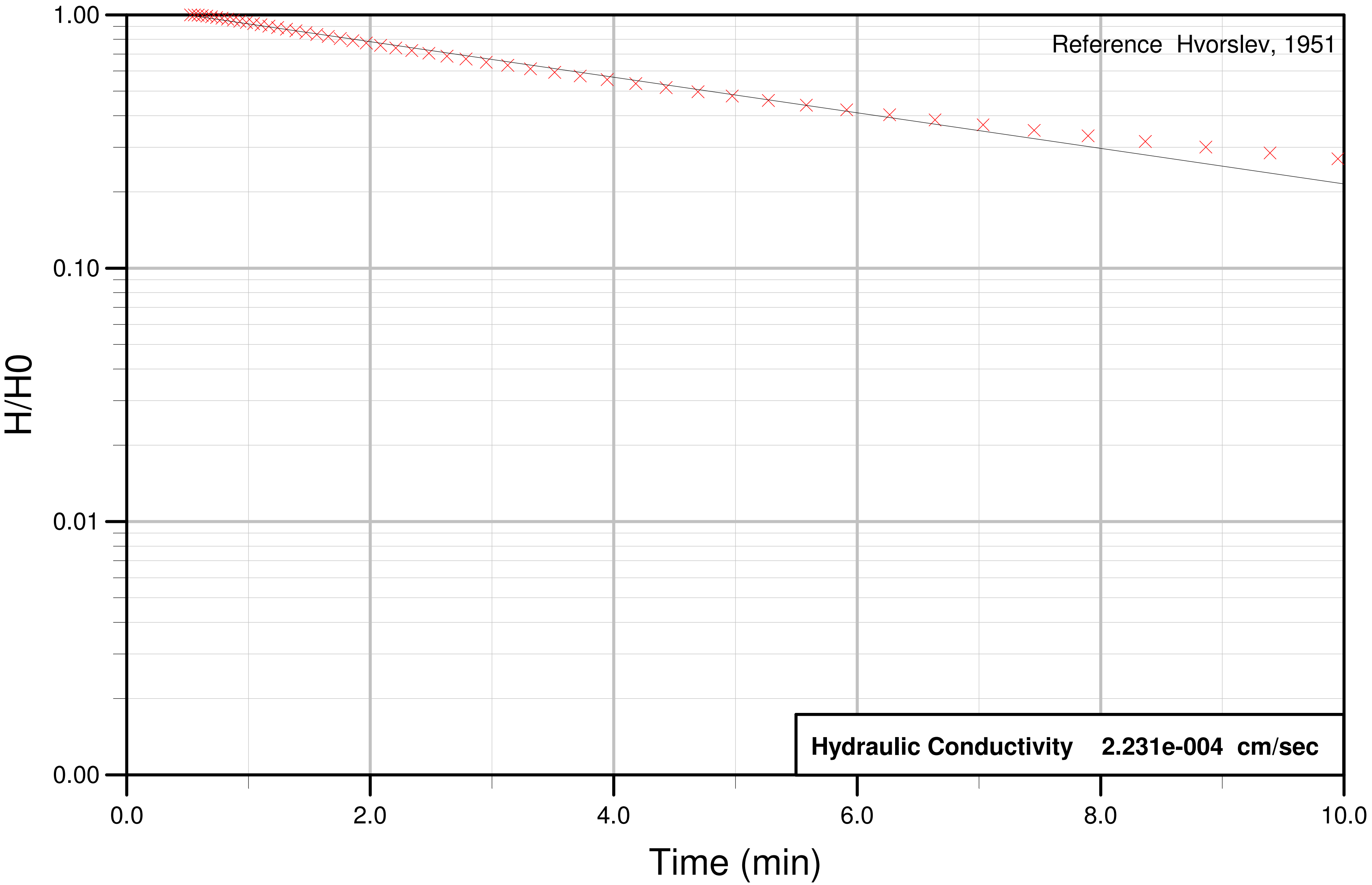
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.07	2.28	2.25	0.03
1	0.08	2.23	2.23	0.00
2	0.08	2.18	2.20	-0.02
3	0.08	2.13	2.17	-0.05
4	0.09	2.11	2.15	-0.04
5	0.10	2.05	2.12	-0.07
6	0.10	2.04	2.09	-0.05
7	0.11	2.01	2.07	-0.06
8	0.11	1.97	2.04	-0.07
9	0.12	1.94	2.00	-0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.13	1.89	1.97	-0.07
11	0.13	1.86	1.93	-0.08
12	0.14	1.81	1.90	-0.08
13	0.15	1.78	1.86	-0.08
14	0.16	1.73	1.82	-0.09
15	0.17	1.69	1.78	-0.09
16	0.18	1.65	1.74	-0.09
17	0.19	1.61	1.69	-0.09
18	0.20	1.56	1.65	-0.08
19	0.21	1.52	1.60	-0.08
20	0.22	1.48	1.55	-0.08
21	0.24	1.43	1.50	-0.07
22	0.25	1.38	1.45	-0.07
23	0.26	1.34	1.40	-0.06
24	0.28	1.29	1.35	-0.06
25	0.30	1.24	1.30	-0.05
26	0.31	1.19	1.24	-0.05
27	0.33	1.15	1.19	-0.04
28	0.35	1.10	1.13	-0.03
29	0.37	1.05	1.07	-0.03
30	0.40	1.00	1.02	-0.02
31	0.42	0.95	0.96	-0.01
32	0.44	0.90	0.90	-0.01
33	0.47	0.86	0.85	0.00
34	0.50	0.81	0.80	0.01
35	0.52	0.76	0.74	0.02
36	0.55	0.72	0.69	0.03
37	0.59	0.68	0.64	0.04
38	0.62	0.65	0.59	0.06
39	0.66	0.61	0.54	0.07
40	0.70	0.57	0.49	0.08
41	0.74	0.53	0.44	0.09
42	0.78	0.50	0.40	0.10
43	0.83	0.47	0.35	0.11
44	0.88	0.43	0.32	0.12
45	0.93	0.40	0.28	0.12
46	0.98	0.37	0.24	0.13
47	1.04	0.34	0.21	0.13
48	1.10	0.32	0.18	0.14
49	1.17	0.30	0.15	0.14
50	1.24	0.27	0.13	0.14

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.31	0.25	0.11	0.14
52	1.39	0.24	0.09	0.14
53	1.47	0.22	0.07	0.15
54	1.56	0.20	0.06	0.14
55	1.65	0.19	0.05	0.14
56	1.75	0.18	0.04	0.14
57	1.86	0.17	0.03	0.14
58	1.97	0.16	0.02	0.14
59	2.08	0.15	0.02	0.14
60	2.21	0.15	0.01	0.13
61	2.34	0.14	0.01	0.13
62	2.48	0.14	0.01	0.13
63	2.63	0.13	0.00	0.13
64	2.79	0.12	0.00	0.12
65	2.95	0.12	0.00	0.12

PT-MW-7 Falling Head Test 1



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                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-7 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 52                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.278 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 15.1 ft
```
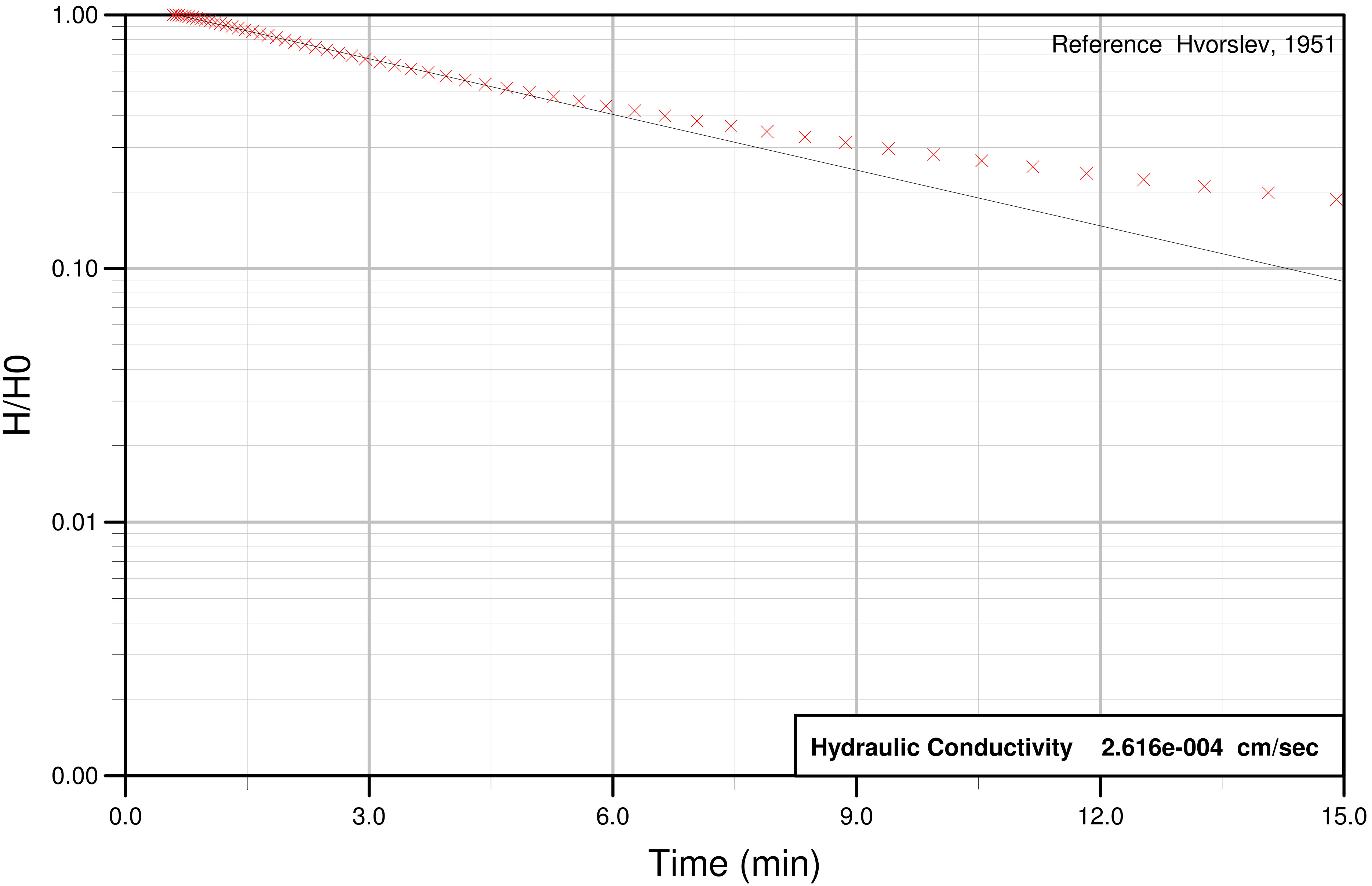

```
     Initial Displacement
          Fixed Value                   = 4.548 ft

     Hydraulic Conductivity
          Calculated Value              = 0.000223141 cm/sec

     Time to 37% Displacement
          Calculated Value              = 6.646 min

     Linear Regression Slope
          Fixed Value                   = -0.162102 /min

     Linear Regression Intercept
          Fixed Value                   = 1.08663

     Calculation Type
          Selected Value                = Default


ANALYSIS STATISTICS

     Regression Line
                   Slope:       -0.162102 /min
                   Intercept:    1.086626 dimensionless

     Residual Mean           =  0.003562
     Residual Standard Dev.  =  0.086376
     Residual Sum of Squares =  0.388619
     Absolute Residual Mean  =  0.069403
     Minimum Residual        = -0.105029
     Maximum Residual        =  0.242988


DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.52	4.55	4.54	0.01
1	0.55	4.54	4.52	0.03
2	0.59	4.54	4.49	0.04
3	0.62	4.52	4.47	0.05
4	0.66	4.50	4.44	0.05
5	0.70	4.47	4.41	0.06
6	0.74	4.44	4.38	0.05
7	0.78	4.41	4.35	0.06
8	0.83	4.38	4.32	0.05
9	0.88	4.34	4.29	0.05

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.93	4.29	4.25	0.04
11	0.98	4.25	4.21	0.03
12	1.04	4.20	4.17	0.03
13	1.10	4.15	4.13	0.02
14	1.17	4.10	4.09	0.01
15	1.24	4.05	4.04	0.00
16	1.31	3.99	4.00	-0.01
17	1.39	3.93	3.95	-0.02
18	1.47	3.87	3.89	-0.03
19	1.56	3.80	3.84	-0.04
20	1.65	3.73	3.78	-0.05
21	1.75	3.66	3.72	-0.06
22	1.86	3.59	3.66	-0.06
23	1.97	3.52	3.59	-0.07
24	2.08	3.45	3.52	-0.08
25	2.21	3.37	3.45	-0.09
26	2.34	3.29	3.38	-0.09
27	2.48	3.21	3.31	-0.10
28	2.63	3.13	3.23	-0.10
29	2.79	3.04	3.15	-0.10
30	2.95	2.96	3.06	-0.11
31	3.13	2.87	2.98	-0.10
32	3.32	2.79	2.89	-0.10
33	3.51	2.70	2.80	-0.10
34	3.72	2.61	2.70	-0.09
35	3.95	2.52	2.61	-0.08
36	4.18	2.44	2.51	-0.07
37	4.43	2.35	2.41	-0.06
38	4.69	2.26	2.31	-0.05
39	4.97	2.17	2.21	-0.03
40	5.27	2.09	2.10	-0.02
41	5.58	2.00	2.00	0.00
42	5.91	1.92	1.89	0.02
43	6.27	1.83	1.79	0.04
44	6.64	1.75	1.68	0.07
45	7.03	1.67	1.58	0.09
46	7.45	1.59	1.48	0.12
47	7.90	1.52	1.37	0.14
48	8.37	1.44	1.27	0.17
49	8.86	1.37	1.17	0.19
50	9.39	1.30	1.08	0.22

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	9.95	1.23	0.99	0.24

PT-MW-7 Falling Head Test 2



Hydraulic Conductivity 2.616e-004 cm/sec

```
                         AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-7 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 57                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Inner Diameter
            Fixed Value                  = 0.297 ft

       Screen Length
            Fixed Value                  = 15.1 ft
```

```
     Initial Displacement
          Fixed Value                  = 4.632 ft

     Hydraulic Conductivity
          Calculated Value             = 0.000261598 cm/sec

     Time to 37% Displacement
          Calculated Value             = 6.55379 min

     Linear Regression Slope
          Fixed Value                  = -0.168588 /min

     Linear Regression Intercept
          Fixed Value                  = 1.11699

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                 Slope:       -0.168588 /min
                 Intercept:    1.116988 dimensionless

     Residual Mean           =  0.090178
     Residual Standard Dev.  =  0.152081
     Residual Sum of Squares =  1.781866
     Absolute Residual Mean  =  0.110169
     Minimum Residual        = -0.055026
     Maximum Residual        =  0.446787
```

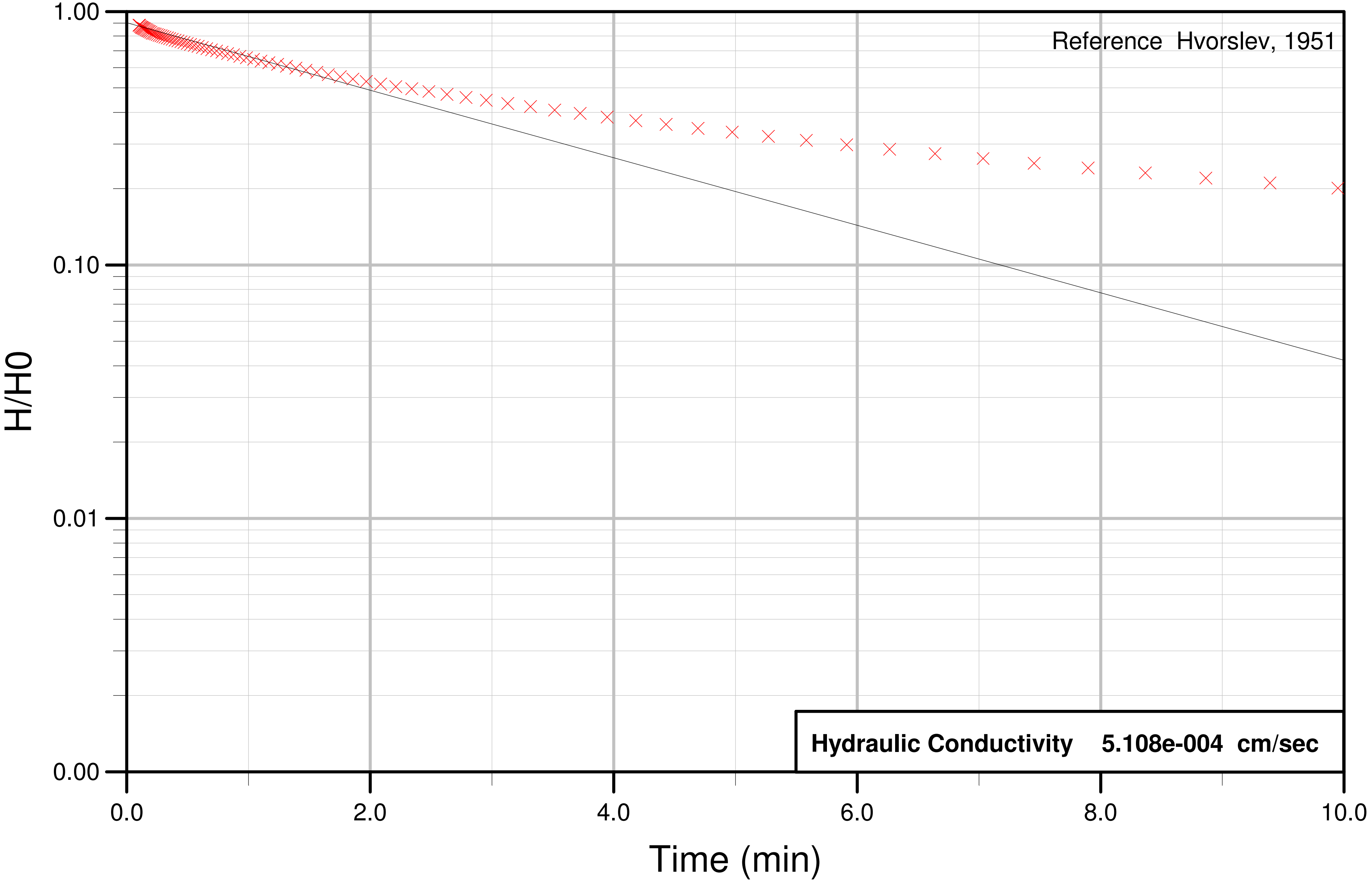
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.59	4.63	4.69	-0.06
1	0.62	4.63	4.66	-0.03
2	0.66	4.61	4.63	-0.02
3	0.70	4.60	4.60	0.00
4	0.74	4.58	4.57	0.01
5	0.78	4.56	4.54	0.02
6	0.83	4.53	4.50	0.03
7	0.88	4.50	4.46	0.03
8	0.93	4.46	4.42	0.03
9	0.98	4.42	4.38	0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	1.04	4.37	4.34	0.03
11	1.10	4.33	4.30	0.03
12	1.17	4.28	4.25	0.03
13	1.24	4.22	4.20	0.02
14	1.31	4.17	4.15	0.02
15	1.39	4.10	4.09	0.01
16	1.47	4.04	4.04	0.00
17	1.56	3.98	3.98	0.00
18	1.65	3.91	3.91	-0.01
19	1.75	3.84	3.85	-0.01
20	1.86	3.76	3.78	-0.02
21	1.97	3.69	3.71	-0.03
22	2.08	3.61	3.64	-0.03
23	2.21	3.53	3.56	-0.04
24	2.34	3.45	3.49	-0.04
25	2.48	3.36	3.41	-0.04
26	2.63	3.28	3.32	-0.04
27	2.79	3.19	3.23	-0.04
28	2.95	3.10	3.14	-0.04
29	3.13	3.02	3.05	-0.04
30	3.32	2.93	2.96	-0.03
31	3.51	2.84	2.86	-0.02
32	3.72	2.74	2.76	-0.02
33	3.95	2.65	2.66	-0.01
34	4.18	2.56	2.56	0.01
35	4.43	2.47	2.45	0.02
36	4.69	2.38	2.35	0.04
37	4.97	2.29	2.24	0.05
38	5.27	2.20	2.13	0.07
39	5.58	2.11	2.02	0.09
40	5.91	2.02	1.91	0.11
41	6.27	1.94	1.80	0.14
42	6.64	1.85	1.69	0.16
43	7.03	1.77	1.58	0.19
44	7.45	1.69	1.47	0.21
45	7.90	1.61	1.37	0.24
46	8.37	1.53	1.26	0.27
47	8.86	1.45	1.16	0.29
48	9.39	1.38	1.06	0.31
49	9.95	1.30	0.97	0.34
50	10.54	1.23	0.88	0.36

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	11.17	1.17	0.79	0.38
52	11.83	1.10	0.70	0.40
53	12.53	1.04	0.63	0.41
54	13.28	0.98	0.55	0.42
55	14.07	0.92	0.48	0.44
56	14.91	0.87	0.42	0.45

PT-MW-7 Rising Head Test 1



Hydraulic Conductivity 5.108e-004 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-MW-7 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 81                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.278 ft

       Screen Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Length
            Fixed Value                 = 15.1 ft
```

```
Initial Displacement
     Fixed Value                  = 2.478 ft

Hydraulic Conductivity
     Calculated Value             = 0.000510798 cm/sec

Time to 37% Displacement
     Calculated Value             = 2.90329 min

Linear Regression Slope
     Fixed Value                  = -0.305705 /min

Linear Regression Intercept
     Fixed Value                  = 0.898793

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -0.305705 /min
             Intercept:    0.898793 dimensionless

Residual Mean           =  0.086963
Residual Standard Dev.  =  0.164803
Residual Sum of Squares =  2.812535
Absolute Residual Mean  =  0.129024
Minimum Residual        = -0.062582
Maximum Residual        =  0.399416
```

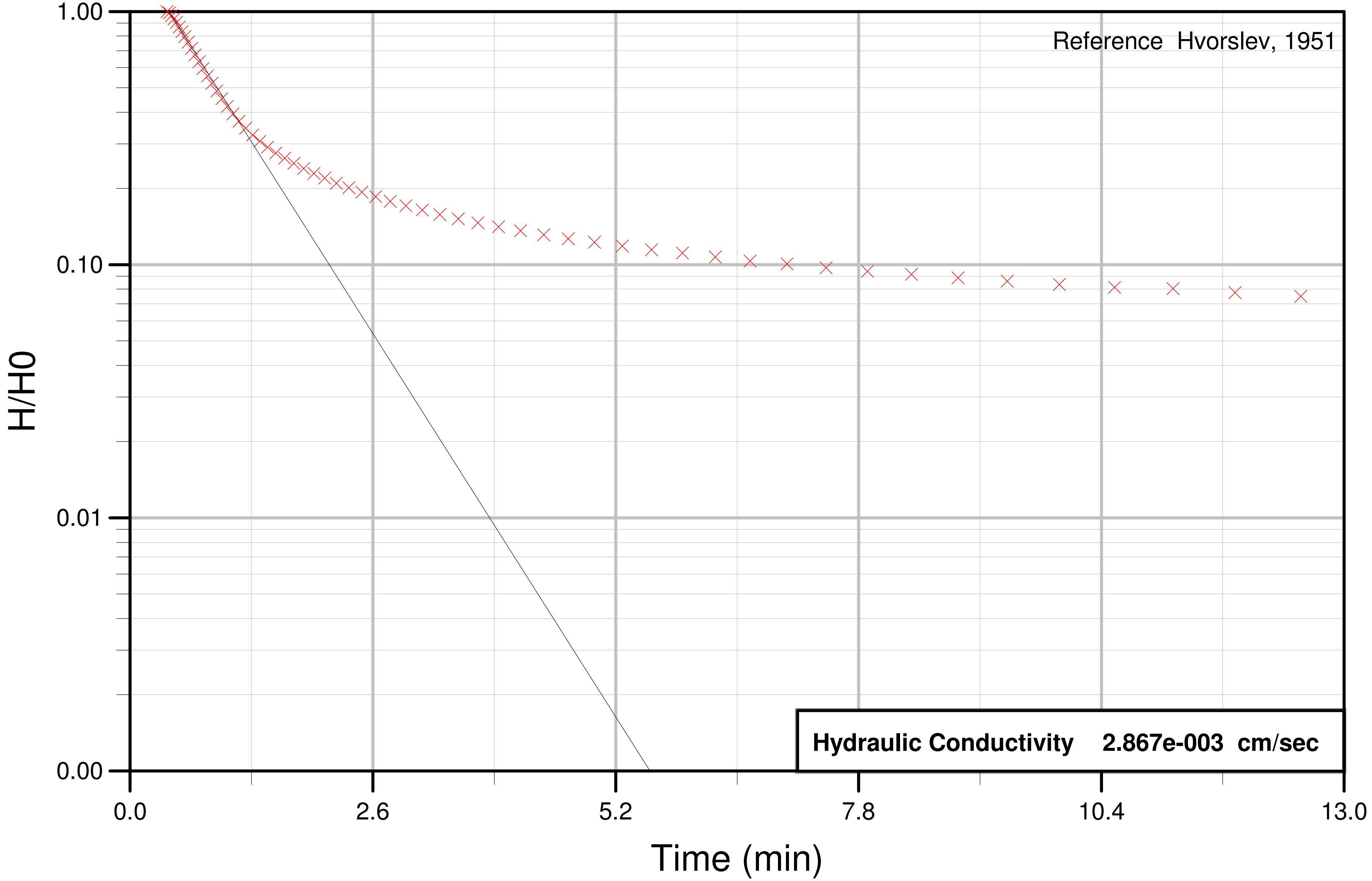
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.10	2.19	2.16	0.03
1	0.11	2.19	2.16	0.03
2	0.11	2.17	2.15	0.01
3	0.12	2.15	2.15	0.01
4	0.13	2.14	2.14	0.00
5	0.13	2.13	2.14	-0.01
6	0.14	2.12	2.13	-0.01
7	0.15	2.11	2.13	-0.02
8	0.16	2.10	2.12	-0.02
9	0.17	2.09	2.12	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.18	2.08	2.11	-0.03
11	0.19	2.06	2.10	-0.04
12	0.20	2.05	2.10	-0.04
13	0.21	2.03	2.09	-0.06
14	0.22	2.03	2.08	-0.05
15	0.24	2.02	2.07	-0.05
16	0.25	2.01	2.06	-0.05
17	0.26	2.00	2.05	-0.06
18	0.28	1.99	2.04	-0.06
19	0.30	1.97	2.03	-0.06
20	0.31	1.96	2.02	-0.06
21	0.33	1.95	2.01	-0.06
22	0.35	1.94	2.00	-0.06
23	0.37	1.92	1.99	-0.06
24	0.40	1.91	1.97	-0.06
25	0.42	1.90	1.96	-0.06
26	0.44	1.88	1.94	-0.06
27	0.47	1.87	1.93	-0.06
28	0.50	1.85	1.91	-0.06
29	0.52	1.84	1.90	-0.06
30	0.55	1.82	1.88	-0.06
31	0.59	1.81	1.86	-0.06
32	0.62	1.79	1.84	-0.05
33	0.66	1.77	1.82	-0.05
34	0.70	1.75	1.80	-0.05
35	0.74	1.73	1.78	-0.04
36	0.78	1.71	1.75	-0.04
37	0.83	1.69	1.73	-0.04
38	0.88	1.67	1.70	-0.03
39	0.93	1.65	1.68	-0.03
40	0.98	1.63	1.65	-0.02
41	1.04	1.61	1.62	-0.02
42	1.10	1.58	1.59	-0.01
43	1.17	1.56	1.56	0.00
44	1.24	1.53	1.53	0.01
45	1.31	1.51	1.49	0.02
46	1.39	1.48	1.46	0.02
47	1.47	1.45	1.42	0.03
48	1.56	1.43	1.38	0.05
49	1.65	1.40	1.34	0.05
50	1.75	1.37	1.30	0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.86	1.34	1.26	0.08
52	1.97	1.31	1.22	0.09
53	2.08	1.28	1.18	0.10
54	2.21	1.25	1.13	0.12
55	2.34	1.23	1.09	0.14
56	2.48	1.20	1.04	0.16
57	2.63	1.17	1.00	0.17
58	2.79	1.14	0.95	0.19
59	2.95	1.11	0.90	0.20
60	3.13	1.08	0.86	0.22
61	3.32	1.05	0.81	0.24
62	3.51	1.01	0.76	0.25
63	3.72	0.98	0.71	0.27
64	3.95	0.95	0.67	0.28
65	4.18	0.92	0.62	0.30
66	4.43	0.89	0.58	0.31
67	4.69	0.86	0.53	0.33
68	4.97	0.83	0.49	0.34
69	5.27	0.80	0.44	0.35
70	5.58	0.77	0.40	0.36
71	5.91	0.74	0.37	0.37
72	6.27	0.71	0.33	0.38
73	6.64	0.68	0.29	0.39
74	7.03	0.65	0.26	0.39
75	7.45	0.62	0.23	0.40
76	7.90	0.60	0.20	0.40
77	8.37	0.57	0.17	0.40
78	8.86	0.55	0.15	0.40
79	9.39	0.52	0.13	0.40
80	9.95	0.50	0.11	0.39

PT-INJ-1 Falling Head Test 1



Reference Hvorslev, 1951

Hydraulic Conductivity 2.867e-003 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-1 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 61                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 15 ft
```

```
     Initial Displacement
          Fixed Value                  = 3.146 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00286673 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.740952 min

     Linear Regression Slope
          Fixed Value                  = -1.34186 /min

     Linear Regression Intercept
          Fixed Value                  = 1.76286

     Aquifer Thickness
          Fixed Value                  = 15 ft

     Calculation Type
          Selected Value               = Full Penetration


ANALYSIS STATISTICS

     Regression Line
                 Slope:       -1.341859 /min
                 Intercept:    1.762856 dimensionless

     Residual Mean           =  0.197552
     Residual Standard Dev.  =  0.188098
     Residual Sum of Squares =  4.538874
     Absolute Residual Mean  =  0.226037
     Minimum Residual        = -0.112570
     Maximum Residual        =  0.433803
```

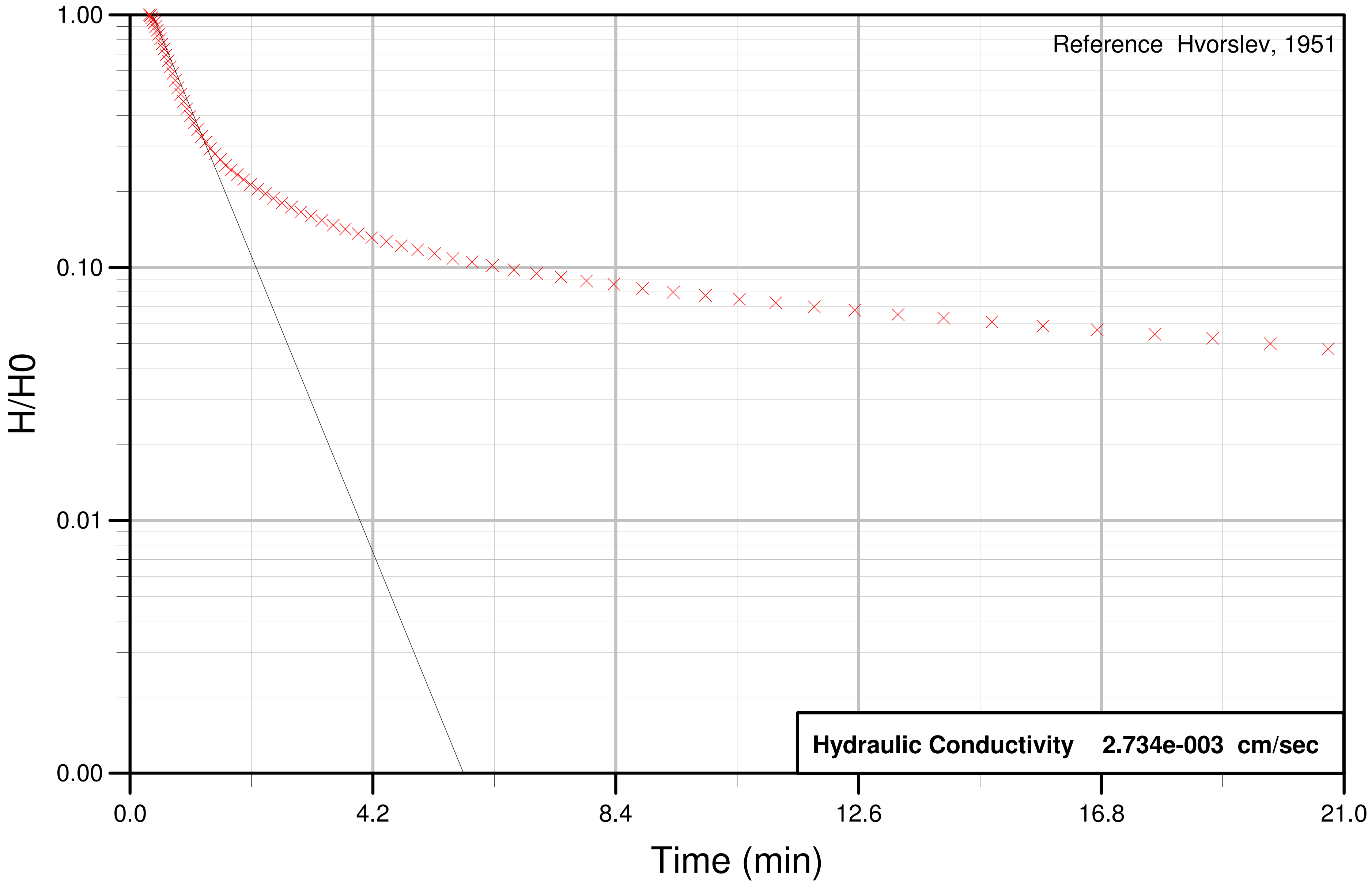
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.40	3.15	3.26	-0.11
1	0.42	3.10	3.16	-0.05
2	0.44	3.03	3.05	-0.02
3	0.47	2.94	2.95	-0.01
4	0.50	2.85	2.85	0.00
5	0.52	2.73	2.74	-0.01
6	0.55	2.62	2.63	-0.01
7	0.59	2.50	2.53	-0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
8	0.62	2.38	2.41	-0.03
9	0.66	2.25	2.29	-0.05
10	0.70	2.12	2.18	-0.06
11	0.74	1.99	2.06	-0.07
12	0.78	1.87	1.94	-0.07
13	0.83	1.75	1.83	-0.08
14	0.88	1.64	1.71	-0.07
15	0.93	1.53	1.60	-0.07
16	0.98	1.42	1.48	-0.06
17	1.04	1.33	1.37	-0.04
18	1.10	1.24	1.26	-0.02
19	1.17	1.16	1.16	0.00
20	1.24	1.09	1.05	0.04
21	1.31	1.02	0.95	0.07
22	1.39	0.97	0.86	0.11
23	1.47	0.92	0.77	0.15
24	1.56	0.87	0.68	0.19
25	1.65	0.83	0.60	0.23
26	1.75	0.79	0.53	0.26
27	1.86	0.76	0.46	0.30
28	1.97	0.72	0.40	0.33
29	2.08	0.69	0.34	0.35
30	2.21	0.66	0.29	0.37
31	2.34	0.63	0.24	0.39
32	2.48	0.61	0.20	0.41
33	2.63	0.58	0.16	0.42
34	2.79	0.56	0.13	0.43
35	2.95	0.54	0.11	0.43
36	3.13	0.52	0.08	0.43
37	3.32	0.50	0.06	0.43
38	3.51	0.48	0.05	0.43
39	3.72	0.46	0.04	0.42
40	3.95	0.44	0.03	0.42
41	4.18	0.43	0.02	0.41
42	4.43	0.41	0.01	0.40
43	4.69	0.40	0.01	0.39
44	4.97	0.39	0.01	0.38
45	5.27	0.37	0.00	0.37
46	5.58	0.36	0.00	0.36
47	5.91	0.35	0.00	0.35
48	6.27	0.34	0.00	0.34

Index	Time	Obs. Displacement	Calc. Displacement	Residual
49	6.64	0.33	0.00	0.32
50	7.03	0.32	0.00	0.32
51	7.45	0.31	0.00	0.31
52	7.90	0.30	0.00	0.30
53	8.37	0.29	0.00	0.29
54	8.86	0.28	0.00	0.28
55	9.39	0.27	0.00	0.27
56	9.95	0.26	0.00	0.26
57	10.54	0.26	0.00	0.26
58	11.17	0.25	0.00	0.25
59	11.83	0.24	0.00	0.24
60	12.53	0.24	0.00	0.24

PT-INJ-1 Falling Head Test 2



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                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-1 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 73                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 15 ft
```

```
Initial Displacement
     Fixed Value                  = 3.083 ft

Hydraulic Conductivity
     Calculated Value             = 0.00273382 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.776976 min

Linear Regression Slope
     Fixed Value                  = -1.27964 /min

Linear Regression Intercept
     Fixed Value                  = 1.61961

Aquifer Thickness
     Fixed Value                  = 15 ft

Calculation Type
     Selected Value               = Full Penetration
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.279644 /min
             Intercept:    1.619615 dimensionless

Residual Mean           =  0.149211
Residual Standard Dev.  =  0.190442
Residual Sum of Squares =  4.272834
Absolute Residual Mean  =  0.212770
Minimum Residual        = -0.176541
Maximum Residual        =  0.402314
```

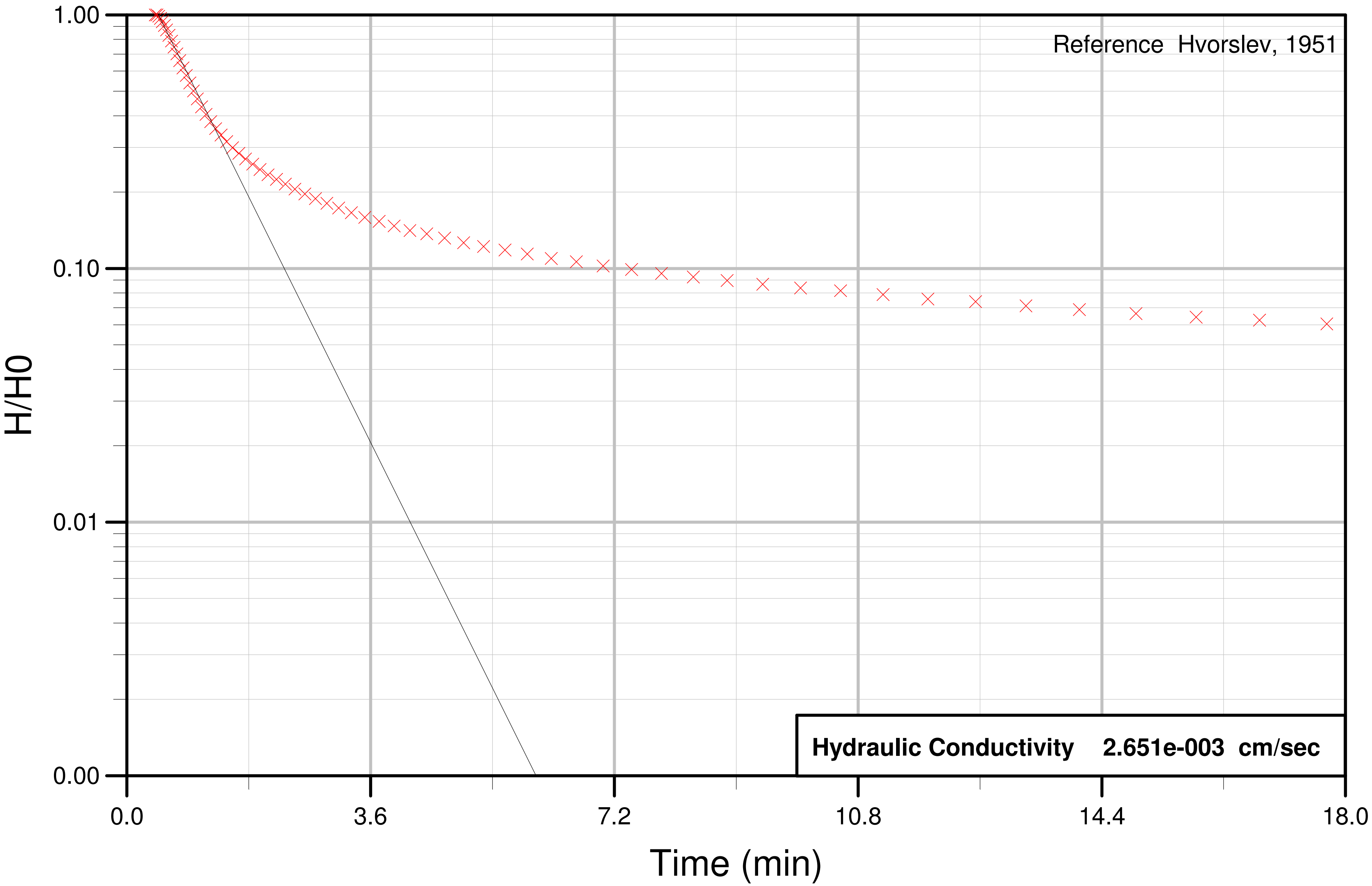
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.33	3.08	3.26	-0.18
1	0.35	3.06	3.18	-0.12
2	0.37	3.00	3.09	-0.09
3	0.40	2.94	3.01	-0.07
4	0.42	2.87	2.92	-0.05
5	0.44	2.77	2.83	-0.06
6	0.47	2.68	2.74	-0.06
7	0.50	2.58	2.65	-0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
8	0.52	2.47	2.55	-0.08
9	0.55	2.37	2.46	-0.09
10	0.59	2.26	2.36	-0.10
11	0.62	2.14	2.25	-0.11
12	0.66	2.03	2.15	-0.12
13	0.70	1.92	2.05	-0.13
14	0.74	1.81	1.94	-0.14
15	0.78	1.70	1.84	-0.14
16	0.83	1.59	1.73	-0.14
17	0.88	1.49	1.63	-0.14
18	0.93	1.40	1.52	-0.13
19	0.98	1.31	1.42	-0.11
20	1.04	1.23	1.32	-0.09
21	1.10	1.15	1.22	-0.07
22	1.17	1.08	1.12	-0.04
23	1.24	1.02	1.02	-0.01
24	1.31	0.96	0.93	0.03
25	1.39	0.91	0.84	0.07
26	1.47	0.87	0.76	0.11
27	1.56	0.82	0.68	0.15
28	1.65	0.78	0.60	0.18
29	1.75	0.75	0.53	0.22
30	1.86	0.72	0.46	0.25
31	1.97	0.69	0.40	0.28
32	2.08	0.66	0.35	0.31
33	2.21	0.63	0.30	0.33
34	2.34	0.60	0.25	0.35
35	2.48	0.58	0.21	0.37
36	2.63	0.56	0.17	0.38
37	2.79	0.53	0.14	0.39
38	2.95	0.51	0.11	0.40
39	3.13	0.49	0.09	0.40
40	3.32	0.47	0.07	0.40
41	3.51	0.45	0.06	0.40
42	3.72	0.44	0.04	0.40
43	3.95	0.42	0.03	0.39
44	4.18	0.41	0.02	0.38
45	4.43	0.39	0.02	0.37
46	4.69	0.38	0.01	0.36
47	4.97	0.36	0.01	0.35
48	5.27	0.35	0.01	0.34

Index	Time	Obs. Displacement	Calc. Displacement	Residual
49	5.58	0.34	0.00	0.33
50	5.91	0.33	0.00	0.32
51	6.27	0.31	0.00	0.31
52	6.64	0.30	0.00	0.30
53	7.03	0.29	0.00	0.29
54	7.45	0.28	0.00	0.28
55	7.90	0.27	0.00	0.27
56	8.37	0.27	0.00	0.26
57	8.86	0.26	0.00	0.25
58	9.39	0.25	0.00	0.25
59	9.95	0.24	0.00	0.24
60	10.54	0.23	0.00	0.23
61	11.17	0.22	0.00	0.22
62	11.83	0.22	0.00	0.22
63	12.53	0.21	0.00	0.21
64	13.28	0.20	0.00	0.20
65	14.07	0.20	0.00	0.19
66	14.91	0.19	0.00	0.19
67	15.79	0.18	0.00	0.18
68	16.73	0.18	0.00	0.18
69	17.72	0.17	0.00	0.17
70	18.72	0.16	0.00	0.16
71	19.72	0.15	0.00	0.15
72	20.72	0.15	0.00	0.15

PT-INJ-1 Falling Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-1 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 66                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 15 ft
```

```
Initial Displacement
     Fixed Value                  = 2.876 ft

Hydraulic Conductivity
     Calculated Value             = 0.00265057 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.801377 min

Linear Regression Slope
     Fixed Value                  = -1.24068 /min

Linear Regression Intercept
     Fixed Value                  = 1.79718

Aquifer Thickness
     Fixed Value                  = 15 ft

Calculation Type
     Selected Value               = Full Penetration
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.240680 /min
             Intercept:    1.797184 dimensionless

Residual Mean           =  0.172415
Residual Standard Dev.  =  0.170532
Residual Sum of Squares =  3.881337
Absolute Residual Mean  =  0.204965
Minimum Residual        = -0.194328
Maximum Residual        =  0.392561
```

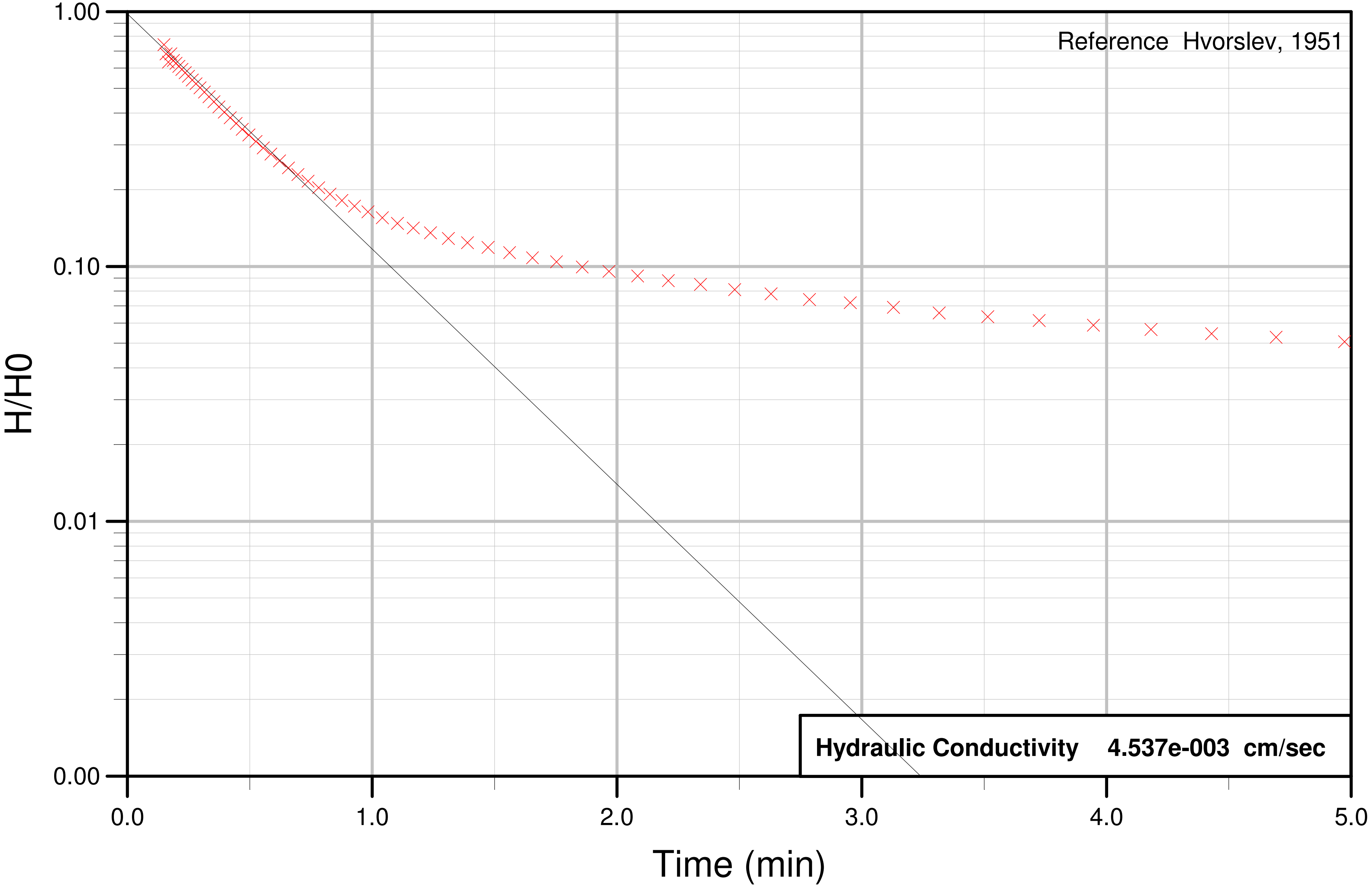
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.42	2.88	3.07	-0.19
1	0.44	2.87	2.98	-0.10
2	0.47	2.84	2.89	-0.05
3	0.50	2.78	2.79	-0.01
4	0.52	2.70	2.70	0.01
5	0.55	2.61	2.60	0.02
6	0.59	2.51	2.50	0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
7	0.62	2.39	2.39	0.00
8	0.66	2.27	2.29	-0.02
9	0.70	2.14	2.18	-0.03
10	0.74	2.02	2.07	-0.05
11	0.78	1.90	1.96	-0.06
12	0.83	1.78	1.85	-0.07
13	0.88	1.66	1.74	-0.08
14	0.93	1.55	1.63	-0.09
15	0.98	1.44	1.53	-0.09
16	1.04	1.34	1.42	-0.08
17	1.10	1.25	1.32	-0.07
18	1.17	1.17	1.21	-0.05
19	1.24	1.09	1.11	-0.02
20	1.31	1.02	1.02	0.01
21	1.39	0.97	0.92	0.04
22	1.47	0.91	0.83	0.08
23	1.56	0.86	0.74	0.12
24	1.65	0.82	0.66	0.15
25	1.75	0.78	0.59	0.19
26	1.86	0.74	0.52	0.23
27	1.97	0.71	0.45	0.26
28	2.08	0.67	0.39	0.28
29	2.21	0.65	0.33	0.31
30	2.34	0.62	0.28	0.34
31	2.48	0.59	0.24	0.35
32	2.63	0.57	0.20	0.37
33	2.79	0.54	0.16	0.38
34	2.95	0.52	0.13	0.39
35	3.13	0.50	0.11	0.39
36	3.32	0.48	0.08	0.39
37	3.51	0.46	0.07	0.39
38	3.72	0.44	0.05	0.39
39	3.95	0.42	0.04	0.38
40	4.18	0.41	0.03	0.38
41	4.43	0.39	0.02	0.37
42	4.69	0.38	0.02	0.36
43	4.97	0.36	0.01	0.35
44	5.27	0.35	0.01	0.34
45	5.58	0.34	0.01	0.33
46	5.91	0.33	0.00	0.32
47	6.27	0.32	0.00	0.31

Index	Time	Obs. Displacement	Calc. Displacement	Residual
48	6.64	0.31	0.00	0.30
49	7.03	0.29	0.00	0.29
50	7.45	0.29	0.00	0.28
51	7.90	0.28	0.00	0.27
52	8.37	0.27	0.00	0.27
53	8.86	0.26	0.00	0.26
54	9.39	0.25	0.00	0.25
55	9.95	0.24	0.00	0.24
56	10.54	0.24	0.00	0.23
57	11.17	0.23	0.00	0.23
58	11.83	0.22	0.00	0.22
59	12.53	0.21	0.00	0.21
60	13.28	0.21	0.00	0.20
61	14.07	0.20	0.00	0.20
62	14.91	0.19	0.00	0.19
63	15.79	0.19	0.00	0.19
64	16.73	0.18	0.00	0.18
65	17.72	0.17	0.00	0.17

PT-INJ-1 Falling Head Test 4



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-1 Falling Test 4
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 62                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 15 ft
```

```
     Initial Displacement
          Fixed Value                  = 2.331 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00453725 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.468149 min

     Linear Regression Slope
          Fixed Value                  = -2.1238 /min

     Linear Regression Intercept
          Fixed Value                  = 0.981482

     Aquifer Thickness
          Fixed Value                  = 15 ft

     Calculation Type
          Selected Value               = Full Penetration


ANALYSIS STATISTICS

     Regression Line
                 Slope:       -2.123796 /min
                 Intercept:    0.981482 dimensionless

     Residual Mean           =  0.062021
     Residual Standard Dev.  =  0.095295
     Residual Sum of Squares =  0.801516
     Absolute Residual Mean  =  0.095645
     Minimum Residual        = -0.127692
     Maximum Residual        =  0.187972
```

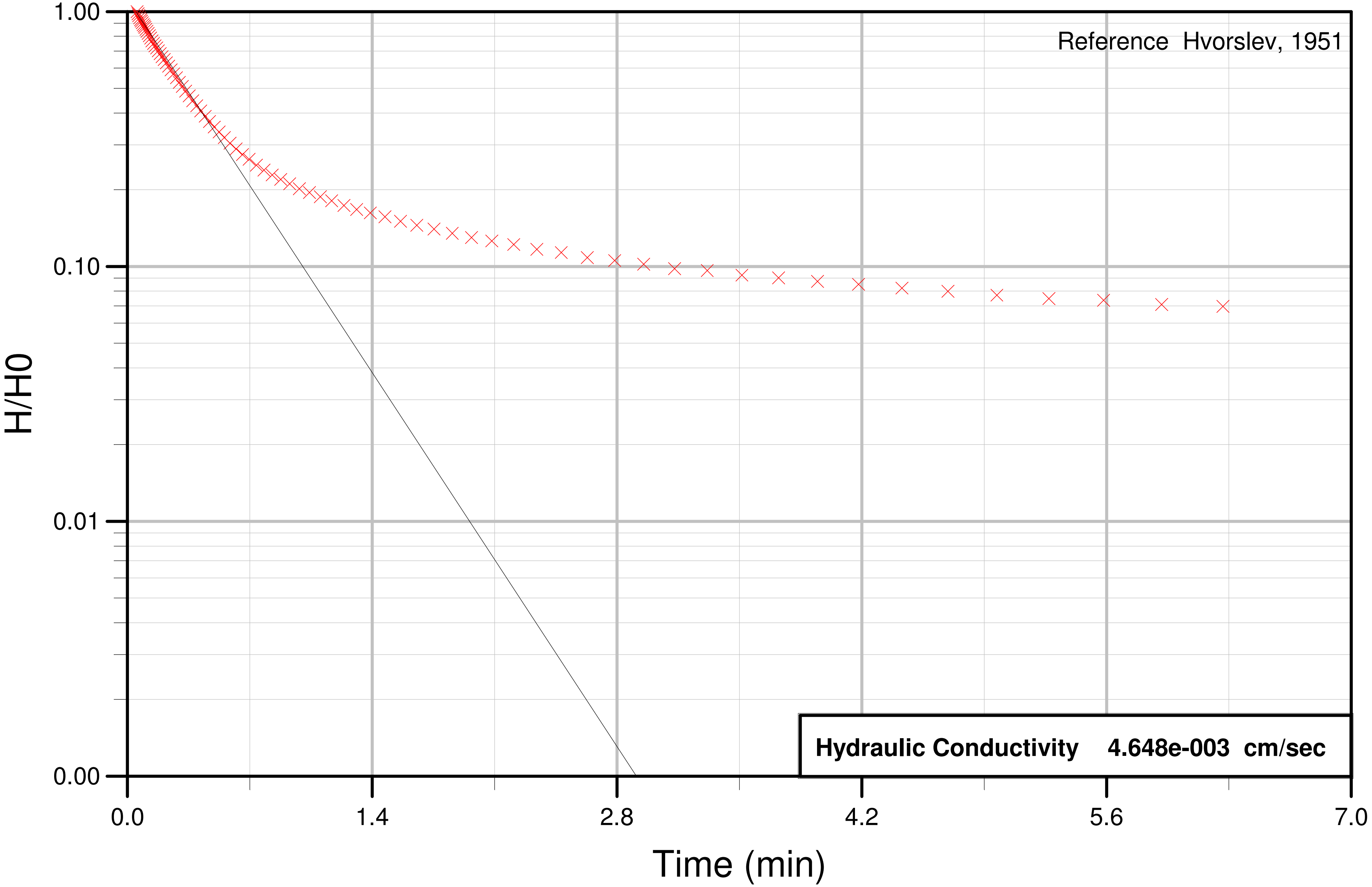
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.15	1.73	1.67	0.06
1	0.16	1.59	1.64	-0.05
2	0.17	1.48	1.60	-0.13
3	0.18	1.59	1.57	0.02
4	0.19	1.50	1.54	-0.04
5	0.20	1.46	1.50	-0.04
6	0.21	1.42	1.46	-0.04
7	0.22	1.38	1.43	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
8	0.24	1.34	1.39	-0.05
9	0.25	1.30	1.35	-0.05
10	0.26	1.26	1.30	-0.05
11	0.28	1.22	1.26	-0.05
12	0.30	1.17	1.22	-0.05
13	0.31	1.13	1.17	-0.05
14	0.33	1.08	1.13	-0.05
15	0.35	1.03	1.08	-0.05
16	0.37	0.99	1.03	-0.05
17	0.40	0.94	0.99	-0.05
18	0.42	0.89	0.94	-0.05
19	0.44	0.85	0.89	-0.04
20	0.47	0.81	0.84	-0.04
21	0.50	0.76	0.80	-0.03
22	0.52	0.72	0.75	-0.03
23	0.55	0.68	0.70	-0.02
24	0.59	0.64	0.66	-0.02
25	0.62	0.61	0.61	-0.01
26	0.66	0.57	0.57	0.00
27	0.70	0.54	0.52	0.01
28	0.74	0.50	0.48	0.03
29	0.78	0.48	0.44	0.04
30	0.83	0.45	0.39	0.05
31	0.88	0.42	0.36	0.07
32	0.93	0.40	0.32	0.08
33	0.98	0.38	0.28	0.10
34	1.04	0.36	0.25	0.11
35	1.10	0.34	0.22	0.12
36	1.17	0.33	0.19	0.14
37	1.24	0.32	0.17	0.15
38	1.31	0.30	0.14	0.16
39	1.39	0.29	0.12	0.17
40	1.47	0.28	0.10	0.18
41	1.56	0.26	0.08	0.18
42	1.65	0.25	0.07	0.18
43	1.75	0.24	0.06	0.19
44	1.86	0.23	0.04	0.19
45	1.97	0.22	0.04	0.19
46	2.08	0.21	0.03	0.19
47	2.21	0.21	0.02	0.18
48	2.34	0.20	0.02	0.18

Index	Time	Obs. Displacement	Calc. Displacement	Residual
49	2.48	0.19	0.01	0.18
50	2.63	0.18	0.01	0.17
51	2.79	0.17	0.01	0.17
52	2.95	0.17	0.00	0.16
53	3.13	0.16	0.00	0.16
54	3.32	0.15	0.00	0.15
55	3.51	0.15	0.00	0.15
56	3.72	0.14	0.00	0.14
57	3.95	0.14	0.00	0.14
58	4.18	0.13	0.00	0.13
59	4.43	0.13	0.00	0.13
60	4.69	0.12	0.00	0.12
61	4.97	0.12	0.00	0.12

PT-INJ-1 Rising Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE

Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-1 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/9/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 82                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 15 ft
```

```
     Initial Displacement
          Fixed Value                    = 1.763 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00464847 cm/sec

     Time to 37% Displacement
          Calculated Value               = 0.411731 min

     Linear Regression Slope
          Fixed Value                    = -2.41481 /min

     Linear Regression Intercept
          Fixed Value                    = 1.13516

     Aquifer Thickness
          Fixed Value                    = 15 ft

     Calculation Type
          Selected Value                 = Full Penetration


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -2.414812 /min
                  Intercept:    1.135165 dimensionless

     Residual Mean           =  0.065941
     Residual Standard Dev.  =  0.107095
     Residual Sum of Squares =  1.297038
     Absolute Residual Mean  =  0.104330
     Minimum Residual        = -0.075200
     Maximum Residual        =  0.219190

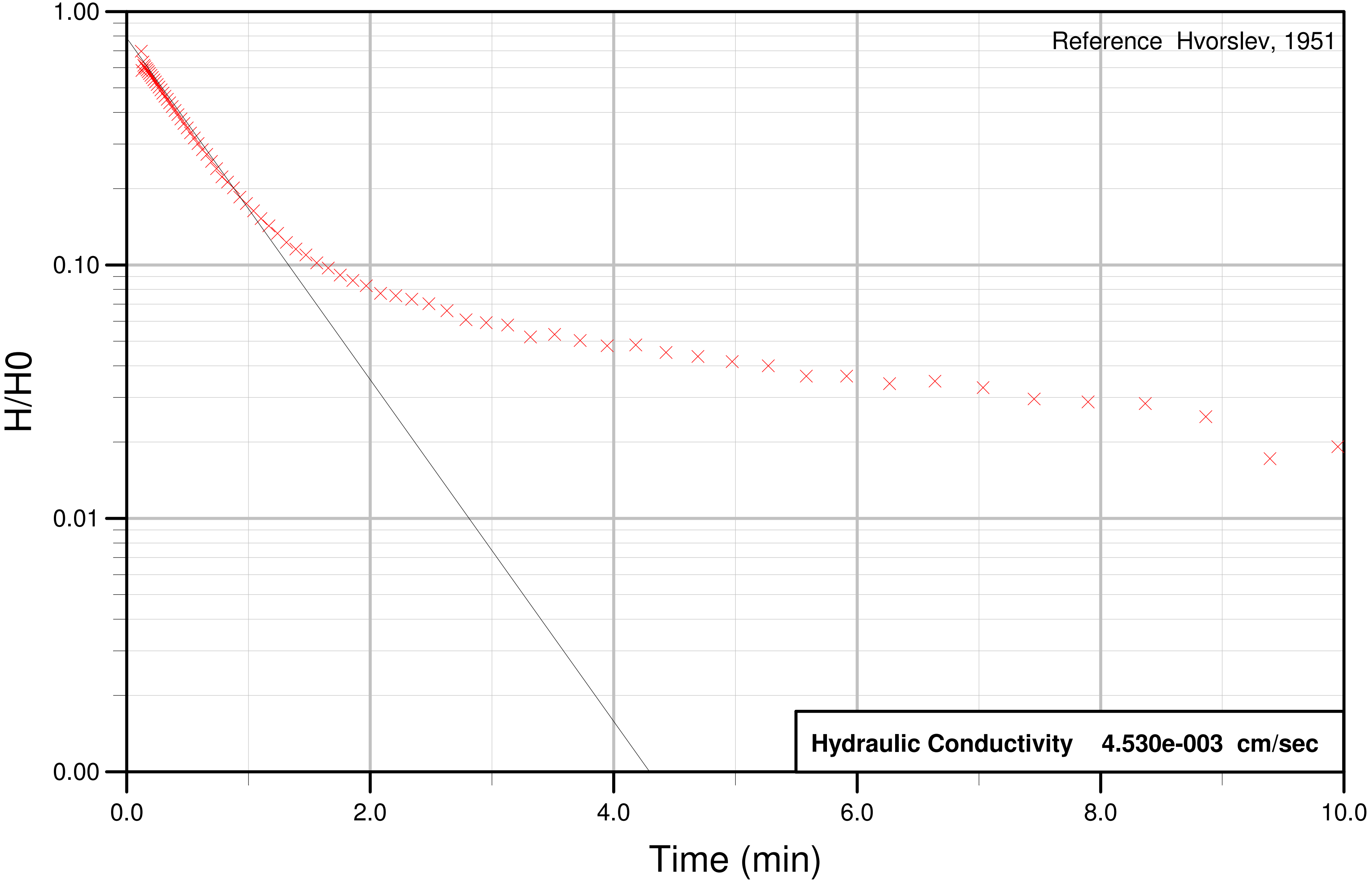

DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.05	1.76	1.75	0.01
1	0.06	1.73	1.73	0.00
2	0.06	1.70	1.71	-0.01
3	0.07	1.67	1.69	-0.02
4	0.08	1.64	1.67	-0.03
5	0.08	1.62	1.65	-0.03
6	0.08	1.60	1.63	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
7	0.09	1.57	1.61	-0.04
8	0.10	1.55	1.59	-0.04
9	0.10	1.53	1.57	-0.05
10	0.11	1.50	1.55	-0.05
11	0.11	1.48	1.53	-0.05
12	0.12	1.45	1.50	-0.06
13	0.13	1.42	1.48	-0.06
14	0.13	1.39	1.45	-0.06
15	0.14	1.35	1.43	-0.07
16	0.15	1.32	1.40	-0.08
17	0.16	1.29	1.37	-0.07
18	0.17	1.27	1.34	-0.07
19	0.18	1.24	1.31	-0.07
20	0.19	1.21	1.27	-0.07
21	0.20	1.17	1.24	-0.07
22	0.21	1.14	1.21	-0.06
23	0.22	1.11	1.17	-0.06
24	0.24	1.08	1.13	-0.06
25	0.25	1.04	1.09	-0.05
26	0.26	1.01	1.06	-0.05
27	0.28	0.97	1.02	-0.05
28	0.30	0.93	0.98	-0.05
29	0.31	0.90	0.94	-0.04
30	0.33	0.86	0.89	-0.03
31	0.35	0.82	0.85	-0.03
32	0.37	0.79	0.81	-0.02
33	0.40	0.75	0.77	-0.02
34	0.42	0.72	0.73	-0.01
35	0.44	0.69	0.68	0.00
36	0.47	0.65	0.64	0.01
37	0.50	0.62	0.60	0.02
38	0.52	0.59	0.56	0.03
39	0.55	0.57	0.52	0.04
40	0.59	0.54	0.49	0.05
41	0.62	0.51	0.45	0.06
42	0.66	0.49	0.41	0.08
43	0.70	0.46	0.37	0.09
44	0.74	0.44	0.34	0.10
45	0.78	0.42	0.30	0.12
46	0.83	0.40	0.27	0.13
47	0.88	0.39	0.24	0.15

Index	Time	Obs. Displacement	Calc. Displacement	Residual
48	0.93	0.37	0.21	0.16
49	0.98	0.36	0.19	0.17
50	1.04	0.34	0.16	0.18
51	1.10	0.33	0.14	0.19
52	1.17	0.32	0.12	0.20
53	1.24	0.31	0.10	0.21
54	1.31	0.30	0.08	0.21
55	1.39	0.29	0.07	0.22
56	1.47	0.28	0.06	0.22
57	1.56	0.27	0.05	0.22
58	1.65	0.26	0.04	0.22
59	1.75	0.25	0.03	0.22
60	1.86	0.24	0.02	0.22
61	1.97	0.23	0.02	0.21
62	2.08	0.22	0.01	0.21
63	2.21	0.22	0.01	0.21
64	2.34	0.21	0.01	0.20
65	2.48	0.20	0.01	0.19
66	2.63	0.19	0.00	0.19
67	2.79	0.19	0.00	0.18
68	2.95	0.18	0.00	0.18
69	3.13	0.17	0.00	0.17
70	3.32	0.17	0.00	0.17
71	3.51	0.16	0.00	0.16
72	3.72	0.16	0.00	0.16
73	3.95	0.15	0.00	0.15
74	4.18	0.15	0.00	0.15
75	4.43	0.15	0.00	0.14
76	4.69	0.14	0.00	0.14
77	4.97	0.14	0.00	0.14
78	5.27	0.13	0.00	0.13
79	5.58	0.13	0.00	0.13
80	5.91	0.13	0.00	0.12
81	6.27	0.12	0.00	0.12

PT-INJ-2 Falling Head Test 1



```
                          AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-2 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 78                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 14.2 ft
```

```
Initial Displacement
     Fixed Value                 = 2.501 ft

Hydraulic Conductivity
     Calculated Value            = 0.00452996 cm/sec

Time to 37% Displacement
     Calculated Value            = 0.489284 min

Linear Regression Slope
     Fixed Value                 = -1.55204 /min

Linear Regression Intercept
     Fixed Value                 = 0.790679

Calculation Type
     Selected Value              = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.552040 /min
             Intercept:    0.790679 dimensionless

Residual Mean           =  0.025680
Residual Standard Dev.  =  0.074581
Residual Sum of Squares =  0.485305
Absolute Residual Mean  =  0.070133
Minimum Residual        = -0.164501
Maximum Residual        =  0.133958
```

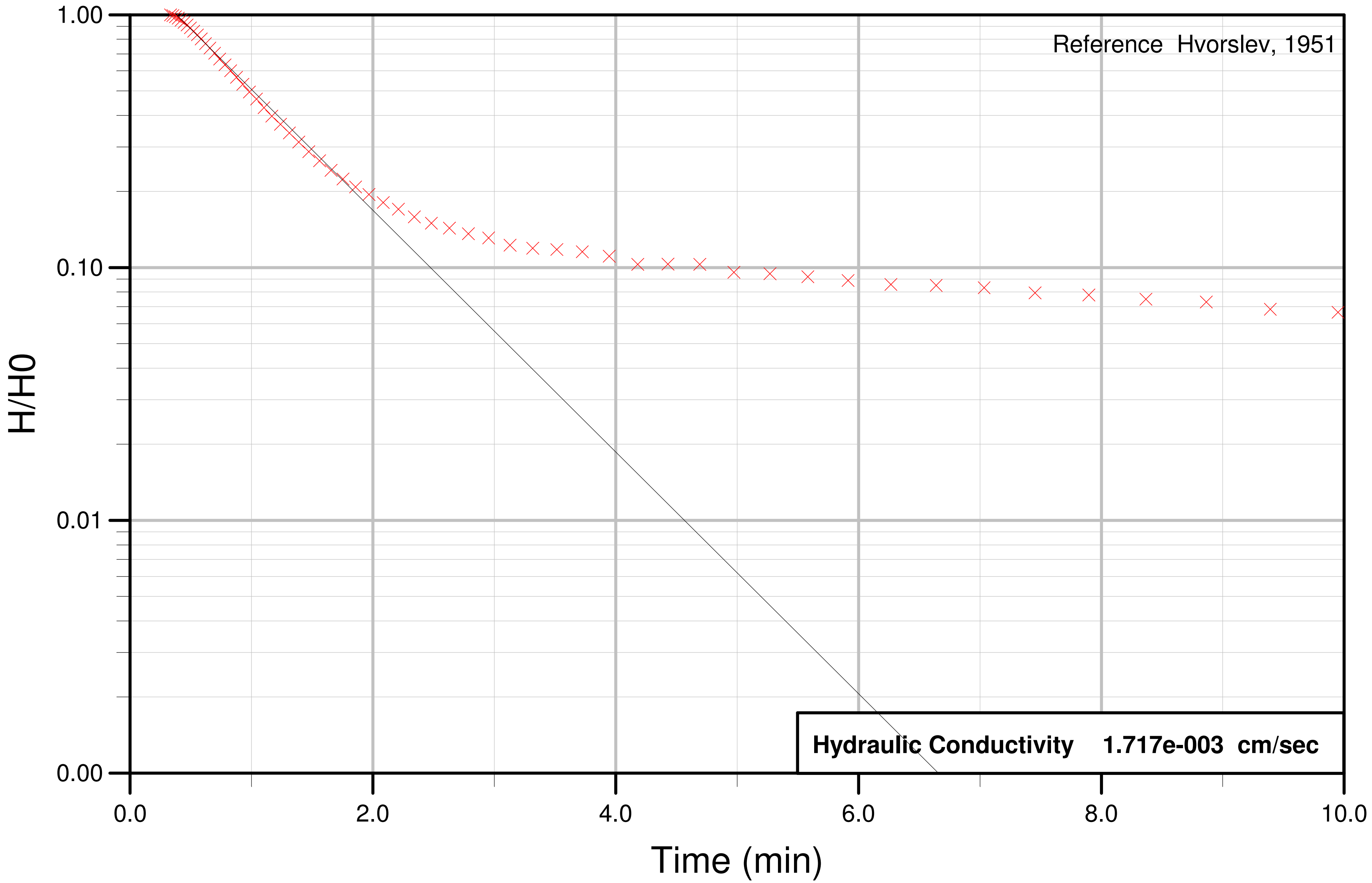
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.12	1.74	1.65	0.10
1	0.13	1.46	1.63	-0.16
2	0.13	1.58	1.61	-0.03
3	0.14	1.53	1.59	-0.06
4	0.15	1.52	1.57	-0.05
5	0.16	1.49	1.55	-0.06
6	0.17	1.47	1.53	-0.05
7	0.18	1.45	1.50	-0.05
8	0.19	1.42	1.48	-0.05
9	0.20	1.40	1.45	-0.05

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.21	1.37	1.43	-0.05
11	0.22	1.35	1.40	-0.06
12	0.24	1.32	1.37	-0.05
13	0.25	1.29	1.34	-0.05
14	0.26	1.26	1.31	-0.05
15	0.28	1.23	1.28	-0.05
16	0.30	1.19	1.25	-0.06
17	0.31	1.16	1.21	-0.05
18	0.33	1.13	1.18	-0.05
19	0.35	1.09	1.14	-0.05
20	0.37	1.05	1.11	-0.05
21	0.40	1.02	1.07	-0.05
22	0.42	0.98	1.03	-0.05
23	0.44	0.94	0.99	-0.05
24	0.47	0.90	0.95	-0.05
25	0.50	0.87	0.92	-0.05
26	0.52	0.83	0.88	-0.05
27	0.55	0.79	0.84	-0.04
28	0.59	0.75	0.80	-0.04
29	0.62	0.71	0.75	-0.04
30	0.66	0.68	0.71	-0.03
31	0.70	0.64	0.67	-0.03
32	0.74	0.60	0.63	-0.03
33	0.78	0.56	0.59	-0.03
34	0.83	0.53	0.55	-0.02
35	0.88	0.50	0.51	0.00
36	0.93	0.46	0.47	-0.01
37	0.98	0.44	0.43	0.01
38	1.04	0.41	0.39	0.02
39	1.10	0.38	0.36	0.02
40	1.17	0.36	0.32	0.03
41	1.24	0.33	0.29	0.04
42	1.31	0.31	0.26	0.05
43	1.39	0.29	0.23	0.06
44	1.47	0.27	0.20	0.07
45	1.56	0.26	0.18	0.08
46	1.65	0.24	0.15	0.09
47	1.75	0.23	0.13	0.10
48	1.86	0.22	0.11	0.11
49	1.97	0.21	0.09	0.11
50	2.08	0.19	0.08	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	2.21	0.19	0.06	0.12
52	2.34	0.18	0.05	0.13
53	2.48	0.18	0.04	0.13
54	2.63	0.17	0.03	0.13
55	2.79	0.15	0.03	0.13
56	2.95	0.15	0.02	0.13
57	3.13	0.15	0.02	0.13
58	3.32	0.13	0.01	0.12
59	3.51	0.13	0.01	0.12
60	3.72	0.13	0.01	0.12
61	3.95	0.12	0.00	0.12
62	4.18	0.12	0.00	0.12
63	4.43	0.11	0.00	0.11
64	4.69	0.11	0.00	0.11
65	4.97	0.10	0.00	0.10
66	5.27	0.10	0.00	0.10
67	5.58	0.09	0.00	0.09
68	5.91	0.09	0.00	0.09
69	6.27	0.09	0.00	0.08
70	6.64	0.09	0.00	0.09
71	7.03	0.08	0.00	0.08
72	7.45	0.07	0.00	0.07
73	7.90	0.07	0.00	0.07
74	8.37	0.07	0.00	0.07
75	8.86	0.06	0.00	0.06
76	9.39	0.04	0.00	0.04
77	9.95	0.05	0.00	0.05

PT-INJ-2 Falling Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-2 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 60                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 14.2 ft
```

```
     Initial Displacement
          Fixed Value                  = 3.351 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00171726 cm/sec

     Time to 37% Displacement
          Calculated Value             = 1.29068 min

     Linear Regression Slope
          Fixed Value                  = -1.10084 /min

     Linear Regression Intercept
          Fixed Value                  = 1.532

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                    Slope:        -1.100837 /min
                    Intercept:     1.532001 dimensionless

     Residual Mean           =  0.092227
     Residual Standard Dev.  =  0.157349
     Residual Sum of Squares =  1.995870
     Absolute Residual Mean  =  0.144654
     Minimum Residual        = -0.206024
     Maximum Residual        =  0.315700
```

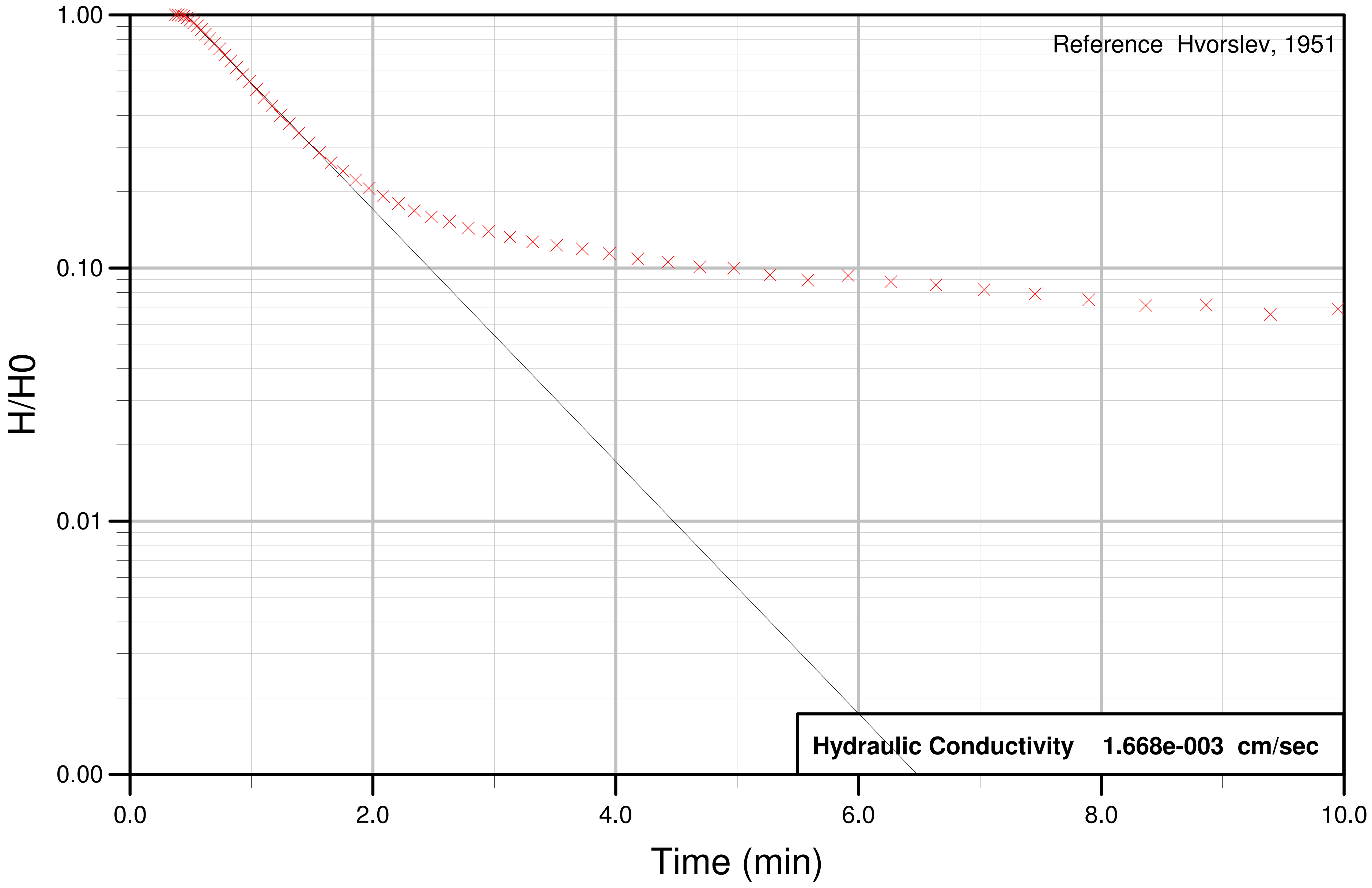
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.33	3.35	3.56	-0.21
1	0.35	3.33	3.48	-0.15
2	0.37	3.29	3.40	-0.11
3	0.40	3.25	3.32	-0.07
4	0.42	3.19	3.23	-0.04
5	0.44	3.13	3.15	-0.02
6	0.47	3.06	3.06	-0.01
7	0.50	2.98	2.97	0.00
8	0.52	2.88	2.88	0.00
9	0.55	2.79	2.79	0.00

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.59	2.69	2.69	0.00
11	0.62	2.58	2.59	-0.01
12	0.66	2.47	2.49	-0.02
13	0.70	2.36	2.39	-0.03
14	0.74	2.24	2.28	-0.04
15	0.78	2.13	2.17	-0.05
16	0.83	2.01	2.06	-0.05
17	0.88	1.90	1.96	-0.06
18	0.93	1.78	1.85	-0.07
19	0.98	1.66	1.74	-0.08
20	1.04	1.55	1.63	-0.08
21	1.10	1.44	1.52	-0.09
22	1.17	1.33	1.42	-0.09
23	1.24	1.24	1.31	-0.08
24	1.31	1.14	1.21	-0.07
25	1.39	1.05	1.11	-0.06
26	1.47	0.96	1.01	-0.05
27	1.56	0.89	0.92	-0.03
28	1.65	0.81	0.83	-0.02
29	1.75	0.75	0.75	0.00
30	1.86	0.70	0.66	0.03
31	1.97	0.65	0.59	0.06
32	2.08	0.61	0.52	0.09
33	2.21	0.57	0.45	0.12
34	2.34	0.53	0.39	0.14
35	2.48	0.50	0.33	0.17
36	2.63	0.48	0.28	0.20
37	2.79	0.46	0.24	0.22
38	2.95	0.44	0.20	0.24
39	3.13	0.41	0.16	0.25
40	3.32	0.40	0.13	0.27
41	3.51	0.40	0.11	0.29
42	3.72	0.39	0.09	0.30
43	3.95	0.37	0.07	0.31
44	4.18	0.35	0.05	0.29
45	4.43	0.35	0.04	0.31
46	4.69	0.35	0.03	0.32
47	4.97	0.32	0.02	0.30
48	5.27	0.32	0.02	0.30
49	5.58	0.31	0.01	0.30
50	5.91	0.30	0.01	0.29

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	6.27	0.29	0.01	0.28
52	6.64	0.29	0.00	0.28
53	7.03	0.28	0.00	0.28
54	7.45	0.27	0.00	0.26
55	7.90	0.26	0.00	0.26
56	8.37	0.25	0.00	0.25
57	8.86	0.25	0.00	0.24
58	9.39	0.23	0.00	0.23
59	9.95	0.22	0.00	0.22

PT-INJ-2 Falling Head Test 3



Hydraulic Conductivity 1.668e-003 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-2 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 58                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 14.2 ft
```

```
     Initial Displacement
          Fixed Value                    = 3.418 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00166781 cm/sec

     Time to 37% Displacement
          Calculated Value               = 1.32895 min

     Linear Regression Slope
          Fixed Value                    = -1.14575 /min

     Linear Regression Intercept
          Fixed Value                    = 1.6962

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:        -1.145747 /min
                  Intercept:     1.696198 dimensionless

     Residual Mean           =  0.115982
     Residual Standard Dev.  =  0.166137
     Residual Sum of Squares =  2.381096
     Absolute Residual Mean  =  0.156835
     Minimum Residual        = -0.359020
     Maximum Residual        =  0.326962
```

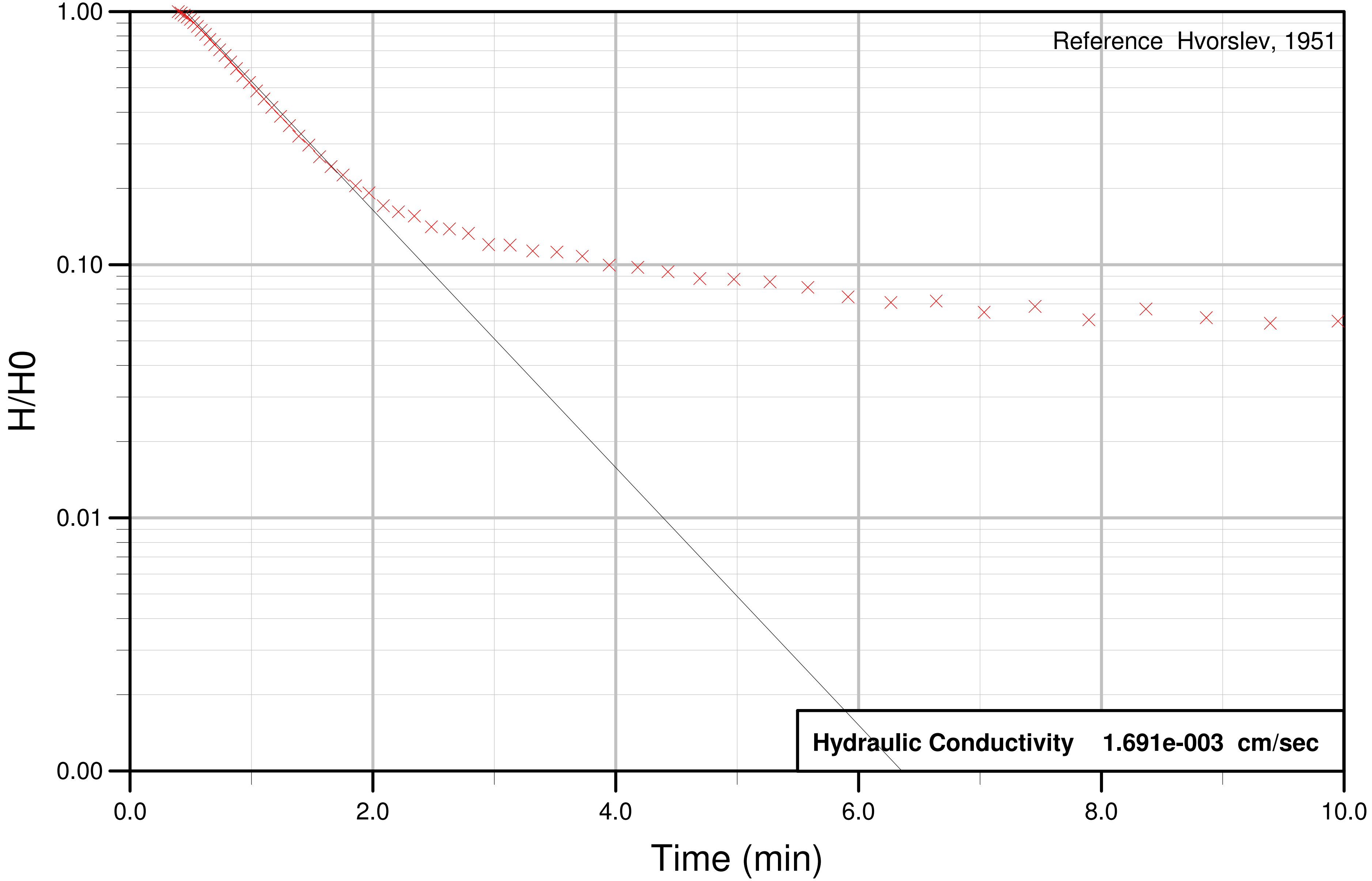
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.37	3.42	3.78	-0.36
1	0.40	3.42	3.68	-0.27
2	0.42	3.40	3.58	-0.18
3	0.44	3.38	3.48	-0.10
4	0.47	3.33	3.39	-0.06
5	0.50	3.26	3.28	-0.02
6	0.52	3.18	3.18	0.00
7	0.55	3.09	3.07	0.02
8	0.59	2.99	2.96	0.02
9	0.62	2.87	2.85	0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.66	2.75	2.73	0.02
11	0.70	2.63	2.61	0.02
12	0.74	2.51	2.49	0.02
13	0.78	2.38	2.37	0.01
14	0.83	2.25	2.25	0.00
15	0.88	2.12	2.12	0.00
16	0.93	1.99	2.00	-0.02
17	0.98	1.87	1.88	-0.02
18	1.04	1.73	1.76	-0.03
19	1.10	1.61	1.64	-0.03
20	1.17	1.49	1.52	-0.03
21	1.24	1.37	1.40	-0.03
22	1.31	1.27	1.29	-0.02
23	1.39	1.17	1.18	-0.01
24	1.47	1.07	1.07	-0.01
25	1.56	0.98	0.97	0.01
26	1.65	0.89	0.87	0.02
27	1.75	0.82	0.78	0.05
28	1.86	0.76	0.69	0.07
29	1.97	0.71	0.61	0.10
30	2.08	0.66	0.53	0.12
31	2.21	0.61	0.46	0.15
32	2.34	0.58	0.40	0.18
33	2.48	0.54	0.34	0.21
34	2.63	0.52	0.28	0.24
35	2.79	0.49	0.24	0.25
36	2.95	0.48	0.20	0.28
37	3.13	0.45	0.16	0.29
38	3.32	0.43	0.13	0.30
39	3.51	0.42	0.10	0.32
40	3.72	0.41	0.08	0.33
41	3.95	0.39	0.06	0.33
42	4.18	0.37	0.05	0.32
43	4.43	0.36	0.04	0.32
44	4.69	0.35	0.03	0.32
45	4.97	0.34	0.02	0.32
46	5.27	0.32	0.01	0.31
47	5.58	0.31	0.01	0.30
48	5.91	0.32	0.01	0.31
49	6.27	0.30	0.00	0.30
50	6.64	0.29	0.00	0.29

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
51	7.03	0.28	0.00	0.28
52	7.45	0.27	0.00	0.27
53	7.90	0.26	0.00	0.26
54	8.37	0.24	0.00	0.24
55	8.86	0.24	0.00	0.24
56	9.39	0.22	0.00	0.22
57	9.95	0.24	0.00	0.23

PT-INJ-2 Falling Head Test 4



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-2 Falling Test 4
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 57                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 14.2 ft
```

```
Initial Displacement
     Fixed Value                 = 3.564 ft

Hydraulic Conductivity
     Calculated Value            = 0.00169115 cm/sec

Time to 37% Displacement
     Calculated Value            = 1.31061 min

Linear Regression Slope
     Fixed Value                 = -1.17134 /min

Linear Regression Intercept
     Fixed Value                 = 1.71759

Calculation Type
     Selected Value              = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.171344 /min
             Intercept:    1.717587 dimensionless

Residual Mean           =  0.080848
Residual Standard Dev.  =  0.169443
Residual Sum of Squares =  2.009108
Absolute Residual Mean  =  0.160460
Minimum Residual        = -0.284180
Maximum Residual        =  0.306986
```

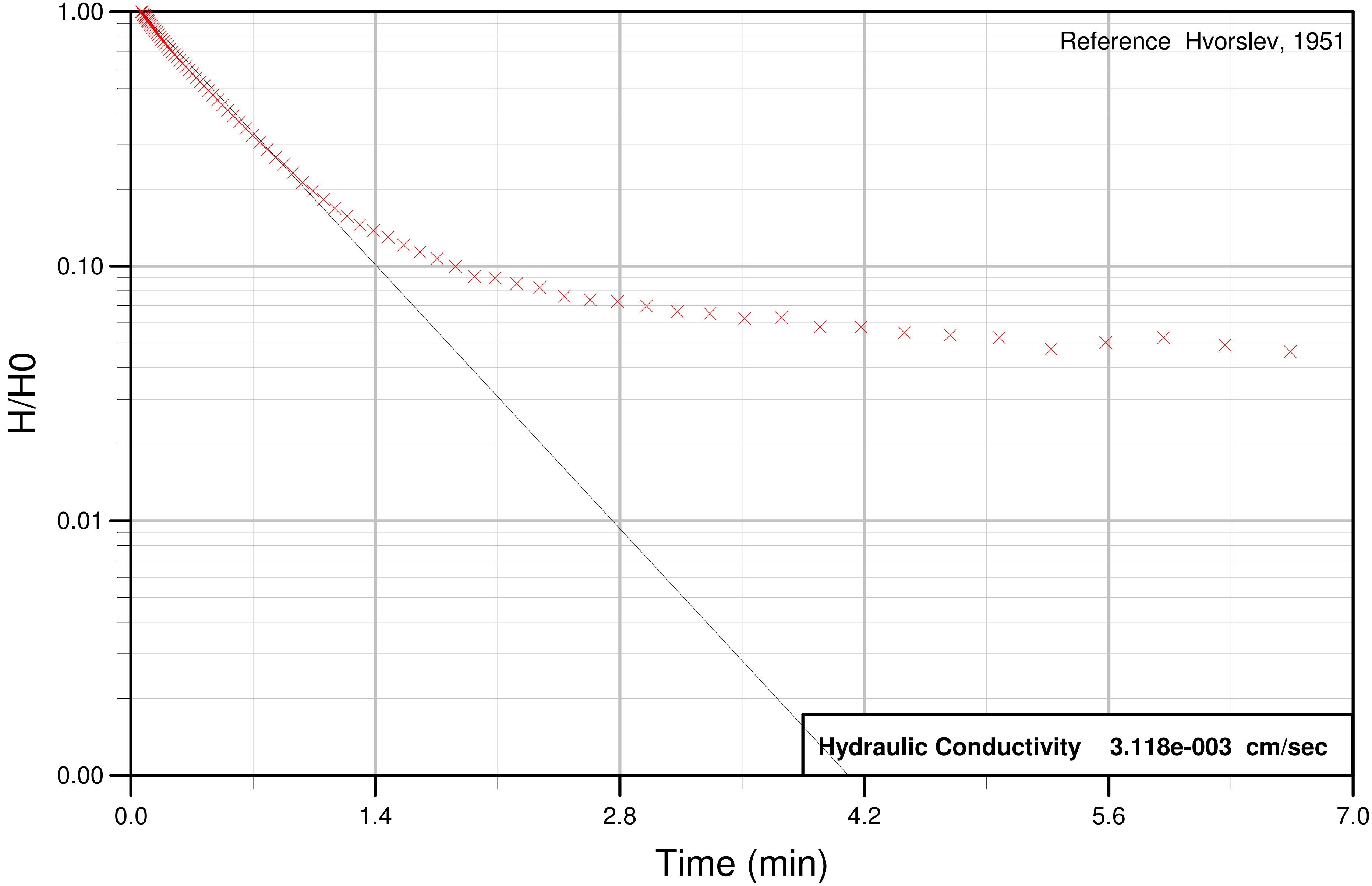
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.40	3.56	3.85	-0.28
1	0.42	3.52	3.74	-0.22
2	0.44	3.45	3.64	-0.19
3	0.47	3.39	3.53	-0.14
4	0.50	3.32	3.42	-0.11
5	0.52	3.22	3.31	-0.09
6	0.55	3.12	3.20	-0.08
7	0.59	3.00	3.08	-0.08
8	0.62	2.90	2.96	-0.06
9	0.66	2.77	2.83	-0.07

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
10	0.70	2.64	2.71	-0.07
11	0.74	2.52	2.58	-0.06
12	0.78	2.39	2.45	-0.06
13	0.83	2.25	2.32	-0.07
14	0.88	2.12	2.19	-0.07
15	0.93	1.99	2.06	-0.08
16	0.98	1.87	1.94	-0.07
17	1.04	1.73	1.81	-0.08
18	1.10	1.61	1.68	-0.07
19	1.17	1.49	1.56	-0.07
20	1.24	1.37	1.44	-0.06
21	1.31	1.26	1.32	-0.06
22	1.39	1.15	1.20	-0.06
23	1.47	1.06	1.09	-0.03
24	1.56	0.95	0.98	-0.03
25	1.65	0.87	0.88	-0.01
26	1.75	0.81	0.79	0.02
27	1.86	0.73	0.69	0.04
28	1.97	0.69	0.61	0.07
29	2.08	0.61	0.53	0.08
30	2.21	0.58	0.46	0.12
31	2.34	0.56	0.39	0.16
32	2.48	0.50	0.33	0.17
33	2.63	0.49	0.28	0.21
34	2.79	0.47	0.23	0.24
35	2.95	0.43	0.19	0.24
36	3.13	0.43	0.16	0.27
37	3.32	0.40	0.13	0.28
38	3.51	0.40	0.10	0.30
39	3.72	0.39	0.08	0.31
40	3.95	0.36	0.06	0.29
41	4.18	0.35	0.05	0.30
42	4.43	0.33	0.03	0.30
43	4.69	0.31	0.03	0.29
44	4.97	0.31	0.02	0.29
45	5.27	0.31	0.01	0.29
46	5.58	0.29	0.01	0.28
47	5.91	0.27	0.01	0.26
48	6.27	0.25	0.00	0.25
49	6.64	0.26	0.00	0.25
50	7.03	0.23	0.00	0.23

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	7.45	0.24	0.00	0.24
52	7.90	0.22	0.00	0.22
53	8.37	0.24	0.00	0.24
54	8.86	0.22	0.00	0.22
55	9.39	0.21	0.00	0.21
56	9.95	0.21	0.00	0.21

PT-INJ-2 Rising Head Test1



```
                    AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-2 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 82                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.2 ft
```

```
     Initial Displacement
          Fixed Value                  = 1.735 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00311759 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.640696 min

     Linear Regression Slope
          Fixed Value                  = -1.70329 /min

     Linear Regression Intercept
          Fixed Value                  = 1.10191

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -1.703294 /min
                  Intercept:    1.101906 dimensionless

     Residual Mean           =  0.012021
     Residual Standard Dev.  =  0.064881
     Residual Sum of Squares =  0.357035
     Absolute Residual Mean  =  0.057170
     Minimum Residual        = -0.076426
     Maximum Residual        =  0.109391
```

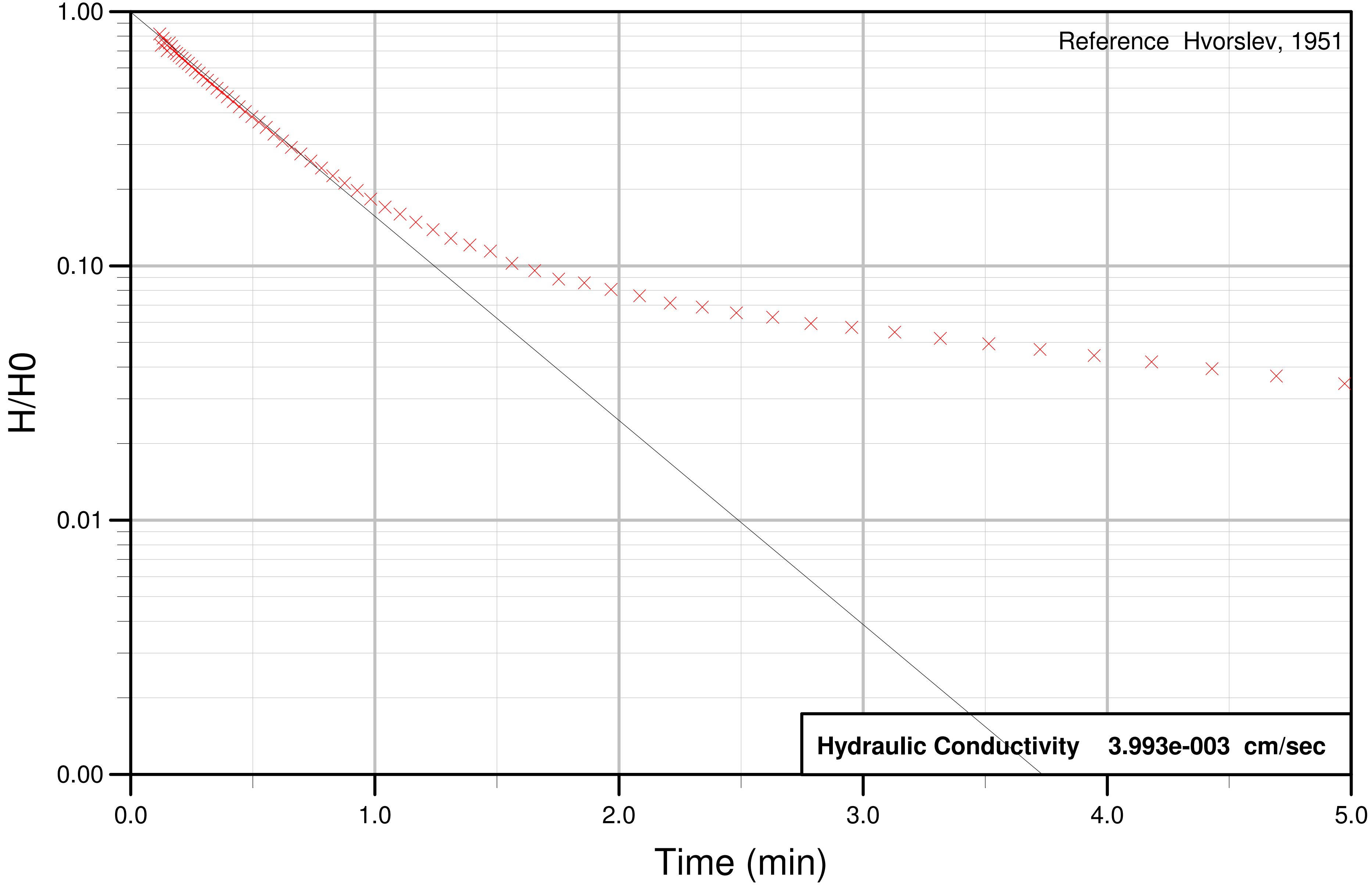
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.06	1.74	1.73	0.01
1	0.06	1.73	1.71	0.02
2	0.07	1.69	1.70	-0.01
3	0.08	1.68	1.68	-0.01
4	0.08	1.67	1.67	0.00
5	0.08	1.65	1.65	-0.01
6	0.09	1.63	1.64	-0.02
7	0.10	1.60	1.63	-0.02
8	0.10	1.59	1.61	-0.02
9	0.11	1.57	1.60	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.11	1.55	1.58	-0.03
11	0.12	1.53	1.56	-0.04
12	0.13	1.50	1.54	-0.04
13	0.13	1.48	1.53	-0.05
14	0.14	1.46	1.50	-0.05
15	0.15	1.43	1.48	-0.05
16	0.16	1.41	1.46	-0.05
17	0.17	1.38	1.44	-0.06
18	0.18	1.35	1.41	-0.06
19	0.19	1.32	1.39	-0.07
20	0.20	1.30	1.36	-0.07
21	0.21	1.26	1.34	-0.07
22	0.22	1.24	1.31	-0.07
23	0.24	1.20	1.28	-0.08
24	0.25	1.17	1.25	-0.08
25	0.26	1.15	1.22	-0.07
26	0.28	1.12	1.19	-0.07
27	0.30	1.08	1.15	-0.07
28	0.31	1.05	1.12	-0.07
29	0.33	1.02	1.08	-0.06
30	0.35	0.99	1.05	-0.06
31	0.37	0.95	1.01	-0.06
32	0.40	0.92	0.97	-0.05
33	0.42	0.88	0.94	-0.05
34	0.44	0.85	0.90	-0.05
35	0.47	0.82	0.86	-0.04
36	0.50	0.78	0.82	-0.04
37	0.52	0.75	0.78	-0.04
38	0.55	0.71	0.74	-0.03
39	0.59	0.68	0.70	-0.03
40	0.62	0.64	0.66	-0.02
41	0.66	0.60	0.62	-0.02
42	0.70	0.57	0.58	-0.02
43	0.74	0.53	0.54	-0.01
44	0.78	0.50	0.51	-0.01
45	0.83	0.46	0.47	0.00
46	0.88	0.44	0.43	0.01
47	0.93	0.40	0.39	0.01
48	0.98	0.37	0.36	0.01
49	1.04	0.34	0.32	0.02
50	1.10	0.32	0.29	0.02

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
51	1.17	0.29	0.26	0.03
52	1.24	0.27	0.23	0.04
53	1.31	0.25	0.20	0.05
54	1.39	0.24	0.18	0.06
55	1.47	0.23	0.16	0.07
56	1.56	0.21	0.13	0.08
57	1.65	0.20	0.11	0.08
58	1.75	0.19	0.10	0.09
59	1.86	0.17	0.08	0.09
60	1.97	0.16	0.07	0.09
61	2.08	0.16	0.05	0.10
62	2.21	0.15	0.04	0.10
63	2.34	0.14	0.04	0.11
64	2.48	0.13	0.03	0.10
65	2.63	0.13	0.02	0.11
66	2.79	0.13	0.02	0.11
67	2.95	0.12	0.01	0.11
68	3.13	0.12	0.01	0.11
69	3.32	0.11	0.01	0.11
70	3.51	0.11	0.00	0.10
71	3.72	0.11	0.00	0.11
72	3.95	0.10	0.00	0.10
73	4.18	0.10	0.00	0.10
74	4.43	0.10	0.00	0.09
75	4.69	0.09	0.00	0.09
76	4.97	0.09	0.00	0.09
77	5.27	0.08	0.00	0.08
78	5.58	0.09	0.00	0.09
79	5.91	0.09	0.00	0.09
80	6.27	0.09	0.00	0.08
81	6.64	0.08	0.00	0.08

PT-INJ-3 Falling Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-3 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 66                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 14.8 ft
```

```
Initial Displacement
     Fixed Value                  = 2.005 ft

Hydraulic Conductivity
     Calculated Value             = 0.00399295 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.537545 min

Linear Regression Slope
     Fixed Value                  = -1.85018 /min

Linear Regression Intercept
     Fixed Value                  = 1.0003

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.850183 /min
             Intercept:    1.000304 dimensionless

Residual Mean           =  0.024265
Residual Standard Dev.  =  0.064549
Residual Sum of Squares =  0.313852
Absolute Residual Mean  =  0.059435
Minimum Residual        = -0.116938
Maximum Residual        =  0.111635
```

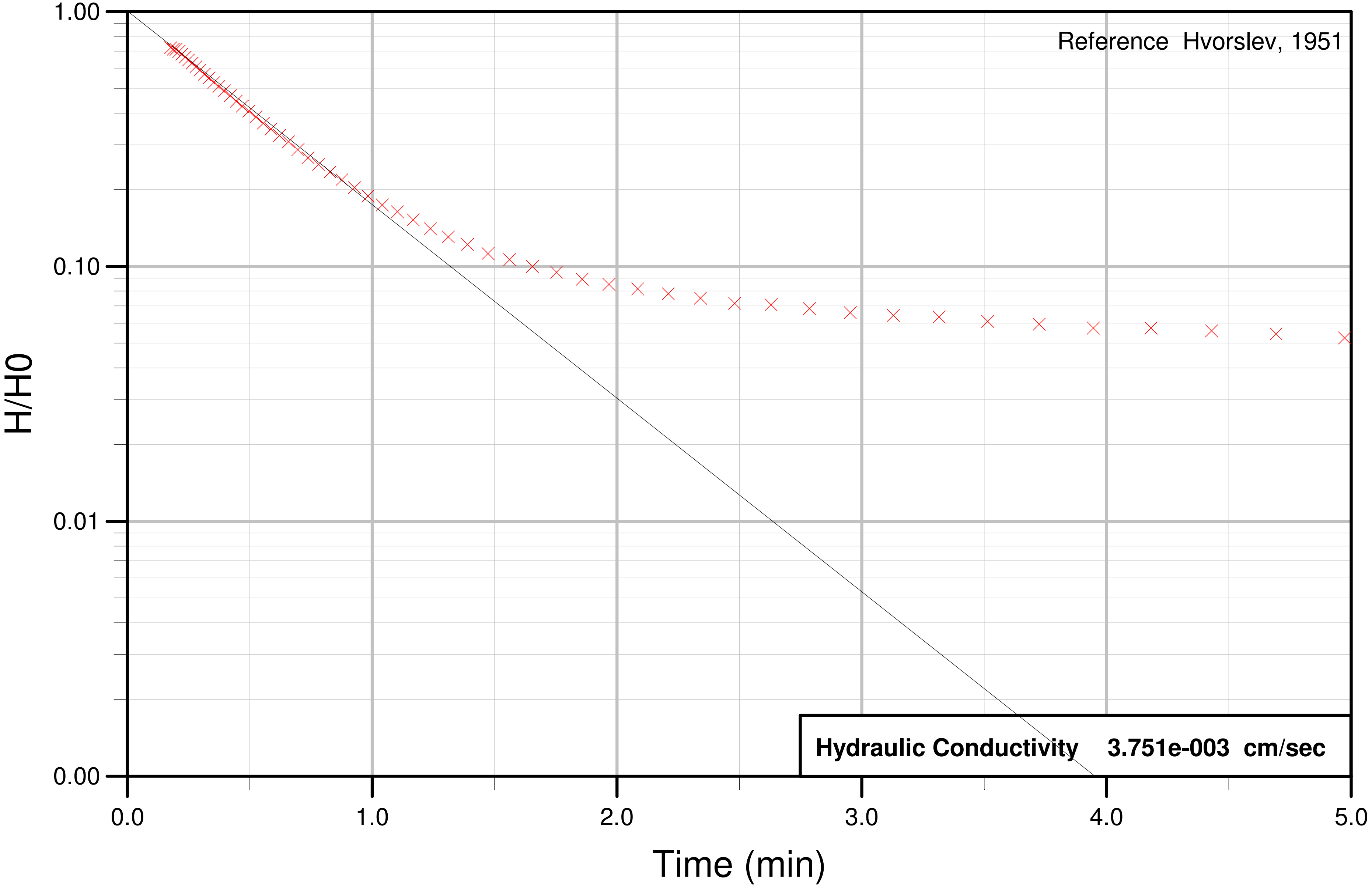
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.12	1.64	1.61	0.02
1	0.13	1.48	1.59	-0.11
2	0.13	1.58	1.57	0.01
3	0.14	1.50	1.55	-0.04
4	0.15	1.41	1.52	-0.12
5	0.16	1.51	1.50	0.01
6	0.17	1.46	1.47	-0.01
7	0.18	1.40	1.45	-0.05
8	0.19	1.37	1.42	-0.05
9	0.20	1.34	1.39	-0.05

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.21	1.31	1.36	-0.05
11	0.22	1.28	1.33	-0.05
12	0.24	1.25	1.30	-0.04
13	0.25	1.22	1.26	-0.05
14	0.26	1.18	1.23	-0.05
15	0.28	1.15	1.19	-0.05
16	0.30	1.11	1.16	-0.05
17	0.31	1.08	1.12	-0.04
18	0.33	1.04	1.08	-0.04
19	0.35	1.00	1.04	-0.04
20	0.37	0.97	1.00	-0.04
21	0.40	0.93	0.96	-0.04
22	0.42	0.89	0.92	-0.04
23	0.44	0.85	0.88	-0.03
24	0.47	0.81	0.84	-0.03
25	0.50	0.77	0.80	-0.03
26	0.52	0.74	0.76	-0.02
27	0.55	0.70	0.72	-0.02
28	0.59	0.66	0.68	-0.02
29	0.62	0.62	0.64	-0.01
30	0.66	0.59	0.59	-0.01
31	0.70	0.55	0.55	0.00
32	0.74	0.52	0.51	0.01
33	0.78	0.49	0.47	0.01
34	0.83	0.45	0.43	0.02
35	0.88	0.42	0.40	0.03
36	0.93	0.40	0.36	0.04
37	0.98	0.37	0.33	0.04
38	1.04	0.34	0.29	0.05
39	1.10	0.32	0.26	0.06
40	1.17	0.30	0.23	0.07
41	1.24	0.28	0.20	0.08
42	1.31	0.26	0.18	0.08
43	1.39	0.24	0.15	0.09
44	1.47	0.23	0.13	0.10
45	1.56	0.21	0.11	0.09
46	1.65	0.19	0.09	0.10
47	1.75	0.18	0.08	0.10
48	1.86	0.17	0.06	0.11
49	1.97	0.16	0.05	0.11
50	2.08	0.15	0.04	0.11

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	2.21	0.14	0.03	0.11
52	2.34	0.14	0.03	0.11
53	2.48	0.13	0.02	0.11
54	2.63	0.13	0.02	0.11
55	2.79	0.12	0.01	0.11
56	2.95	0.12	0.01	0.11
57	3.13	0.11	0.01	0.10
58	3.32	0.10	0.00	0.10
59	3.51	0.10	0.00	0.10
60	3.72	0.09	0.00	0.09
61	3.95	0.09	0.00	0.09
62	4.18	0.08	0.00	0.08
63	4.43	0.08	0.00	0.08
64	4.69	0.07	0.00	0.07
65	4.97	0.07	0.00	0.07

PT-INJ-3 Falling Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-3 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 59                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 14.8 ft
```

```
     Initial Displacement
          Fixed Value                  = 2.022 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00375139 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.572158 min

     Linear Regression Slope
          Fixed Value                  = -1.74977 /min

     Linear Regression Intercept
          Fixed Value                  = 1.00692

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -1.749771 /min
                  Intercept:    1.006917 dimensionless

     Residual Mean           =  0.035968
     Residual Standard Dev.  =  0.061610
     Residual Sum of Squares =  0.300284
     Absolute Residual Mean  =  0.056430
     Minimum Residual        = -0.036389
     Maximum Residual        =  0.122563
```

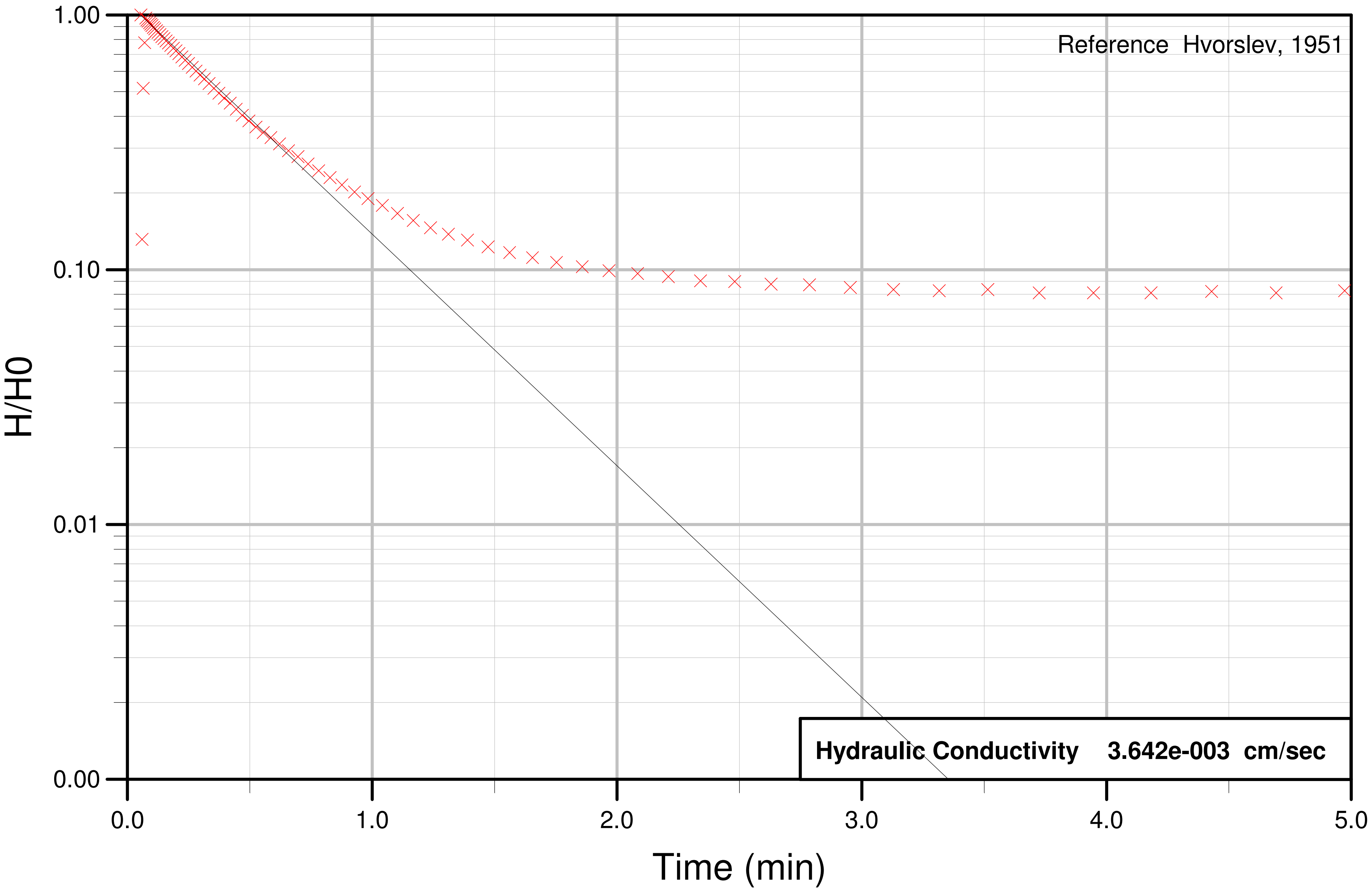
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.18	1.46	1.49	-0.03
1	0.19	1.44	1.47	-0.03
2	0.20	1.44	1.44	0.00
3	0.21	1.41	1.41	0.00
4	0.22	1.38	1.38	0.00
5	0.24	1.34	1.35	-0.01
6	0.25	1.31	1.32	-0.01
7	0.26	1.27	1.28	-0.01
8	0.28	1.23	1.25	-0.02
9	0.30	1.19	1.21	-0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.31	1.15	1.17	-0.02
11	0.33	1.11	1.14	-0.03
12	0.35	1.07	1.10	-0.03
13	0.37	1.03	1.06	-0.03
14	0.40	0.99	1.02	-0.03
15	0.42	0.95	0.98	-0.03
16	0.44	0.90	0.94	-0.04
17	0.47	0.86	0.90	-0.04
18	0.50	0.82	0.85	-0.03
19	0.52	0.78	0.81	-0.03
20	0.55	0.74	0.77	-0.03
21	0.59	0.70	0.73	-0.03
22	0.62	0.66	0.69	-0.03
23	0.66	0.62	0.64	-0.02
24	0.70	0.58	0.60	-0.02
25	0.74	0.54	0.56	-0.02
26	0.78	0.51	0.52	-0.01
27	0.83	0.48	0.48	0.00
28	0.88	0.44	0.44	0.00
29	0.93	0.41	0.40	0.01
30	0.98	0.38	0.36	0.02
31	1.04	0.35	0.33	0.02
32	1.10	0.33	0.30	0.04
33	1.17	0.31	0.26	0.04
34	1.24	0.28	0.23	0.05
35	1.31	0.26	0.21	0.06
36	1.39	0.25	0.18	0.07
37	1.47	0.23	0.15	0.07
38	1.56	0.22	0.13	0.08
39	1.65	0.20	0.11	0.09
40	1.75	0.19	0.09	0.10
41	1.86	0.18	0.08	0.10
42	1.97	0.17	0.07	0.11
43	2.08	0.17	0.05	0.11
44	2.21	0.16	0.04	0.12
45	2.34	0.15	0.03	0.12
46	2.48	0.15	0.03	0.12
47	2.63	0.14	0.02	0.12
48	2.79	0.14	0.02	0.12
49	2.95	0.13	0.01	0.12
50	3.13	0.13	0.01	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	3.32	0.13	0.01	0.12
52	3.51	0.12	0.00	0.12
53	3.72	0.12	0.00	0.12
54	3.95	0.12	0.00	0.11
55	4.18	0.12	0.00	0.11
56	4.43	0.11	0.00	0.11
57	4.69	0.11	0.00	0.11
58	4.97	0.11	0.00	0.11

PT-INJ-3 Rising Head Test 1



Reference Hvorslev, 1951

Hydraulic Conductivity 3.642e-003 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-3 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 78                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.8 ft
```

```
Initial Displacement
     Fixed Value                  = 1.937 ft

Hydraulic Conductivity
     Calculated Value             = 0.00364172 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.531086 min

Linear Regression Slope
     Fixed Value                  = -2.09388 /min

Linear Regression Intercept
     Fixed Value                  = 1.125

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -2.093885 /min
             Intercept:    1.124998 dimensionless

Residual Mean           =  0.007956
Residual Standard Dev.  =  0.238037
Residual Sum of Squares =  4.424540
Absolute Residual Mean  =  0.110462
Minimum Residual        = -1.666850
Maximum Residual        =  0.162624
```

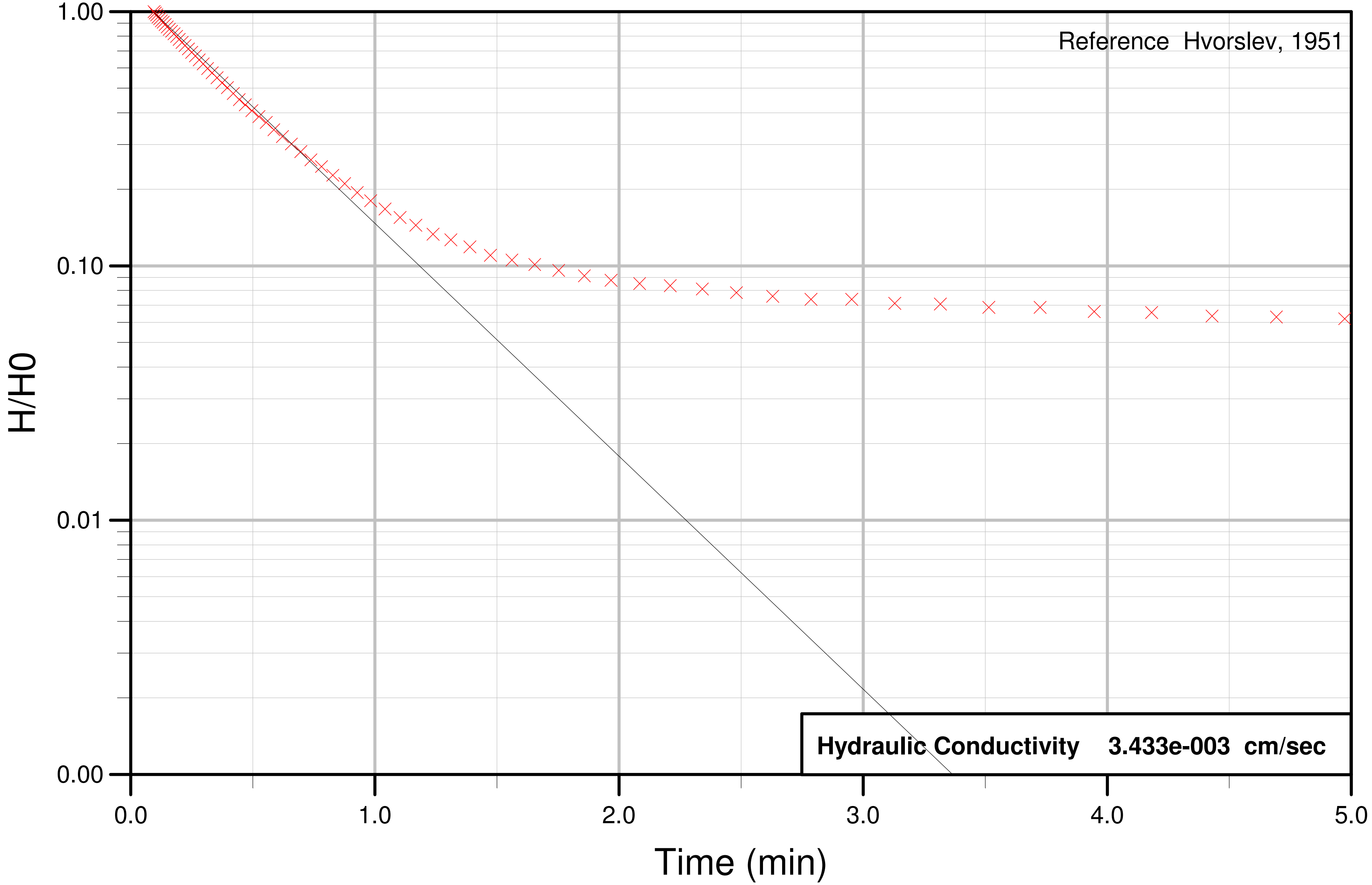
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.05	1.94	1.94	-0.01
1	0.06	0.26	1.92	-1.67
2	0.06	1.00	1.90	-0.90
3	0.07	1.51	1.88	-0.38
4	0.08	1.88	1.86	0.02
5	0.08	1.85	1.84	0.01
6	0.08	1.83	1.82	0.01
7	0.09	1.80	1.80	0.00
8	0.10	1.78	1.79	-0.01
9	0.10	1.76	1.77	-0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.11	1.73	1.75	-0.02
11	0.11	1.71	1.72	-0.02
12	0.12	1.68	1.70	-0.02
13	0.13	1.65	1.68	-0.02
14	0.13	1.62	1.65	-0.03
15	0.14	1.59	1.62	-0.03
16	0.15	1.56	1.60	-0.03
17	0.16	1.53	1.57	-0.03
18	0.17	1.50	1.54	-0.03
19	0.18	1.47	1.50	-0.03
20	0.19	1.43	1.47	-0.04
21	0.20	1.40	1.44	-0.04
22	0.21	1.36	1.40	-0.04
23	0.22	1.33	1.37	-0.04
24	0.24	1.29	1.33	-0.04
25	0.25	1.25	1.29	-0.04
26	0.26	1.21	1.25	-0.04
27	0.28	1.17	1.21	-0.05
28	0.30	1.12	1.17	-0.05
29	0.31	1.09	1.13	-0.04
30	0.33	1.04	1.08	-0.04
31	0.35	1.00	1.04	-0.04
32	0.37	0.95	1.00	-0.04
33	0.40	0.91	0.95	-0.04
34	0.42	0.87	0.90	-0.03
35	0.44	0.83	0.86	-0.03
36	0.47	0.78	0.82	-0.03
37	0.50	0.74	0.77	-0.03
38	0.52	0.70	0.73	-0.02
39	0.55	0.67	0.68	-0.01
40	0.59	0.64	0.64	0.00
41	0.62	0.60	0.59	0.01
42	0.66	0.57	0.55	0.02
43	0.70	0.54	0.51	0.03
44	0.74	0.50	0.46	0.04
45	0.78	0.47	0.42	0.05
46	0.83	0.45	0.39	0.06
47	0.88	0.42	0.35	0.07
48	0.93	0.39	0.31	0.08
49	0.98	0.37	0.28	0.09
50	1.04	0.35	0.25	0.10

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.10	0.32	0.22	0.11
52	1.17	0.30	0.19	0.11
53	1.24	0.28	0.16	0.12
54	1.31	0.27	0.14	0.13
55	1.39	0.25	0.12	0.13
56	1.47	0.24	0.10	0.14
57	1.56	0.23	0.08	0.14
58	1.65	0.22	0.07	0.15
59	1.75	0.21	0.06	0.15
60	1.86	0.20	0.04	0.15
61	1.97	0.19	0.04	0.16
62	2.08	0.19	0.03	0.16
63	2.21	0.18	0.02	0.16
64	2.34	0.18	0.02	0.16
65	2.48	0.17	0.01	0.16
66	2.63	0.17	0.01	0.16
67	2.79	0.17	0.01	0.16
68	2.95	0.17	0.00	0.16
69	3.13	0.16	0.00	0.16
70	3.32	0.16	0.00	0.16
71	3.51	0.16	0.00	0.16
72	3.72	0.16	0.00	0.16
73	3.95	0.16	0.00	0.16
74	4.18	0.16	0.00	0.16
75	4.43	0.16	0.00	0.16
76	4.69	0.16	0.00	0.16
77	4.97	0.16	0.00	0.16

PT-INJ-3 Rising Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE

Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-3 Rising Test 2
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 70                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.8 ft
```

```
     Initial Displacement
          Fixed Value                   = 1.937 ft

     Hydraulic Conductivity
          Calculated Value              = 0.00343342 cm/sec

     Time to 37% Displacement
          Calculated Value              = 0.563307 min

     Linear Regression Slope
          Fixed Value                   = -2.10787 /min

     Linear Regression Intercept
          Fixed Value                   = 1.21303

     Calculation Type
          Selected Value                = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                  Slope:       -2.107867 /min
                  Intercept:    1.213032 dimensionless

     Residual Mean            =  0.034709
     Residual Standard Dev.   =  0.074346
     Residual Sum of Squares =  0.471236
     Absolute Residual Mean   =  0.067534
     Minimum Residual         = -0.054870
     Maximum Residual         =  0.140104
```

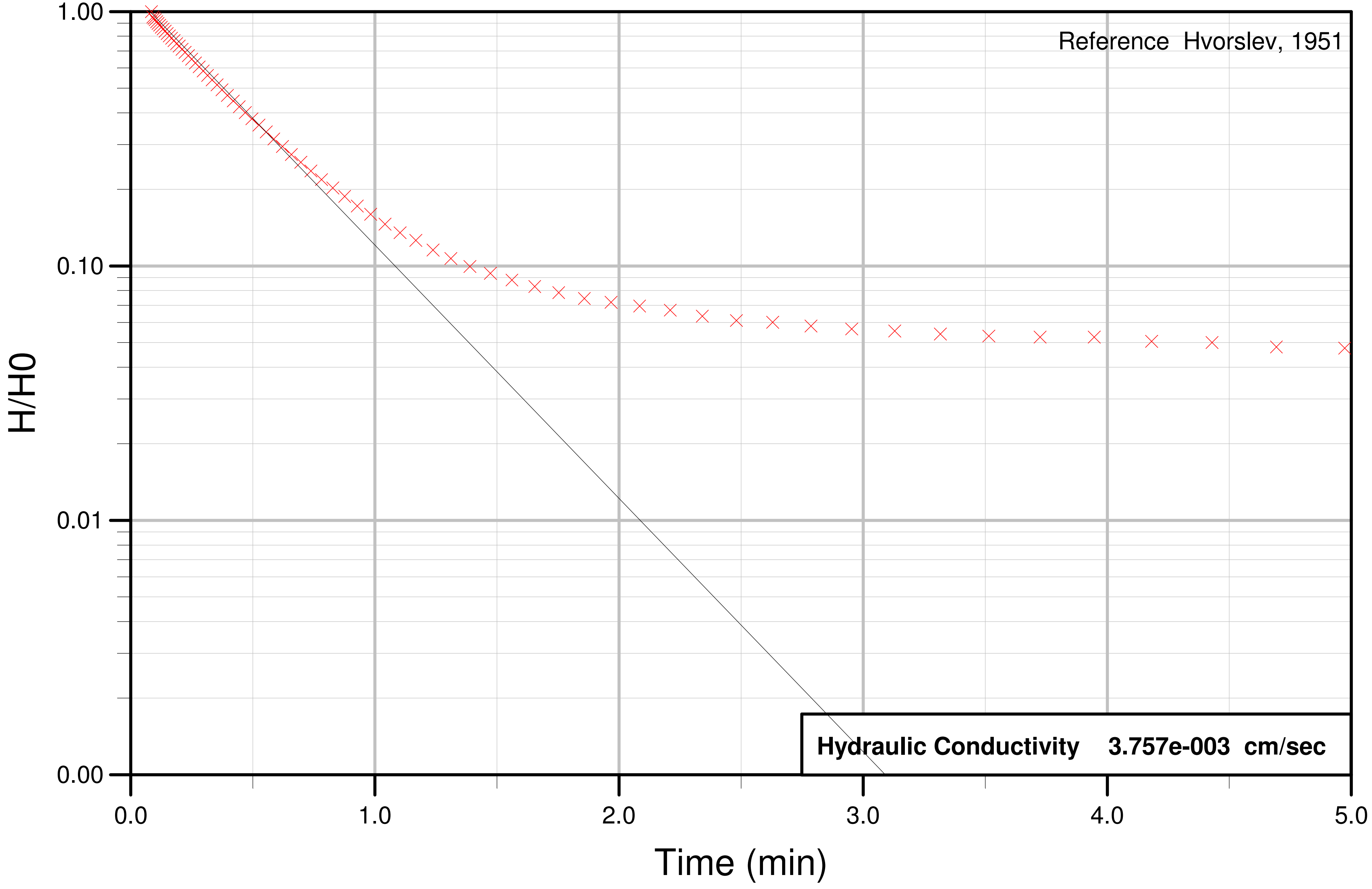
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.10	1.94	1.92	0.01
1	0.10	1.91	1.90	0.01
2	0.11	1.88	1.88	0.00
3	0.11	1.84	1.86	-0.01
4	0.12	1.82	1.83	-0.01
5	0.13	1.78	1.80	-0.02
6	0.13	1.76	1.78	-0.02
7	0.14	1.72	1.75	-0.03
8	0.15	1.68	1.72	-0.03
9	0.16	1.65	1.68	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.17	1.62	1.65	-0.03
11	0.18	1.58	1.62	-0.04
12	0.19	1.55	1.58	-0.03
13	0.20	1.51	1.55	-0.04
14	0.21	1.47	1.51	-0.04
15	0.22	1.42	1.47	-0.05
16	0.24	1.38	1.43	-0.05
17	0.25	1.34	1.39	-0.05
18	0.26	1.30	1.34	-0.05
19	0.28	1.25	1.30	-0.05
20	0.30	1.21	1.26	-0.05
21	0.31	1.16	1.21	-0.05
22	0.33	1.11	1.16	-0.05
23	0.35	1.06	1.12	-0.05
24	0.37	1.02	1.07	-0.05
25	0.40	0.97	1.02	-0.05
26	0.42	0.92	0.97	-0.05
27	0.44	0.87	0.92	-0.05
28	0.47	0.83	0.87	-0.04
29	0.50	0.79	0.83	-0.04
30	0.52	0.75	0.78	-0.03
31	0.55	0.71	0.73	-0.02
32	0.59	0.66	0.68	-0.02
33	0.62	0.62	0.63	-0.01
34	0.66	0.58	0.59	0.00
35	0.70	0.55	0.54	0.00
36	0.74	0.51	0.50	0.01
37	0.78	0.48	0.45	0.02
38	0.83	0.44	0.41	0.03
39	0.88	0.41	0.37	0.04
40	0.93	0.38	0.33	0.04
41	0.98	0.35	0.30	0.05
42	1.04	0.32	0.26	0.06
43	1.10	0.30	0.23	0.07
44	1.17	0.28	0.20	0.08
45	1.24	0.26	0.17	0.09
46	1.31	0.25	0.15	0.10
47	1.39	0.23	0.13	0.10
48	1.47	0.21	0.11	0.11
49	1.56	0.20	0.09	0.12
50	1.65	0.20	0.07	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.75	0.19	0.06	0.13
52	1.86	0.18	0.05	0.13
53	1.97	0.17	0.04	0.13
54	2.08	0.17	0.03	0.14
55	2.21	0.16	0.02	0.14
56	2.34	0.16	0.02	0.14
57	2.48	0.15	0.01	0.14
58	2.63	0.15	0.01	0.14
59	2.79	0.14	0.01	0.14
60	2.95	0.14	0.00	0.14
61	3.13	0.14	0.00	0.13
62	3.32	0.14	0.00	0.13
63	3.51	0.13	0.00	0.13
64	3.72	0.13	0.00	0.13
65	3.95	0.13	0.00	0.13
66	4.18	0.13	0.00	0.13
67	4.43	0.12	0.00	0.12
68	4.69	0.12	0.00	0.12
69	4.97	0.12	0.00	0.12

PT-INJ-3 Rising Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-3 Rising Test 3
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 72                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 14.8 ft
```

```
     Initial Displacement
          Fixed Value                    = 1.999 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00375677 cm/sec

     Time to 37% Displacement
          Calculated Value               = 0.514821 min

     Linear Regression Slope
          Fixed Value                    = -2.29317 /min

     Linear Regression Intercept
          Fixed Value                    = 1.20481

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                    Slope:       -2.293168 /min
                    Intercept:    1.204808 dimensionless

     Residual Mean           =  0.021394
     Residual Standard Dev.  =  0.073998
     Residual Sum of Squares =  0.427201
     Absolute Residual Mean  =  0.069392
     Minimum Residual        = -0.073139
     Maximum Residual        =  0.118827
```

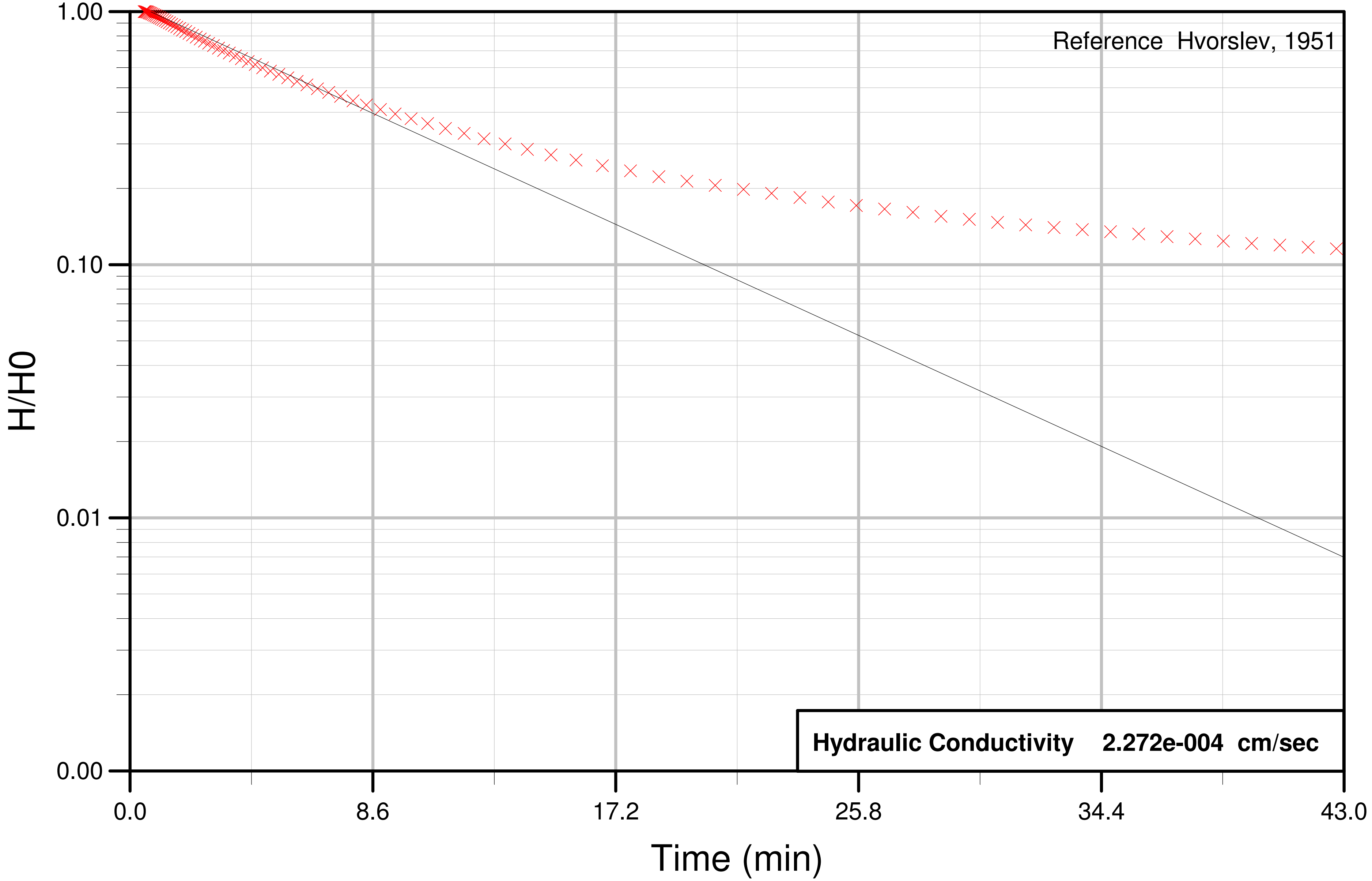
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.08	2.00	1.98	0.02
1	0.09	1.90	1.96	-0.06
2	0.10	1.88	1.94	-0.06
3	0.10	1.86	1.91	-0.06
4	0.11	1.82	1.89	-0.07
5	0.11	1.80	1.86	-0.07
6	0.12	1.77	1.84	-0.07
7	0.13	1.74	1.81	-0.07
8	0.13	1.71	1.78	-0.07
9	0.14	1.67	1.75	-0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.15	1.64	1.71	-0.07
11	0.16	1.61	1.68	-0.07
12	0.17	1.57	1.64	-0.07
13	0.18	1.54	1.61	-0.07
14	0.19	1.50	1.57	-0.07
15	0.20	1.46	1.53	-0.06
16	0.21	1.42	1.49	-0.07
17	0.22	1.38	1.45	-0.06
18	0.24	1.34	1.40	-0.06
19	0.25	1.30	1.36	-0.06
20	0.26	1.26	1.31	-0.06
21	0.28	1.21	1.27	-0.05
22	0.30	1.17	1.22	-0.05
23	0.31	1.12	1.17	-0.05
24	0.33	1.08	1.12	-0.04
25	0.35	1.03	1.07	-0.04
26	0.37	0.99	1.02	-0.04
27	0.40	0.94	0.97	-0.03
28	0.42	0.89	0.92	-0.03
29	0.44	0.85	0.87	-0.02
30	0.47	0.80	0.82	-0.02
31	0.50	0.76	0.77	-0.01
32	0.52	0.72	0.72	-0.01
33	0.55	0.67	0.67	0.00
34	0.59	0.63	0.63	0.00
35	0.62	0.59	0.58	0.01
36	0.66	0.55	0.53	0.02
37	0.70	0.51	0.49	0.02
38	0.74	0.47	0.44	0.03
39	0.78	0.44	0.40	0.04
40	0.83	0.41	0.36	0.04
41	0.88	0.38	0.32	0.05
42	0.93	0.34	0.29	0.06
43	0.98	0.32	0.25	0.07
44	1.04	0.29	0.22	0.07
45	1.10	0.27	0.19	0.08
46	1.17	0.25	0.17	0.09
47	1.24	0.23	0.14	0.09
48	1.31	0.21	0.12	0.09
49	1.39	0.20	0.10	0.10
50	1.47	0.19	0.08	0.10

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.56	0.18	0.07	0.11
52	1.65	0.17	0.05	0.11
53	1.75	0.16	0.04	0.11
54	1.86	0.15	0.03	0.12
55	1.97	0.14	0.03	0.12
56	2.08	0.14	0.02	0.12
57	2.21	0.13	0.02	0.12
58	2.34	0.13	0.01	0.12
59	2.48	0.12	0.01	0.11
60	2.63	0.12	0.01	0.11
61	2.79	0.12	0.00	0.11
62	2.95	0.11	0.00	0.11
63	3.13	0.11	0.00	0.11
64	3.32	0.11	0.00	0.11
65	3.51	0.11	0.00	0.11
66	3.72	0.11	0.00	0.10
67	3.95	0.11	0.00	0.10
68	4.18	0.10	0.00	0.10
69	4.43	0.10	0.00	0.10
70	4.69	0.10	0.00	0.10
71	4.97	0.10	0.00	0.09

PT-INJ-4 Falling Head Test 1



Hydraulic Conductivity 2.272e-004 cm/sec

```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE

Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-4 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 88                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 15.3 ft
```

```
     Initial Displacement
          Fixed Value                  = 3.978 ft

     Hydraulic Conductivity
          Calculated Value             = 0.000227152 cm/sec

     Time to 37% Displacement
          Calculated Value             = 9.20804 min

     Linear Regression Slope
          Fixed Value                  = -0.117586 /min

     Linear Regression Intercept
          Fixed Value                  = 1.09252

     Calculation Type
          Selected Value               = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                  Slope:       -0.117586 /min
                  Intercept:    1.092516 dimensionless

     Residual Mean           =  0.111145
     Residual Standard Dev.  =  0.252486
     Residual Sum of Squares =  6.697013
     Absolute Residual Mean  =  0.224787
     Minimum Residual        = -0.155087
     Maximum Residual        =  0.473135
```

DATA DETAIL

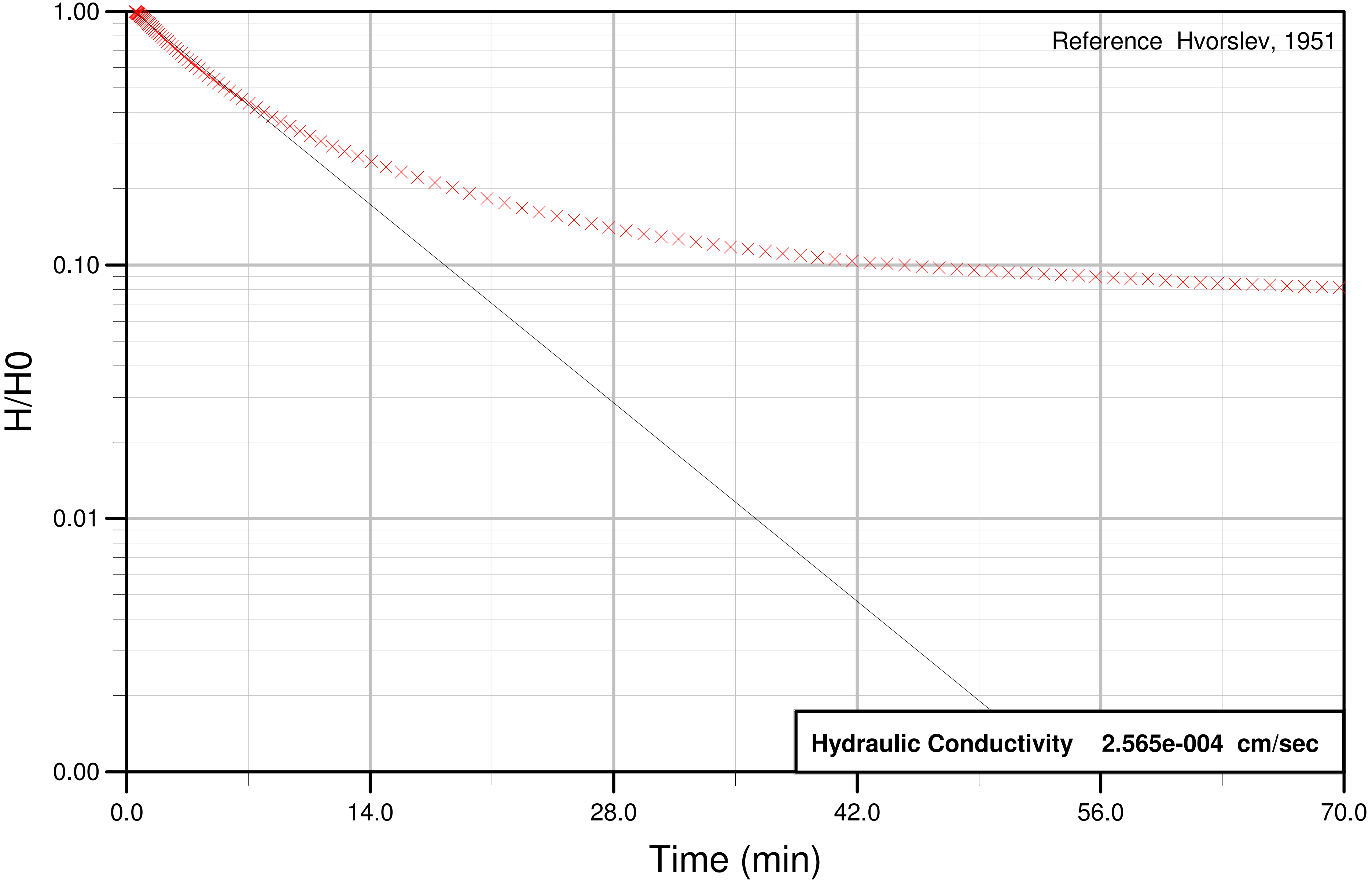
Index	**Time** (min)	**Obs. Displacement** (ft)	**Calc. Displacement** (ft)	**Residual**
0	0.50	3.98	4.10	-0.12
1	0.52	3.98	4.09	-0.11
2	0.55	3.97	4.07	-0.10
3	0.59	3.97	4.06	-0.09
4	0.62	3.96	4.04	-0.08
5	0.66	3.94	4.02	-0.08
6	0.70	3.93	4.00	-0.08
7	0.74	3.91	3.98	-0.08
8	0.78	3.89	3.96	-0.08
9	0.83	3.87	3.94	-0.08

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.88	3.84	3.92	-0.08
11	0.93	3.82	3.90	-0.08
12	0.98	3.79	3.87	-0.09
13	1.04	3.76	3.85	-0.09
14	1.10	3.73	3.82	-0.09
15	1.17	3.70	3.79	-0.09
16	1.24	3.66	3.76	-0.10
17	1.31	3.63	3.73	-0.10
18	1.39	3.59	3.69	-0.10
19	1.47	3.55	3.65	-0.11
20	1.56	3.50	3.62	-0.11
21	1.65	3.46	3.58	-0.12
22	1.75	3.41	3.54	-0.13
23	1.86	3.36	3.49	-0.13
24	1.97	3.31	3.45	-0.13
25	2.08	3.26	3.40	-0.14
26	2.21	3.21	3.35	-0.14
27	2.34	3.15	3.30	-0.15
28	2.48	3.10	3.25	-0.15
29	2.63	3.04	3.19	-0.15
30	2.79	2.98	3.13	-0.15
31	2.95	2.92	3.07	-0.16
32	3.13	2.85	3.01	-0.15
33	3.32	2.79	2.94	-0.15
34	3.51	2.72	2.87	-0.15
35	3.72	2.66	2.80	-0.15
36	3.95	2.59	2.73	-0.14
37	4.18	2.52	2.66	-0.13
38	4.43	2.46	2.58	-0.13
39	4.69	2.39	2.50	-0.12
40	4.97	2.32	2.42	-0.11
41	5.27	2.25	2.34	-0.09
42	5.58	2.18	2.25	-0.08
43	5.91	2.11	2.17	-0.06
44	6.27	2.04	2.08	-0.04
45	6.64	1.97	1.99	-0.02
46	7.03	1.91	1.90	0.00
47	7.45	1.84	1.81	0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
48	7.90	1.77	1.72	0.05
49	8.37	1.70	1.62	0.07
50	8.86	1.63	1.53	0.10
51	9.39	1.57	1.44	0.13
52	9.95	1.50	1.35	0.15
53	10.54	1.44	1.26	0.18
54	11.17	1.37	1.17	0.21
55	11.83	1.31	1.08	0.23
56	12.53	1.25	1.00	0.26
57	13.28	1.19	0.91	0.28
58	14.07	1.14	0.83	0.30
59	14.91	1.08	0.75	0.33
60	15.79	1.03	0.68	0.35
61	16.73	0.98	0.61	0.37
62	17.72	0.93	0.54	0.39
63	18.72	0.89	0.48	0.40
64	19.72	0.85	0.43	0.42
65	20.72	0.82	0.38	0.44
66	21.72	0.79	0.34	0.45
67	22.72	0.76	0.30	0.46
68	23.72	0.73	0.27	0.47
69	24.72	0.70	0.24	0.47
70	25.72	0.68	0.21	0.47
71	26.72	0.66	0.19	0.47
72	27.72	0.64	0.17	0.47
73	28.72	0.62	0.15	0.47
74	29.72	0.60	0.13	0.47
75	30.72	0.58	0.12	0.47
76	31.72	0.57	0.10	0.47
77	32.72	0.56	0.09	0.47
78	33.72	0.55	0.08	0.46
79	34.72	0.54	0.07	0.46
80	35.72	0.53	0.07	0.46
81	36.72	0.51	0.06	0.46
82	37.72	0.50	0.05	0.45
83	38.72	0.49	0.05	0.45
84	39.72	0.48	0.04	0.44
85	40.72	0.48	0.04	0.44

Index	Time	Obs. Displacement	Calc. Displacement	Residual
86	41.72	0.47	0.03	0.43
87	42.72	0.46	0.03	0.43

PT-INJ-4 Falling Head Test 2



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                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-4 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/11/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 116                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 15.3 ft
```

```
     Initial Displacement
          Fixed Value                    = 3.992 ft

     Hydraulic Conductivity
          Calculated Value               = 0.000256528 cm/sec

     Time to 37% Displacement
          Calculated Value               = 8.15361 min

     Linear Regression Slope
          Fixed Value                    = -0.128854 /min

     Linear Regression Intercept
          Fixed Value                    = 1.05799

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                 Slope:       -0.128854 /min
                 Intercept:    1.057993 dimensionless

     Residual Mean           =  0.192605
     Residual Standard Dev.  =  0.206708
     Residual Sum of Squares =  9.259682
     Absolute Residual Mean  =  0.228388
     Minimum Residual        = -0.107843
     Maximum Residual        =  0.448354


DATA DETAIL
```

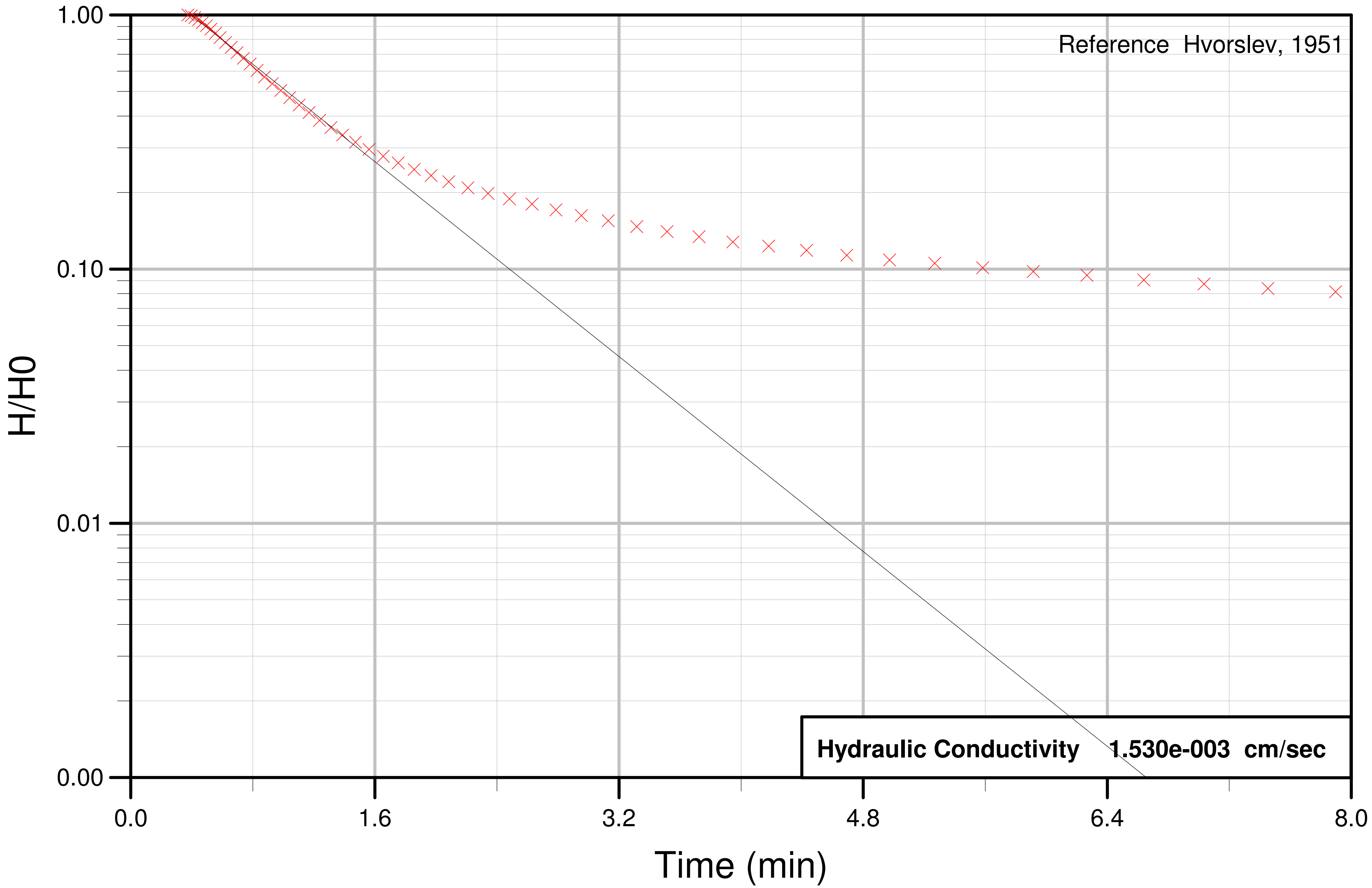
Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.47	3.99	3.98	0.02
1	0.50	3.99	3.96	0.03
2	0.52	3.98	3.95	0.03
3	0.55	3.97	3.93	0.03
4	0.59	3.95	3.92	0.03
5	0.62	3.93	3.90	0.03
6	0.66	3.91	3.88	0.03
7	0.70	3.89	3.86	0.03
8	0.74	3.87	3.84	0.03
9	0.78	3.84	3.82	0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.83	3.82	3.80	0.02
11	0.88	3.79	3.77	0.01
12	0.93	3.76	3.75	0.01
13	0.98	3.72	3.72	0.00
14	1.04	3.69	3.69	0.00
15	1.10	3.66	3.66	-0.01
16	1.17	3.62	3.63	-0.01
17	1.24	3.58	3.60	-0.02
18	1.31	3.54	3.57	-0.03
19	1.39	3.50	3.53	-0.03
20	1.47	3.45	3.49	-0.04
21	1.56	3.41	3.45	-0.05
22	1.65	3.36	3.41	-0.05
23	1.75	3.31	3.37	-0.06
24	1.86	3.26	3.32	-0.07
25	1.97	3.21	3.28	-0.07
26	2.08	3.15	3.23	-0.08
27	2.21	3.10	3.18	-0.08
28	2.34	3.04	3.12	-0.09
29	2.48	2.98	3.07	-0.09
30	2.63	2.92	3.01	-0.09
31	2.79	2.85	2.95	-0.10
32	2.95	2.79	2.89	-0.10
33	3.13	2.72	2.82	-0.10
34	3.32	2.65	2.75	-0.11
35	3.51	2.58	2.69	-0.11
36	3.72	2.51	2.61	-0.10
37	3.95	2.44	2.54	-0.10
38	4.18	2.37	2.46	-0.09
39	4.43	2.29	2.39	-0.10
40	4.69	2.23	2.31	-0.08
41	4.97	2.15	2.23	-0.07
42	5.27	2.08	2.14	-0.06
43	5.58	2.01	2.06	-0.05
44	5.91	1.94	1.97	-0.03
45	6.27	1.87	1.88	-0.01
46	6.64	1.80	1.80	0.01
47	7.03	1.73	1.71	0.03
48	7.45	1.67	1.62	0.05
49	7.90	1.60	1.53	0.07
50	8.37	1.53	1.44	0.10

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	8.86	1.47	1.35	0.12
52	9.39	1.41	1.26	0.15
53	9.95	1.35	1.17	0.17
54	10.54	1.29	1.09	0.20
55	11.17	1.23	1.00	0.23
56	11.83	1.18	0.92	0.26
57	12.53	1.12	0.84	0.28
58	13.28	1.07	0.76	0.31
59	14.07	1.02	0.69	0.33
60	14.91	0.97	0.62	0.35
61	15.79	0.93	0.55	0.38
62	16.73	0.89	0.49	0.40
63	17.72	0.85	0.43	0.41
64	18.72	0.81	0.38	0.43
65	19.72	0.77	0.33	0.43
66	20.72	0.73	0.29	0.44
67	21.72	0.70	0.26	0.44
68	22.72	0.67	0.23	0.45
69	23.72	0.65	0.20	0.45
70	24.72	0.62	0.17	0.45
71	25.72	0.60	0.15	0.45
72	26.72	0.58	0.13	0.45
73	27.72	0.56	0.12	0.44
74	28.72	0.54	0.10	0.44
75	29.72	0.53	0.09	0.44
76	30.72	0.52	0.08	0.44
77	31.72	0.51	0.07	0.43
78	32.72	0.49	0.06	0.43
79	33.72	0.48	0.05	0.43
80	34.72	0.47	0.05	0.42
81	35.72	0.46	0.04	0.42
82	36.72	0.45	0.04	0.41
83	37.72	0.44	0.03	0.41
84	38.72	0.44	0.03	0.41
85	39.72	0.43	0.03	0.40
86	40.72	0.42	0.02	0.40
87	41.72	0.41	0.02	0.39
88	42.72	0.41	0.02	0.39
89	43.72	0.40	0.02	0.39
90	44.72	0.40	0.01	0.39
91	45.72	0.39	0.01	0.38

Index	Time	Obs. Displacement	Calc. Displacement	Residual
92	46.72	0.39	0.01	0.38
93	47.72	0.39	0.01	0.38
94	48.72	0.38	0.01	0.37
95	49.72	0.38	0.01	0.37
96	50.72	0.37	0.01	0.37
97	51.72	0.37	0.01	0.37
98	52.72	0.37	0.00	0.36
99	53.72	0.37	0.00	0.36
100	54.72	0.36	0.00	0.36
101	55.72	0.36	0.00	0.36
102	56.72	0.36	0.00	0.35
103	57.72	0.35	0.00	0.35
104	58.72	0.35	0.00	0.35
105	59.72	0.35	0.00	0.35
106	60.72	0.34	0.00	0.34
107	61.72	0.34	0.00	0.34
108	62.72	0.34	0.00	0.34
109	63.72	0.34	0.00	0.33
110	64.72	0.34	0.00	0.33
111	65.72	0.33	0.00	0.33
112	66.72	0.33	0.00	0.33
113	67.72	0.33	0.00	0.33
114	68.72	0.33	0.00	0.33
115	69.72	0.33	0.00	0.32

PT-INJ-5 Falling Head Test 1



```
                          AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-5 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 54                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 16.3 ft
```

```
Initial Displacement
     Fixed Value                  = 3.435 ft

Hydraulic Conductivity
     Calculated Value             = 0.00153046 cm/sec

Time to 37% Displacement
     Calculated Value             = 1.3008 min

Linear Regression Slope
     Fixed Value                  = -1.10374 /min

Linear Regression Intercept
     Fixed Value                  = 1.55503

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.103739 /min
             Intercept:    1.555031 dimensionless

Residual Mean           =  0.144063
Residual Standard Dev.  =  0.174825
Residual Sum of Squares =  2.771172
Absolute Residual Mean  =  0.176310
Minimum Residual        = -0.100003
Maximum Residual        =  0.373434
```

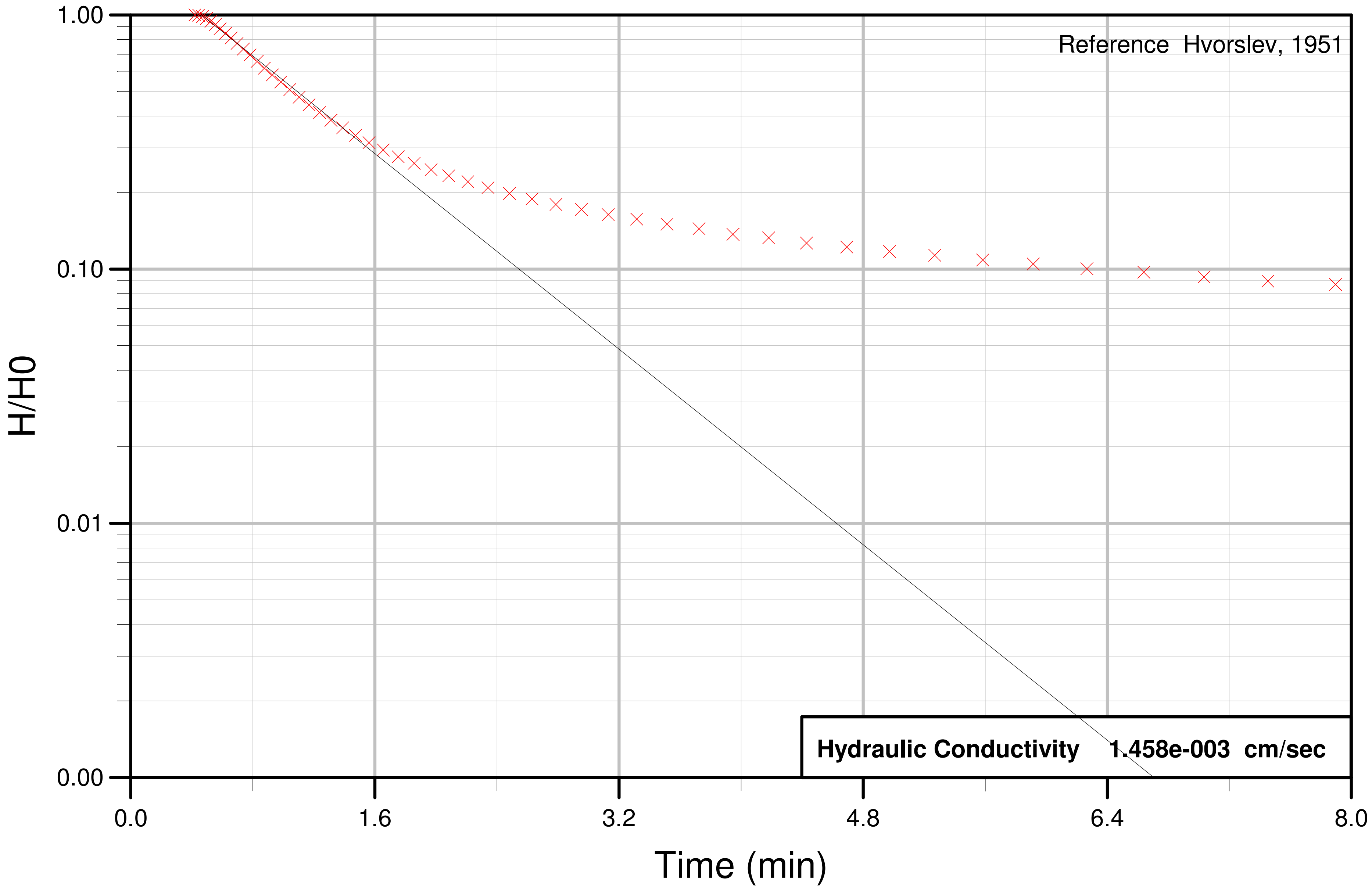
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.37	3.44	3.54	-0.10
1	0.40	3.41	3.45	-0.04
2	0.42	3.35	3.36	-0.01
3	0.44	3.29	3.27	0.02
4	0.47	3.21	3.18	0.03
5	0.50	3.12	3.09	0.03
6	0.52	3.02	2.99	0.02
7	0.55	2.91	2.90	0.01
8	0.59	2.80	2.80	0.00
9	0.62	2.68	2.69	-0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.66	2.56	2.58	-0.03
11	0.70	2.44	2.48	-0.04
12	0.74	2.32	2.37	-0.05
13	0.78	2.20	2.26	-0.06
14	0.83	2.08	2.14	-0.07
15	0.88	1.96	2.03	-0.07
16	0.93	1.84	1.92	-0.08
17	0.98	1.73	1.81	-0.07
18	1.04	1.62	1.69	-0.07
19	1.10	1.52	1.58	-0.06
20	1.17	1.42	1.47	-0.05
21	1.24	1.32	1.36	-0.04
22	1.31	1.24	1.26	-0.02
23	1.39	1.16	1.15	0.00
24	1.47	1.08	1.05	0.03
25	1.56	1.02	0.95	0.06
26	1.65	0.95	0.86	0.09
27	1.75	0.90	0.77	0.13
28	1.86	0.85	0.69	0.16
29	1.97	0.80	0.61	0.19
30	2.08	0.76	0.54	0.22
31	2.21	0.72	0.47	0.25
32	2.34	0.68	0.40	0.28
33	2.48	0.65	0.35	0.30
34	2.63	0.62	0.29	0.33
35	2.79	0.59	0.25	0.34
36	2.95	0.56	0.21	0.35
37	3.13	0.53	0.17	0.36
38	3.32	0.51	0.14	0.37
39	3.51	0.48	0.11	0.37
40	3.72	0.46	0.09	0.37
41	3.95	0.44	0.07	0.37
42	4.18	0.42	0.05	0.37
43	4.43	0.41	0.04	0.37
44	4.69	0.39	0.03	0.36
45	4.97	0.37	0.02	0.35
46	5.27	0.36	0.02	0.35
47	5.58	0.35	0.01	0.34
48	5.91	0.34	0.01	0.33
49	6.27	0.33	0.01	0.32
50	6.64	0.31	0.00	0.31

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	7.03	0.30	0.00	0.30
52	7.45	0.29	0.00	0.29
53	7.90	0.28	0.00	0.28

PT-INJ-5 Falling Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-5 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 52                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 16.3 ft
```

```
     Initial Displacement
          Fixed Value                    = 3.047 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00145786 cm/sec

     Time to 37% Displacement
          Calculated Value               = 1.36558 min

     Linear Regression Slope
          Fixed Value                    = -1.10701 /min

     Linear Regression Intercept
          Fixed Value                    = 1.67776

     Calculation Type
          Selected Value                 = Default


ANALYSIS STATISTICS

     Regression Line
                 Slope:       -1.107012 /min
                 Intercept:    1.677764 dimensionless

     Residual Mean           =  0.138185
     Residual Standard Dev.  =  0.168045
     Residual Sum of Squares =  2.461365
     Absolute Residual Mean  =  0.170766
     Minimum Residual        = -0.165006
     Maximum Residual        =  0.356210
```

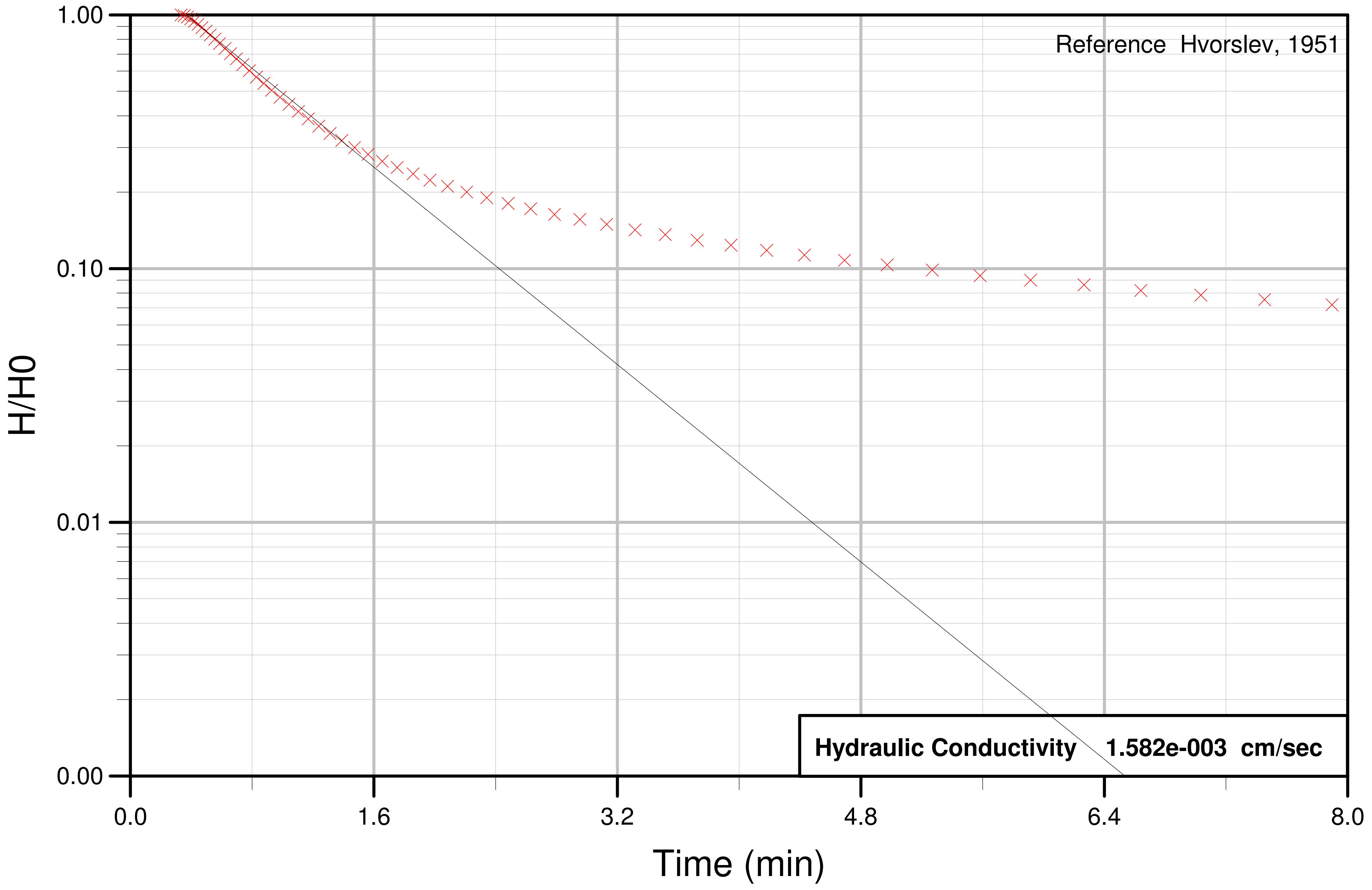
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.42	3.05	3.21	-0.17
1	0.44	3.04	3.13	-0.09
2	0.47	3.00	3.04	-0.04
3	0.50	2.95	2.95	0.00
4	0.52	2.87	2.86	0.01
5	0.55	2.79	2.77	0.02
6	0.59	2.69	2.67	0.02
7	0.62	2.58	2.57	0.01
8	0.66	2.47	2.47	0.00
9	0.70	2.36	2.37	-0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.74	2.24	2.26	-0.02
11	0.78	2.12	2.15	-0.03
12	0.83	2.00	2.04	-0.05
13	0.88	1.88	1.94	-0.05
14	0.93	1.77	1.83	-0.06
15	0.98	1.66	1.72	-0.06
16	1.04	1.55	1.61	-0.07
17	1.10	1.45	1.51	-0.06
18	1.17	1.35	1.40	-0.05
19	1.24	1.26	1.30	-0.04
20	1.31	1.17	1.20	-0.02
21	1.39	1.10	1.10	0.00
22	1.47	1.02	1.00	0.02
23	1.56	0.96	0.91	0.05
24	1.65	0.90	0.82	0.08
25	1.75	0.84	0.73	0.11
26	1.86	0.79	0.65	0.14
27	1.97	0.75	0.58	0.17
28	2.08	0.71	0.51	0.20
29	2.21	0.67	0.44	0.23
30	2.34	0.64	0.38	0.25
31	2.48	0.60	0.33	0.28
32	2.63	0.58	0.28	0.30
33	2.79	0.55	0.23	0.31
34	2.95	0.52	0.19	0.33
35	3.13	0.50	0.16	0.34
36	3.32	0.48	0.13	0.35
37	3.51	0.46	0.10	0.35
38	3.72	0.44	0.08	0.36
39	3.95	0.42	0.06	0.35
40	4.18	0.40	0.05	0.35
41	4.43	0.39	0.04	0.35
42	4.69	0.37	0.03	0.34
43	4.97	0.36	0.02	0.34
44	5.27	0.35	0.01	0.33
45	5.58	0.33	0.01	0.32
46	5.91	0.32	0.01	0.31
47	6.27	0.31	0.00	0.30
48	6.64	0.30	0.00	0.29
49	7.03	0.28	0.00	0.28
50	7.45	0.27	0.00	0.27

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
51	7.90	0.27	0.00	0.26

PT-INJ-5 Falling Head Test 3



```
                    AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-5 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/12/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 56                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Inner Diameter
            Fixed Value                  = 0.334 ft

       Screen Length
            Fixed Value                  = 16.3 ft
```

```
Initial Displacement
     Fixed Value                 = 3.21 ft

Hydraulic Conductivity
     Calculated Value            = 0.00158245 cm/sec

Time to 37% Displacement
     Calculated Value            = 1.25807 min

Linear Regression Slope
     Fixed Value                 = -1.11957 /min

Linear Regression Intercept
     Fixed Value                 = 1.51322

Calculation Type
     Selected Value              = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.119571 /min
             Intercept:    1.513222 dimensionless

Residual Mean           =  0.109577
Residual Standard Dev.  =  0.170469
Residual Sum of Squares =  2.299743
Absolute Residual Mean  =  0.163795
Minimum Residual        = -0.134640
Maximum Residual        =  0.342033
```

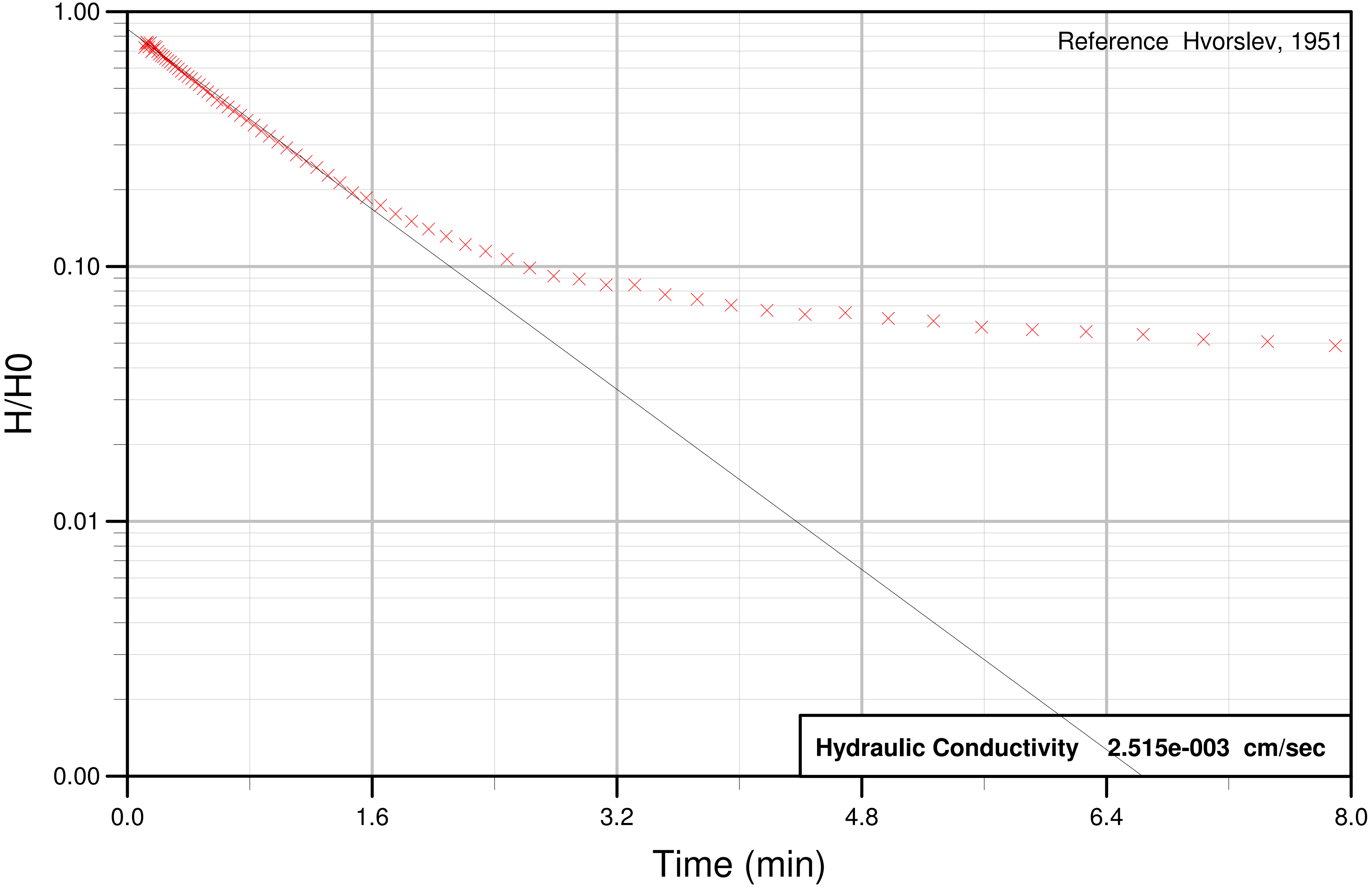
DATA DETAIL

Index	**Time** (min)	**Obs. Displacement** (ft)	**Calc. Displacement** (ft)	**Residual**
0	0.33	3.21	3.34	-0.13
1	0.35	3.19	3.27	-0.09
2	0.37	3.15	3.20	-0.05
3	0.40	3.09	3.12	-0.02
4	0.42	3.03	3.04	-0.01
5	0.44	2.95	2.95	-0.01
6	0.47	2.86	2.87	-0.01
7	0.50	2.77	2.79	-0.02
8	0.52	2.68	2.70	-0.02
9	0.55	2.58	2.61	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.59	2.48	2.52	-0.04
11	0.62	2.37	2.42	-0.06
12	0.66	2.26	2.33	-0.07
13	0.70	2.15	2.23	-0.08
14	0.74	2.04	2.13	-0.09
15	0.78	1.93	2.03	-0.09
16	0.83	1.82	1.92	-0.10
17	0.88	1.72	1.82	-0.10
18	0.93	1.62	1.72	-0.10
19	0.98	1.52	1.62	-0.10
20	1.04	1.43	1.51	-0.09
21	1.10	1.34	1.41	-0.08
22	1.17	1.25	1.31	-0.07
23	1.24	1.17	1.21	-0.05
24	1.31	1.10	1.12	-0.02
25	1.39	1.03	1.03	0.00
26	1.47	0.96	0.93	0.03
27	1.56	0.91	0.85	0.06
28	1.65	0.85	0.76	0.09
29	1.75	0.80	0.68	0.12
30	1.86	0.76	0.61	0.15
31	1.97	0.72	0.54	0.18
32	2.08	0.68	0.47	0.21
33	2.21	0.64	0.41	0.23
34	2.34	0.61	0.35	0.26
35	2.48	0.58	0.30	0.28
36	2.63	0.55	0.26	0.30
37	2.79	0.53	0.21	0.31
38	2.95	0.50	0.18	0.32
39	3.13	0.48	0.15	0.33
40	3.32	0.46	0.12	0.34
41	3.51	0.44	0.09	0.34
42	3.72	0.42	0.08	0.34
43	3.95	0.40	0.06	0.34
44	4.18	0.38	0.05	0.33
45	4.43	0.36	0.03	0.33
46	4.69	0.35	0.03	0.32
47	4.97	0.33	0.02	0.31
48	5.27	0.32	0.01	0.30
49	5.58	0.30	0.01	0.29
50	5.91	0.29	0.01	0.28

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	6.27	0.28	0.00	0.27
52	6.64	0.26	0.00	0.26
53	7.03	0.25	0.00	0.25
54	7.45	0.24	0.00	0.24
55	7.90	0.23	0.00	0.23

PT-INJ-6 Falling Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-6 Falling Test 1
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 83                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 15.6 ft
```

```
Initial Displacement
     Fixed Value                  = 2.127 ft

Hydraulic Conductivity
     Calculated Value             = 0.00251525 cm/sec

Time to 37% Displacement
     Calculated Value             = 0.819093 min

Linear Regression Slope
     Fixed Value                  = -1.01591 /min

Linear Regression Intercept
     Fixed Value                  = 0.850331

Calculation Type
     Selected Value               = Default
```

ANALYSIS STATISTICS

```
Regression Line
             Slope:       -1.015907 /min
             Intercept:    0.850331 dimensionless

Residual Mean           = -0.134202
Residual Standard Dev.  =  0.499733
Residual Sum of Squares =  22.222673
Absolute Residual Mean  =  0.204465
Minimum Residual        = -1.684501
Maximum Residual        =  0.124623
```

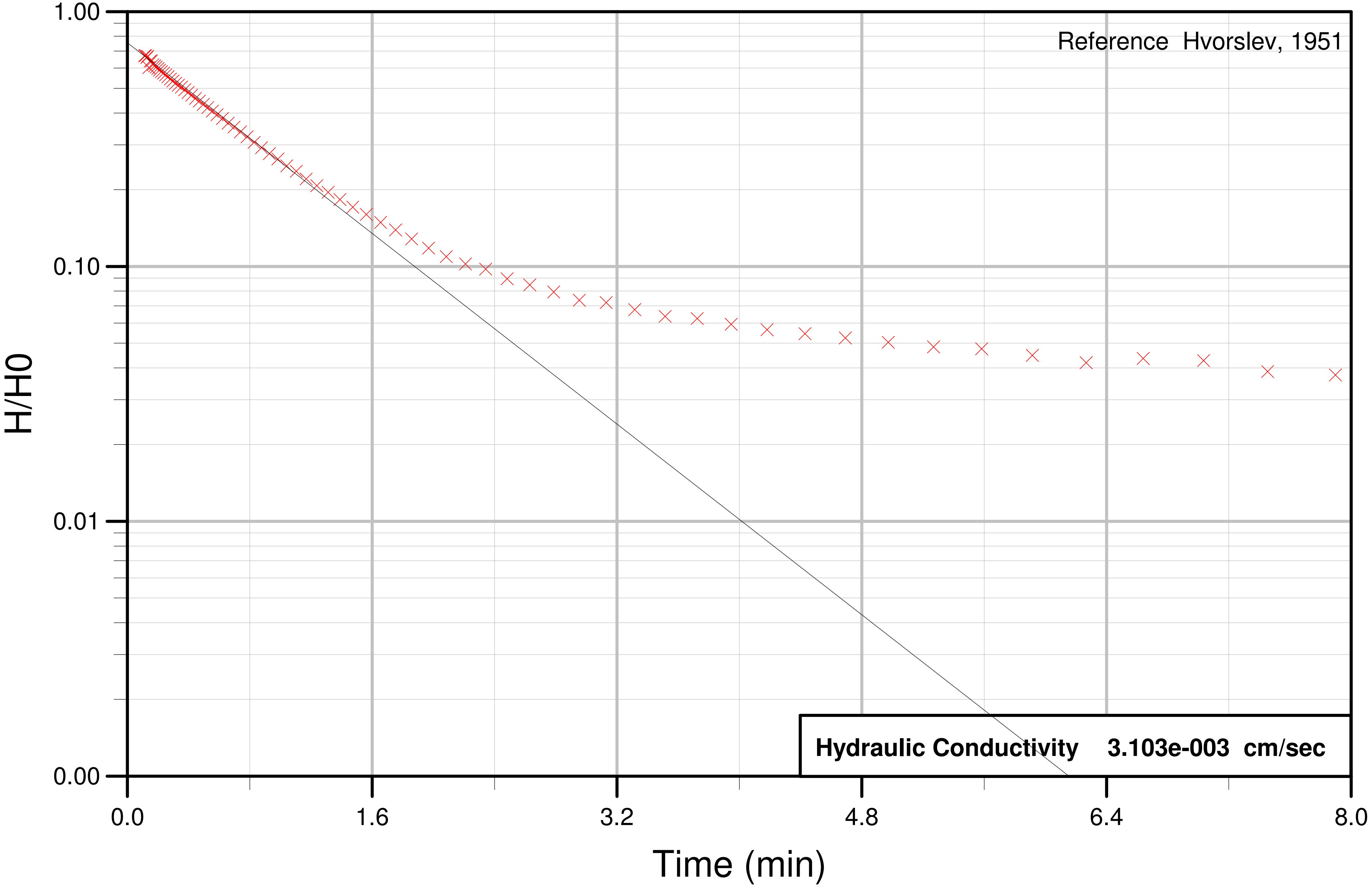
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.07	0.00	1.68	-1.68
1	0.08	0.00	1.68	-1.68
2	0.08	0.00	1.67	-1.67
3	0.08	0.00	1.66	-1.66
4	0.09	0.00	1.65	-1.65
5	0.10	0.00	1.64	-1.64
6	0.10	0.00	1.63	-1.63
7	0.11	0.00	1.62	-1.62
8	0.11	1.54	1.61	-0.08
9	0.12	1.59	1.60	-0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.13	1.62	1.59	0.02
11	0.13	1.60	1.58	0.02
12	0.14	1.54	1.57	-0.02
13	0.15	1.60	1.55	0.05
14	0.16	1.48	1.54	-0.06
15	0.17	1.50	1.53	-0.02
16	0.18	1.55	1.51	0.04
17	0.19	1.54	1.49	0.04
18	0.20	1.48	1.48	0.00
19	0.21	1.45	1.46	-0.01
20	0.22	1.43	1.44	-0.01
21	0.24	1.41	1.42	-0.01
22	0.25	1.39	1.40	-0.01
23	0.26	1.37	1.38	-0.01
24	0.28	1.35	1.36	-0.01
25	0.30	1.32	1.34	-0.02
26	0.31	1.30	1.31	-0.02
27	0.33	1.27	1.29	-0.02
28	0.35	1.24	1.26	-0.02
29	0.37	1.21	1.24	-0.02
30	0.40	1.18	1.21	-0.03
31	0.42	1.16	1.18	-0.02
32	0.44	1.13	1.15	-0.03
33	0.47	1.10	1.12	-0.02
34	0.50	1.06	1.09	-0.03
35	0.52	1.03	1.06	-0.03
36	0.55	1.00	1.03	-0.03
37	0.59	0.96	1.00	-0.04
38	0.62	0.93	0.96	-0.03
39	0.66	0.90	0.93	-0.03
40	0.70	0.87	0.89	-0.02
41	0.74	0.83	0.85	-0.02
42	0.78	0.80	0.82	-0.02
43	0.83	0.76	0.78	-0.02
44	0.88	0.72	0.74	-0.02
45	0.93	0.69	0.70	-0.01
46	0.98	0.66	0.67	-0.01
47	1.04	0.62	0.63	-0.01
48	1.10	0.58	0.59	-0.01
49	1.17	0.55	0.55	0.00
50	1.24	0.52	0.51	0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.31	0.49	0.48	0.01
52	1.39	0.45	0.44	0.01
53	1.47	0.41	0.41	0.01
54	1.56	0.40	0.37	0.02
55	1.65	0.37	0.34	0.03
56	1.75	0.34	0.30	0.04
57	1.86	0.32	0.27	0.05
58	1.97	0.30	0.24	0.05
59	2.08	0.28	0.22	0.06
60	2.21	0.26	0.19	0.07
61	2.34	0.24	0.17	0.08
62	2.48	0.23	0.15	0.08
63	2.63	0.21	0.13	0.08
64	2.79	0.20	0.11	0.09
65	2.95	0.19	0.09	0.10
66	3.13	0.18	0.08	0.10
67	3.32	0.18	0.06	0.12
68	3.51	0.17	0.05	0.11
69	3.72	0.16	0.04	0.12
70	3.95	0.15	0.03	0.12
71	4.18	0.14	0.03	0.12
72	4.43	0.14	0.02	0.12
73	4.69	0.14	0.02	0.12
74	4.97	0.13	0.01	0.12
75	5.27	0.13	0.01	0.12
76	5.58	0.12	0.01	0.12
77	5.91	0.12	0.00	0.12
78	6.27	0.12	0.00	0.11
79	6.64	0.12	0.00	0.11
80	7.03	0.11	0.00	0.11
81	7.45	0.11	0.00	0.11
82	7.90	0.10	0.00	0.10

PT-INJ-6 Falling Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-6 Falling Test 2
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 75                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 15.6 ft
```

```
     Initial Displacement
          Fixed Value                    = 2.481 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00310317 cm/sec

     Time to 37% Displacement
          Calculated Value               = 0.663908 min

     Linear Regression Slope
          Fixed Value                    = -1.0768 /min

     Linear Regression Intercept
          Fixed Value                    = 0.756269

     Calculation Type
          Selected Value                 = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                    Slope:       -1.076797 /min
                    Intercept:    0.756269 dimensionless

     Residual Mean           =  0.028115
     Residual Standard Dev.  =  0.060483
     Residual Sum of Squares =  0.333649
     Absolute Residual Mean  =  0.053017
     Minimum Residual        = -0.117868
     Maximum Residual        =  0.120994
```

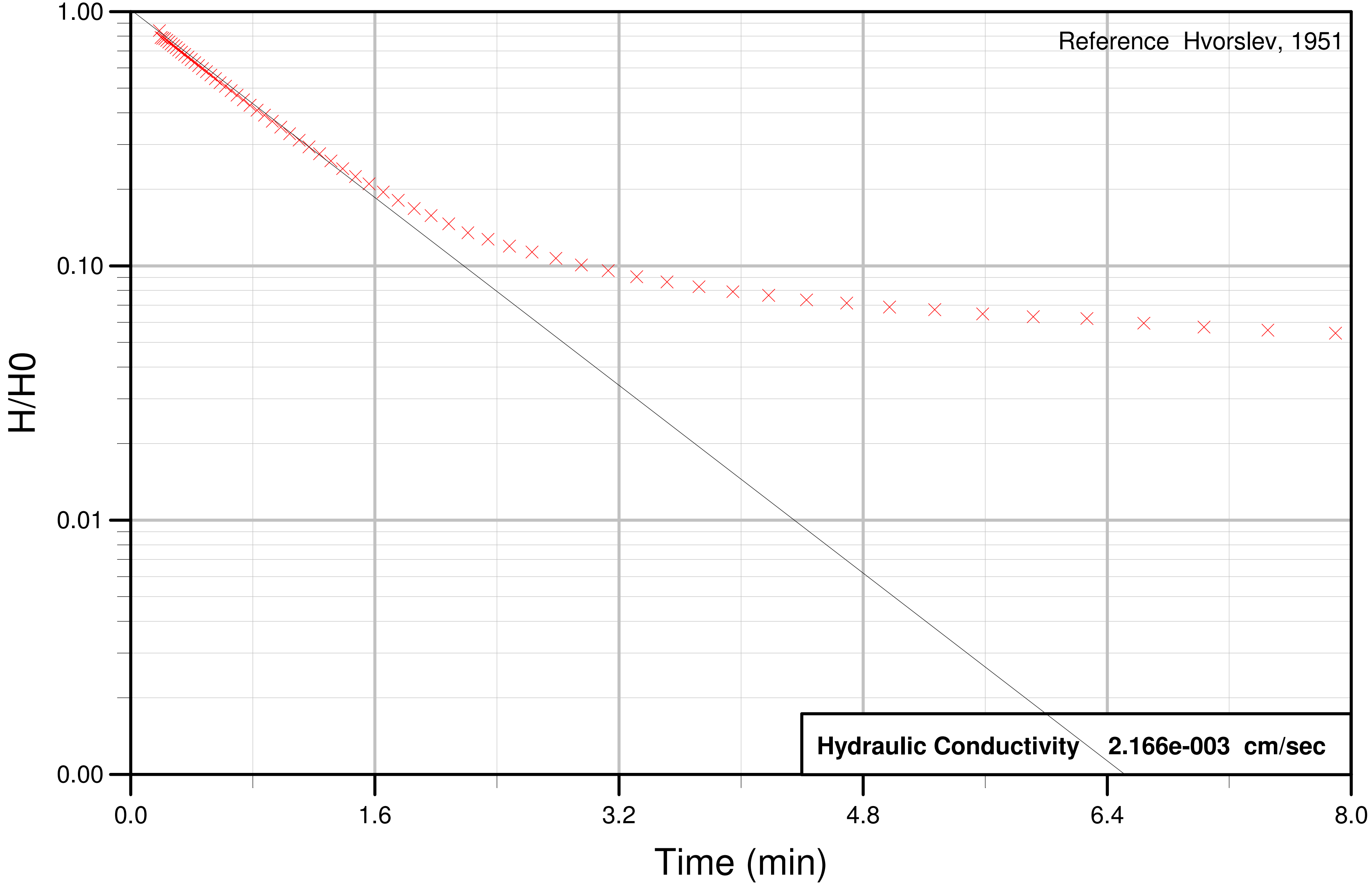
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.11	1.66	1.66	0.00
1	0.12	1.67	1.65	0.02
2	0.13	1.64	1.64	0.00
3	0.13	1.66	1.63	0.03
4	0.14	1.50	1.61	-0.12
5	0.15	1.59	1.60	-0.01
6	0.16	1.59	1.58	0.01
7	0.17	1.54	1.57	-0.03
8	0.18	1.52	1.55	-0.03
9	0.19	1.50	1.53	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.20	1.48	1.52	-0.03
11	0.21	1.46	1.50	-0.04
12	0.22	1.44	1.48	-0.03
13	0.24	1.42	1.46	-0.03
14	0.25	1.40	1.43	-0.03
15	0.26	1.38	1.41	-0.03
16	0.28	1.35	1.39	-0.04
17	0.30	1.33	1.36	-0.04
18	0.31	1.30	1.34	-0.04
19	0.33	1.28	1.31	-0.03
20	0.35	1.25	1.28	-0.03
21	0.37	1.22	1.25	-0.03
22	0.40	1.19	1.22	-0.03
23	0.42	1.17	1.19	-0.03
24	0.44	1.13	1.16	-0.03
25	0.47	1.11	1.13	-0.03
26	0.50	1.07	1.10	-0.03
27	0.52	1.04	1.07	-0.02
28	0.55	1.01	1.03	-0.02
29	0.59	0.98	1.00	-0.02
30	0.62	0.95	0.96	-0.02
31	0.66	0.91	0.92	-0.02
32	0.70	0.87	0.89	-0.01
33	0.74	0.84	0.85	-0.01
34	0.78	0.80	0.81	-0.01
35	0.83	0.76	0.77	-0.01
36	0.88	0.73	0.73	-0.01
37	0.93	0.69	0.69	0.00
38	0.98	0.66	0.65	0.00
39	1.04	0.62	0.61	0.00
40	1.10	0.59	0.57	0.01
41	1.17	0.55	0.53	0.01
42	1.24	0.52	0.49	0.02
43	1.31	0.49	0.46	0.03
44	1.39	0.45	0.42	0.03
45	1.47	0.42	0.38	0.04
46	1.56	0.40	0.35	0.05
47	1.65	0.37	0.32	0.05
48	1.75	0.35	0.28	0.06
49	1.86	0.32	0.25	0.06
50	1.97	0.29	0.23	0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	2.08	0.27	0.20	0.07
52	2.21	0.25	0.17	0.08
53	2.34	0.24	0.15	0.09
54	2.48	0.22	0.13	0.09
55	2.63	0.21	0.11	0.10
56	2.79	0.20	0.09	0.10
57	2.95	0.18	0.08	0.10
58	3.13	0.18	0.06	0.11
59	3.32	0.17	0.05	0.12
60	3.51	0.16	0.04	0.12
61	3.72	0.16	0.03	0.12
62	3.95	0.15	0.03	0.12
63	4.18	0.14	0.02	0.12
64	4.43	0.14	0.02	0.12
65	4.69	0.13	0.01	0.12
66	4.97	0.13	0.01	0.12
67	5.27	0.12	0.01	0.11
68	5.58	0.12	0.00	0.11
69	5.91	0.11	0.00	0.11
70	6.27	0.10	0.00	0.10
71	6.64	0.11	0.00	0.11
72	7.03	0.11	0.00	0.11
73	7.45	0.10	0.00	0.10
74	7.90	0.09	0.00	0.09

PT-INJ-6 Falling Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-6 Falling Test 3
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 66                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Inner Diameter
            Fixed Value                 = 0.334 ft

       Screen Length
            Fixed Value                 = 15.6 ft
```

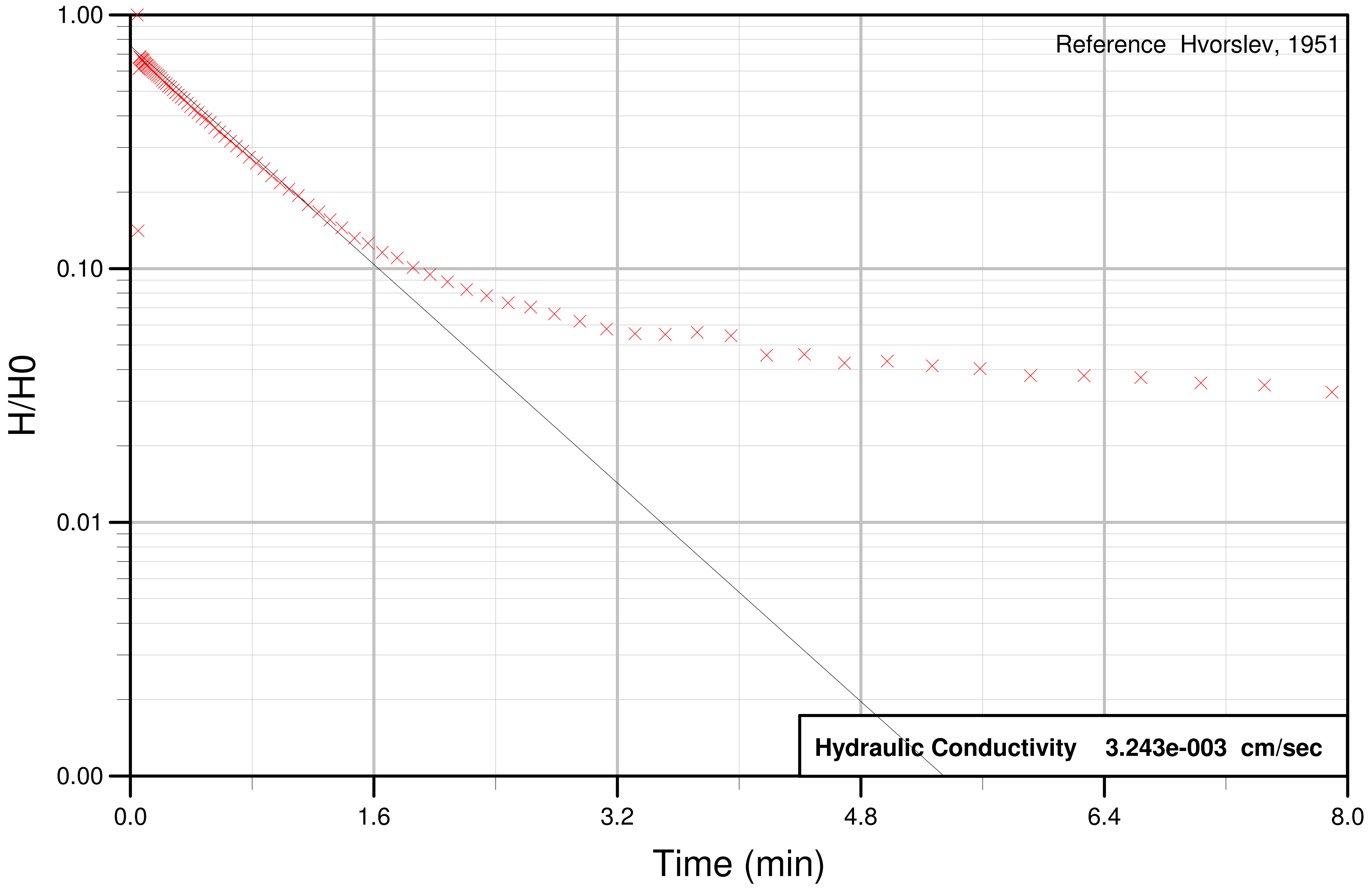
```
     Initial Displacement
          Fixed Value                  = 1.933 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00216583 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.951239 min

     Linear Regression Slope
          Fixed Value                  = -1.06191 /min

     Linear Regression Intercept
          Fixed Value                  = 1.016

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                   Slope:       -1.061906 /min
                   Intercept:    1.016002 dimensionless

     Residual Mean           =  0.028449
     Residual Standard Dev.  =  0.066818
     Residual Sum of Squares =  0.348082
     Absolute Residual Mean  =  0.060607
     Minimum Residual        = -0.063677
     Maximum Residual        =  0.124835


DATA DETAIL
```

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.19	1.63	1.61	0.02
1	0.20	1.53	1.59	-0.06
2	0.21	1.52	1.57	-0.05
3	0.22	1.51	1.55	-0.04
4	0.24	1.49	1.53	-0.04
5	0.25	1.47	1.51	-0.04
6	0.26	1.44	1.48	-0.04
7	0.28	1.42	1.46	-0.04
8	0.30	1.39	1.43	-0.04
9	0.31	1.37	1.41	-0.04

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.33	1.34	1.38	-0.04
11	0.35	1.31	1.35	-0.04
12	0.37	1.28	1.32	-0.04
13	0.40	1.25	1.29	-0.04
14	0.42	1.22	1.26	-0.04
15	0.44	1.19	1.22	-0.04
16	0.47	1.15	1.19	-0.04
17	0.50	1.12	1.16	-0.04
18	0.52	1.09	1.12	-0.04
19	0.55	1.05	1.09	-0.04
20	0.59	1.02	1.05	-0.04
21	0.62	0.98	1.02	-0.03
22	0.66	0.95	0.98	-0.03
23	0.70	0.91	0.94	-0.03
24	0.74	0.87	0.90	-0.03
25	0.78	0.83	0.86	-0.03
26	0.83	0.79	0.82	-0.02
27	0.88	0.76	0.77	-0.02
28	0.93	0.72	0.73	-0.02
29	0.98	0.68	0.69	-0.01
30	1.04	0.64	0.65	-0.01
31	1.10	0.60	0.61	-0.01
32	1.17	0.57	0.57	0.00
33	1.24	0.53	0.53	0.01
34	1.31	0.50	0.49	0.01
35	1.39	0.47	0.45	0.02
36	1.47	0.43	0.41	0.02
37	1.56	0.41	0.37	0.03
38	1.65	0.38	0.34	0.04
39	1.75	0.35	0.31	0.04
40	1.86	0.33	0.27	0.05
41	1.97	0.31	0.24	0.06
42	2.08	0.28	0.21	0.07
43	2.21	0.26	0.19	0.07
44	2.34	0.25	0.16	0.08
45	2.48	0.23	0.14	0.09
46	2.63	0.22	0.12	0.10
47	2.79	0.21	0.10	0.11
48	2.95	0.20	0.09	0.11
49	3.13	0.19	0.07	0.11
50	3.32	0.18	0.06	0.12

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	3.51	0.17	0.05	0.12
52	3.72	0.16	0.04	0.12
53	3.95	0.15	0.03	0.12
54	4.18	0.15	0.02	0.12
55	4.43	0.14	0.02	0.12
56	4.69	0.14	0.01	0.12
57	4.97	0.13	0.01	0.12
58	5.27	0.13	0.01	0.12
59	5.58	0.13	0.01	0.12
60	5.91	0.12	0.00	0.12
61	6.27	0.12	0.00	0.12
62	6.64	0.12	0.00	0.11
63	7.03	0.11	0.00	0.11
64	7.45	0.11	0.00	0.11
65	7.90	0.11	0.00	0.10

PT-INJ-6 Rising Head Test 1



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-6 Rising Test 1
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 88                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Inner Diameter
            Fixed Value                  = 0.315 ft

       Screen Length
            Fixed Value                  = 15.6 ft
```

```
     Initial Displacement
          Fixed Value                    = 2.852 ft

     Hydraulic Conductivity
          Calculated Value               = 0.00324295 cm/sec

     Time to 37% Displacement
          Calculated Value               = 0.572363 min

     Linear Regression Slope
          Fixed Value                    = -1.23775 /min

     Linear Regression Intercept
          Fixed Value                    = 0.751404

     Calculation Type
          Selected Value                 = Default
```

ANALYSIS STATISTICS

```
     Regression Line
                  Slope:        -1.237746 /min
                  Intercept:     0.751404 dimensionless

     Residual Mean           = -0.008969
     Residual Standard Dev.  =  0.209528
     Residual Sum of Squares =  3.870442
     Absolute Residual Mean  =  0.099448
     Minimum Residual        = -1.612400
     Maximum Residual        =  0.825094
```

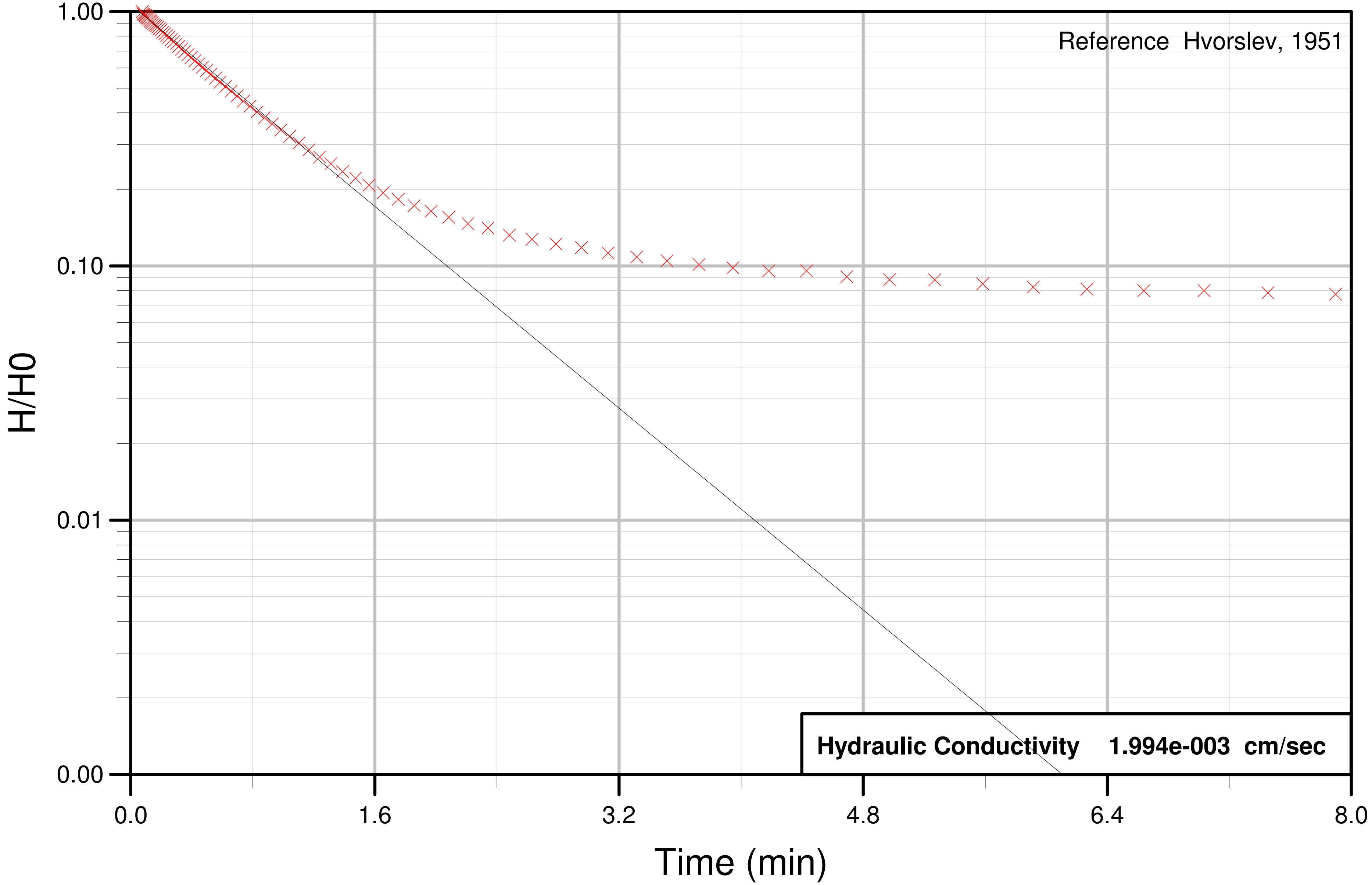
DATA DETAIL

Index	**Time**	**Obs. Displacement**	**Calc. Displacement**	**Residual**
	(min)	(ft)	(ft)	
0	0.05	2.85	2.03	0.83
1	0.05	0.40	2.01	-1.61
2	0.05	1.75	2.00	-0.25
3	0.06	1.95	1.99	-0.04
4	0.06	1.94	1.98	-0.04
5	0.07	1.92	1.97	-0.04
6	0.08	1.90	1.95	-0.05
7	0.08	1.90	1.94	-0.05
8	0.08	1.88	1.93	-0.05
9	0.09	1.85	1.92	-0.07

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.10	1.84	1.91	-0.07
11	0.10	1.82	1.89	-0.07
12	0.11	1.80	1.88	-0.08
13	0.11	1.80	1.87	-0.07
14	0.12	1.78	1.85	-0.08
15	0.13	1.77	1.83	-0.07
16	0.13	1.74	1.82	-0.08
17	0.14	1.73	1.80	-0.07
18	0.15	1.70	1.78	-0.08
19	0.16	1.69	1.76	-0.08
20	0.17	1.67	1.74	-0.07
21	0.18	1.65	1.72	-0.07
22	0.19	1.63	1.70	-0.07
23	0.20	1.61	1.68	-0.07
24	0.21	1.57	1.65	-0.08
25	0.22	1.55	1.63	-0.08
26	0.24	1.53	1.60	-0.08
27	0.25	1.49	1.57	-0.08
28	0.26	1.48	1.54	-0.06
29	0.28	1.44	1.51	-0.07
30	0.30	1.41	1.48	-0.07
31	0.31	1.38	1.45	-0.07
32	0.33	1.35	1.42	-0.07
33	0.35	1.32	1.38	-0.06
34	0.37	1.28	1.35	-0.07
35	0.40	1.24	1.31	-0.07
36	0.42	1.21	1.27	-0.07
37	0.44	1.18	1.24	-0.06
38	0.47	1.14	1.20	-0.06
39	0.50	1.11	1.16	-0.05
40	0.52	1.07	1.12	-0.05
41	0.55	1.02	1.08	-0.06
42	0.59	0.99	1.04	-0.05
43	0.62	0.95	0.99	-0.05
44	0.66	0.91	0.95	-0.04
45	0.70	0.87	0.91	-0.04
46	0.74	0.83	0.86	-0.03
47	0.78	0.78	0.81	-0.03
48	0.83	0.74	0.77	-0.03
49	0.88	0.71	0.72	-0.02
50	0.93	0.66	0.68	-0.02

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	0.98	0.62	0.63	-0.01
52	1.04	0.59	0.59	-0.01
53	1.10	0.55	0.55	0.01
54	1.17	0.51	0.50	0.00
55	1.24	0.48	0.46	0.01
56	1.31	0.44	0.42	0.02
57	1.39	0.41	0.38	0.03
58	1.47	0.38	0.35	0.03
59	1.56	0.36	0.31	0.05
60	1.65	0.33	0.28	0.05
61	1.75	0.31	0.24	0.07
62	1.86	0.29	0.21	0.07
63	1.97	0.27	0.19	0.08
64	2.08	0.25	0.16	0.09
65	2.21	0.24	0.14	0.10
66	2.34	0.22	0.12	0.10
67	2.48	0.21	0.10	0.11
68	2.63	0.20	0.08	0.12
69	2.79	0.19	0.07	0.12
70	2.95	0.18	0.06	0.12
71	3.13	0.17	0.04	0.12
72	3.32	0.16	0.04	0.12
73	3.51	0.16	0.03	0.13
74	3.72	0.16	0.02	0.14
75	3.95	0.16	0.02	0.14
76	4.18	0.13	0.01	0.12
77	4.43	0.13	0.01	0.12
78	4.69	0.12	0.01	0.11
79	4.97	0.12	0.00	0.12
80	5.27	0.12	0.00	0.11
81	5.58	0.12	0.00	0.11
82	5.91	0.11	0.00	0.11
83	6.27	0.11	0.00	0.11
84	6.64	0.11	0.00	0.11
85	7.03	0.10	0.00	0.10
86	7.45	0.10	0.00	0.10
87	7.90	0.09	0.00	0.09

PT-INJ-6 Rising Head Test 2



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-6 Rising Test 2
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 82                   Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Length
            Fixed Value                 = 15.6 ft
```

```
     Initial Displacement
          Fixed Value                  = 1.976 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00199416 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.930793 min

     Linear Regression Slope
          Fixed Value                  = -1.14178 /min

     Linear Regression Intercept
          Fixed Value                  = 1.07091

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -1.141778 /min
                  Intercept:    1.070908 dimensionless

     Residual Mean           =  0.038873
     Residual Standard Dev.  =  0.081337
     Residual Sum of Squares =  0.666398
     Absolute Residual Mean  =  0.066410
     Minimum Residual        = -0.044872
     Maximum Residual        =  0.175539
```

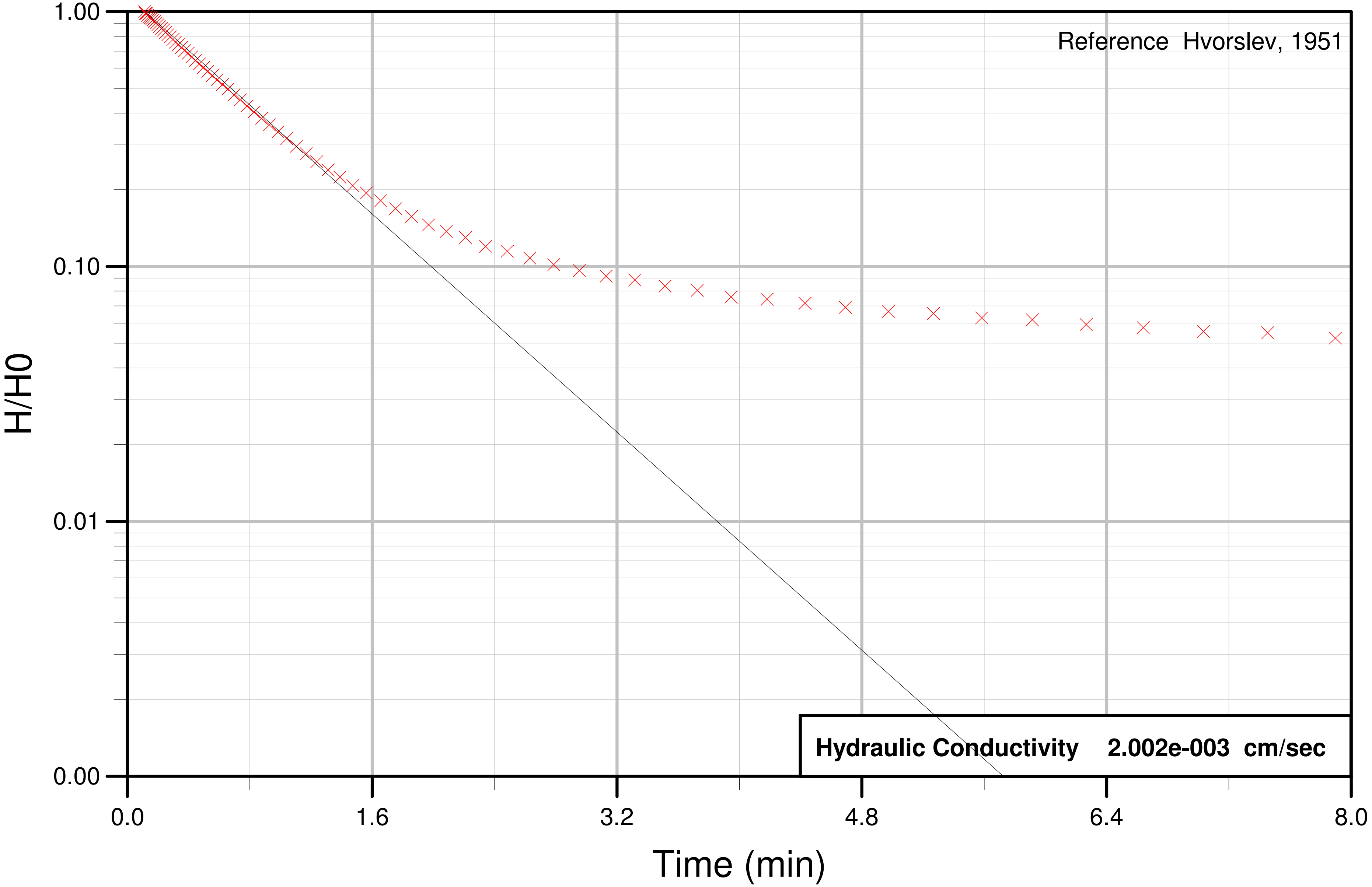
DATA DETAIL

Index	Time (min)	Obs. Displacement (ft)	Calc. Displacement (ft)	Residual
0	0.08	1.98	1.94	0.03
1	0.08	1.94	1.93	0.01
2	0.08	1.93	1.92	0.00
3	0.09	1.92	1.91	0.01
4	0.10	1.91	1.90	0.01
5	0.10	1.89	1.89	0.00
6	0.11	1.87	1.88	0.00
7	0.11	1.86	1.86	0.00
8	0.12	1.84	1.85	-0.01
9	0.13	1.82	1.83	-0.01

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.13	1.81	1.82	-0.01
11	0.14	1.79	1.80	-0.01
12	0.15	1.77	1.79	-0.02
13	0.16	1.75	1.77	-0.02
14	0.17	1.74	1.75	-0.01
15	0.18	1.72	1.73	-0.01
16	0.19	1.69	1.71	-0.02
17	0.20	1.67	1.69	-0.01
18	0.21	1.64	1.66	-0.03
19	0.22	1.62	1.64	-0.02
20	0.24	1.59	1.62	-0.03
21	0.25	1.56	1.59	-0.03
22	0.26	1.53	1.56	-0.03
23	0.28	1.50	1.54	-0.03
24	0.30	1.47	1.51	-0.04
25	0.31	1.44	1.48	-0.04
26	0.33	1.41	1.45	-0.04
27	0.35	1.37	1.41	-0.04
28	0.37	1.34	1.38	-0.04
29	0.40	1.30	1.35	-0.04
30	0.42	1.27	1.31	-0.04
31	0.44	1.23	1.27	-0.04
32	0.47	1.19	1.24	-0.04
33	0.50	1.16	1.20	-0.04
34	0.52	1.12	1.16	-0.04
35	0.55	1.08	1.12	-0.04
36	0.59	1.04	1.08	-0.04
37	0.62	1.00	1.04	-0.04
38	0.66	0.96	1.00	-0.04
39	0.70	0.92	0.96	-0.03
40	0.74	0.88	0.91	-0.03
41	0.78	0.84	0.87	-0.03
42	0.83	0.80	0.82	-0.03
43	0.88	0.76	0.78	-0.02
44	0.93	0.72	0.73	-0.02
45	0.98	0.68	0.69	-0.01
46	1.04	0.64	0.64	-0.01
47	1.10	0.60	0.60	0.00
48	1.17	0.57	0.56	0.01
49	1.24	0.53	0.51	0.01
50	1.31	0.50	0.47	0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	1.39	0.46	0.43	0.03
52	1.47	0.44	0.39	0.04
53	1.56	0.41	0.36	0.05
54	1.65	0.38	0.32	0.06
55	1.75	0.36	0.29	0.08
56	1.86	0.34	0.25	0.09
57	1.97	0.32	0.22	0.10
58	2.08	0.31	0.20	0.11
59	2.21	0.29	0.17	0.12
60	2.34	0.28	0.15	0.13
61	2.48	0.26	0.12	0.14
62	2.63	0.25	0.11	0.15
63	2.79	0.24	0.09	0.15
64	2.95	0.23	0.07	0.16
65	3.13	0.22	0.06	0.16
66	3.32	0.21	0.05	0.17
67	3.51	0.21	0.04	0.17
68	3.72	0.20	0.03	0.17
69	3.95	0.19	0.02	0.17
70	4.18	0.19	0.02	0.17
71	4.43	0.19	0.01	0.18
72	4.69	0.18	0.01	0.17
73	4.97	0.17	0.01	0.17
74	5.27	0.17	0.01	0.17
75	5.58	0.17	0.00	0.16
76	5.91	0.16	0.00	0.16
77	6.27	0.16	0.00	0.16
78	6.64	0.16	0.00	0.16
79	7.03	0.16	0.00	0.16
80	7.45	0.16	0.00	0.15
81	7.90	0.15	0.00	0.15

PT-INJ-6 Rising Head Test 3



```
                        AQUIFERWIN32 ANALYSIS SUMMARY FILE


Selected Analysis: Hvorslev, 1951

     Time Lag and Soil Permeability in Ground-Water Observations


SITE INFORMATION

     Site Designator:
     Job Number:      49543.004.403
     Client:          General Electric Company
     Site Name:       Former Powerex, Inc. Facility
     Additional Info:
          RI/FS WP Addendum No. 4


AQUIFER TEST INFORMATION

     Test Designator: PT-INJ-6 Rising Test 3
     Job Number:      49543.004.403
     Date:            10/10/12
     Area Name:
     Additional Info:


ANALYSIS INFORMATION

     Analysis Designator:
     Job Number:          49543.004.403
     Date:                10/22/12
     Analyst Name:        PLD
     Additional Info:


ANALYSIS SUMMARY

     Simple Analysis - No Wells Defined


     Number of Points = 75                    Manual Match


  ANALYSIS PARAMETERS

       Casing Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Inner Diameter
            Fixed Value                 = 0.315 ft

       Screen Length
            Fixed Value                 = 15.6 ft
```

```
     Initial Displacement
          Fixed Value                  = 1.91 ft

     Hydraulic Conductivity
          Calculated Value             = 0.00200185 cm/sec

     Time to 37% Displacement
          Calculated Value             = 0.927214 min

     Linear Regression Slope
          Fixed Value                  = -1.23171 /min

     Linear Regression Intercept
          Fixed Value                  = 1.15929

     Calculation Type
          Selected Value               = Default


ANALYSIS STATISTICS

     Regression Line
                  Slope:       -1.231708 /min
                  Intercept:    1.159287 dimensionless

     Residual Mean           =  0.022414
     Residual Standard Dev.  =  0.071964
     Residual Sum of Squares =  0.426089
     Absolute Residual Mean  =  0.064128
     Minimum Residual        = -0.053891
     Maximum Residual        =  0.131734


DATA DETAIL
```

Index	Time	Obs. Displacement	Calc. Displacement	Residual
	(min)	(ft)	(ft)	
0	0.11	1.91	1.93	-0.02
1	0.12	1.88	1.91	-0.03
2	0.13	1.88	1.90	-0.02
3	0.13	1.84	1.88	-0.04
4	0.14	1.82	1.86	-0.04
5	0.15	1.80	1.84	-0.04
6	0.16	1.79	1.82	-0.03
7	0.17	1.77	1.80	-0.03
8	0.18	1.75	1.78	-0.03
9	0.19	1.72	1.76	-0.03

Index	Time	Obs. Displacement	Calc. Displacement	Residual
10	0.20	1.70	1.73	-0.04
11	0.21	1.67	1.71	-0.04
12	0.22	1.64	1.68	-0.04
13	0.24	1.62	1.66	-0.04
14	0.25	1.58	1.63	-0.05
15	0.26	1.55	1.60	-0.05
16	0.28	1.52	1.57	-0.05
17	0.30	1.49	1.54	-0.05
18	0.31	1.45	1.50	-0.05
19	0.33	1.42	1.47	-0.05
20	0.35	1.38	1.43	-0.05
21	0.37	1.34	1.40	-0.05
22	0.40	1.31	1.36	-0.05
23	0.42	1.27	1.32	-0.05
24	0.44	1.23	1.28	-0.05
25	0.47	1.19	1.24	-0.05
26	0.50	1.15	1.20	-0.05
27	0.52	1.11	1.16	-0.05
28	0.55	1.07	1.12	-0.05
29	0.59	1.03	1.08	-0.04
30	0.62	0.99	1.03	-0.04
31	0.66	0.95	0.98	-0.04
32	0.70	0.90	0.94	-0.04
33	0.74	0.86	0.89	-0.03
34	0.78	0.81	0.85	-0.03
35	0.83	0.77	0.80	-0.03
36	0.88	0.73	0.75	-0.02
37	0.93	0.69	0.71	-0.02
38	0.98	0.64	0.66	-0.02
39	1.04	0.61	0.61	-0.01
40	1.10	0.57	0.57	0.00
41	1.17	0.53	0.53	0.00
42	1.24	0.49	0.48	0.01
43	1.31	0.46	0.44	0.02
44	1.39	0.43	0.40	0.03
45	1.47	0.40	0.36	0.04
46	1.56	0.37	0.32	0.05
47	1.65	0.35	0.29	0.06
48	1.75	0.32	0.26	0.07
49	1.86	0.30	0.22	0.08
50	1.97	0.28	0.20	0.08

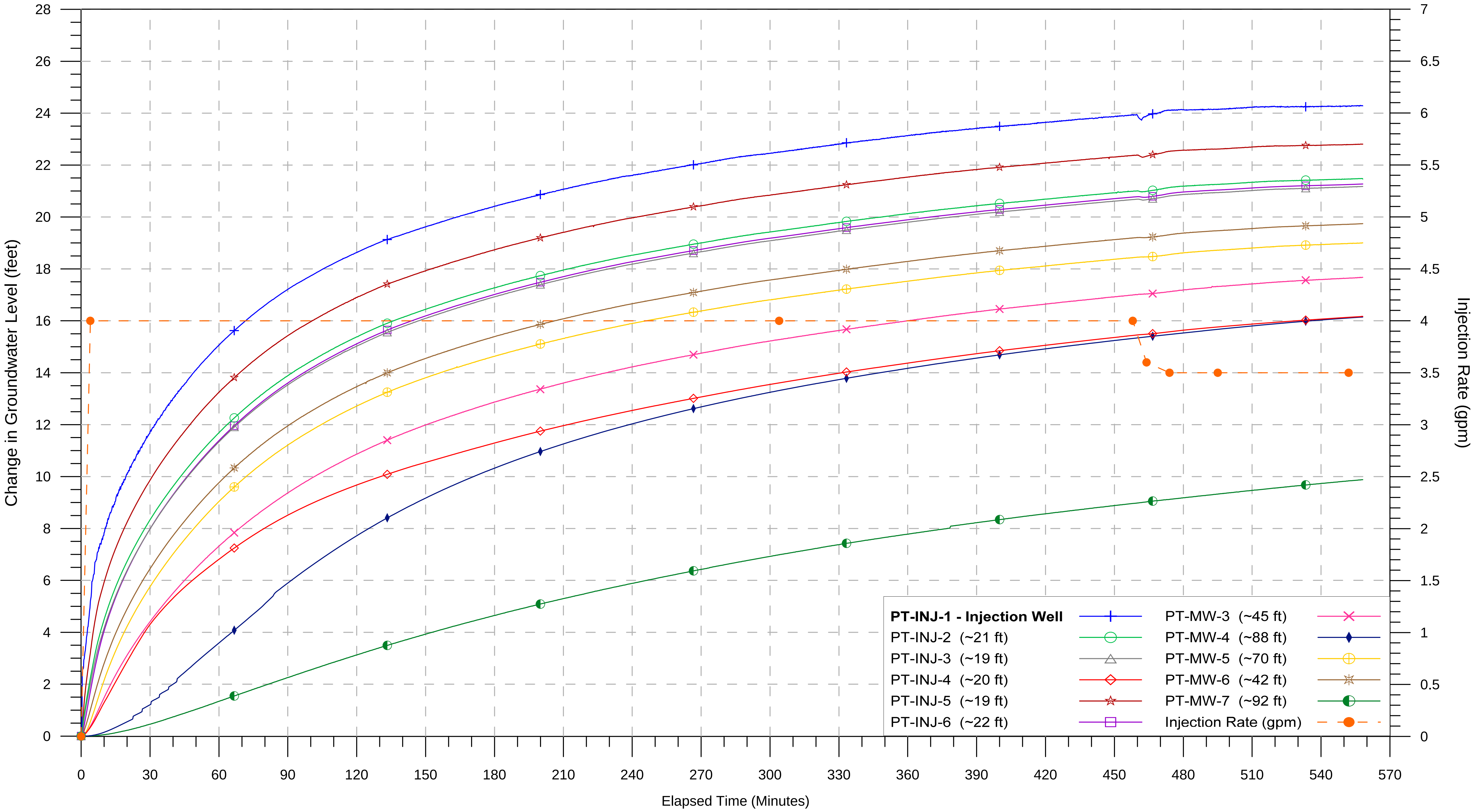
Index	Time	Obs. Displacement	Calc. Displacement	Residual
51	2.08	0.26	0.17	0.09
52	2.21	0.25	0.15	0.10
53	2.34	0.23	0.12	0.11
54	2.48	0.22	0.10	0.11
55	2.63	0.21	0.09	0.12
56	2.79	0.19	0.07	0.12
57	2.95	0.18	0.06	0.13
58	3.13	0.18	0.05	0.13
59	3.32	0.17	0.04	0.13
60	3.51	0.16	0.03	0.13
61	3.72	0.15	0.02	0.13
62	3.95	0.15	0.02	0.13
63	4.18	0.14	0.01	0.13
64	4.43	0.14	0.01	0.13
65	4.69	0.13	0.01	0.13
66	4.97	0.13	0.00	0.12
67	5.27	0.13	0.00	0.12
68	5.58	0.12	0.00	0.12
69	5.91	0.12	0.00	0.12
70	6.27	0.11	0.00	0.11
71	6.64	0.11	0.00	0.11
72	7.03	0.11	0.00	0.11
73	7.45	0.11	0.00	0.10
74	7.90	0.10	0.00	0.10

ATTACHMENT D

CONSTANT HEAD TEST RESULTS

FIGURE D-1a
PT-INJ-1 25 FOOT CONSTANT HEAD TEST

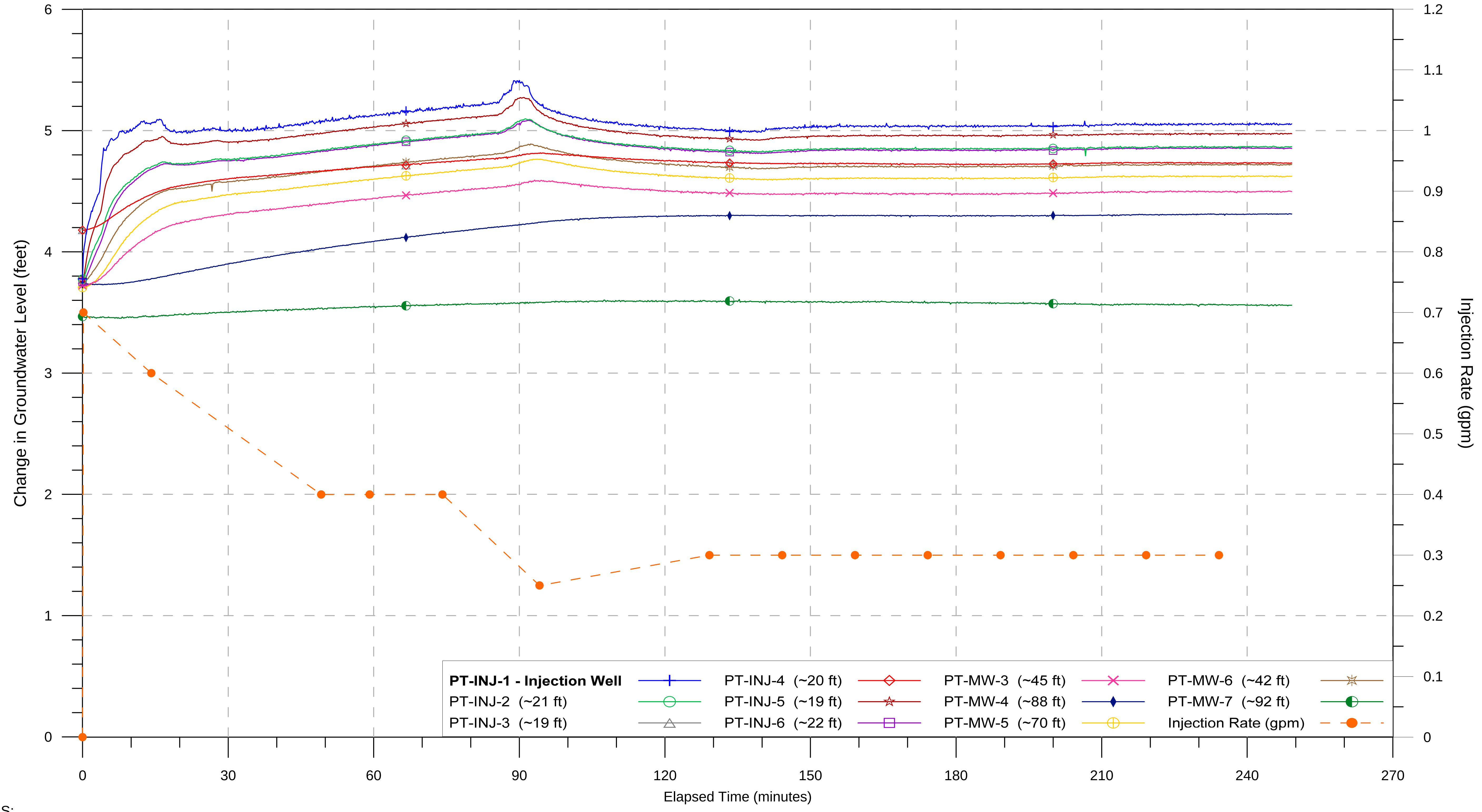
Former Powerex, Inc. Facility
Auburn, New York



NOTES:
- The groundwater level during step 1 stabilized at 24.3 ft above static with an injection rate of 3.5 gpm.
- A total of 2,048 gallons of treated water were injected during the PT-INJ-1 25 foot constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name.

FIGURE D-1b
PT-INJ-1 5 FOOT CONSTANT HEAD TEST

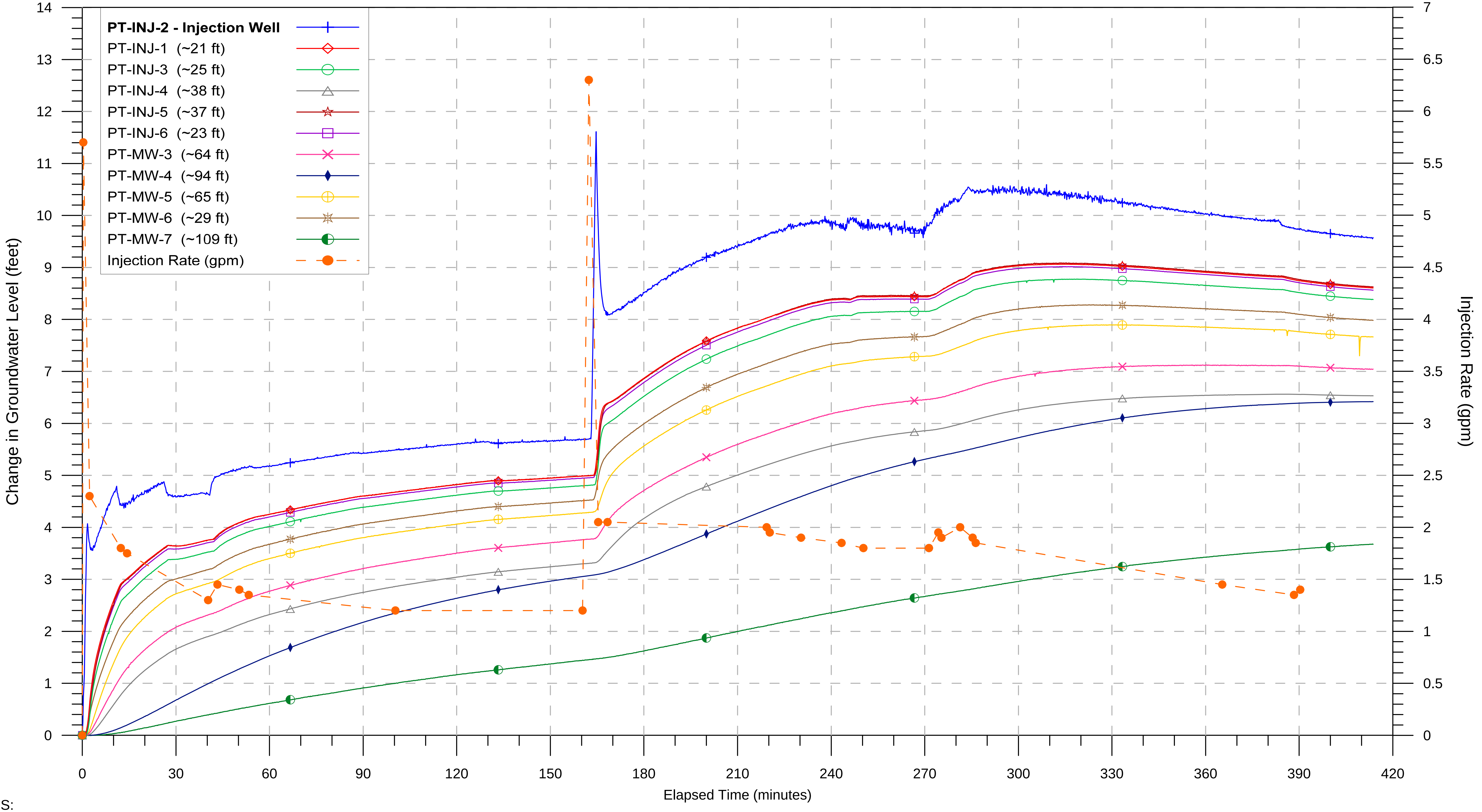
Former Powerex, Inc. Facility
Auburn, New York



NOTES:
- The 5 ft constant head test on PT-INJ-1 was performed after the 25 ft test before the aquifer had returned to static conditions. The initial level from the 25 ft test was used as the static reference for the 5 ft test.
- The groundwater level during step 1 stabilized at 5.1 ft above static with an injection rate of 0.3 gpm.
- A total of 90 gallons of treated water were injected during the PT-INJ-1 5 foot constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name in the legend.

FIGURE D-2
PT-INJ-2 CONSTANT HEAD TEST

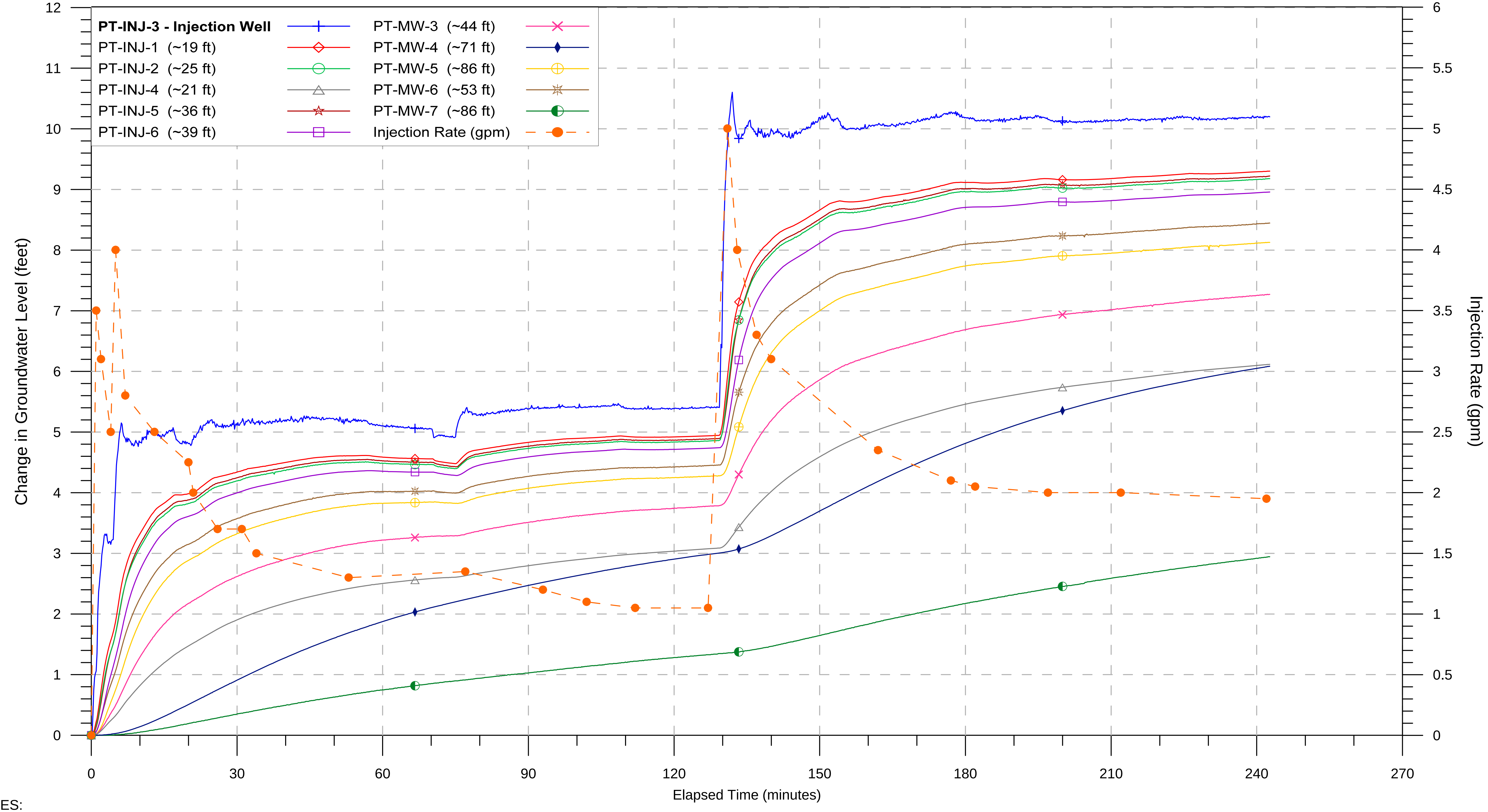
Former Powerex, Inc. Facility
Auburn, New York



NOTES:
- The groundwater level during step 1 stabilized at 5.7 ft above static with an injection rate of 1.2 gpm.
- The groundwater level during step 2 was 9.6 ft above static with an injection rate of 1.4 gpm. The injection rate and groundwater level did not stabilize during the second step.
- A total of 655 gallons of treated water were injected during the PT-INJ-2 constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name.

FIGURE D-3
PT-INJ-3 CONSTANT HEAD TEST

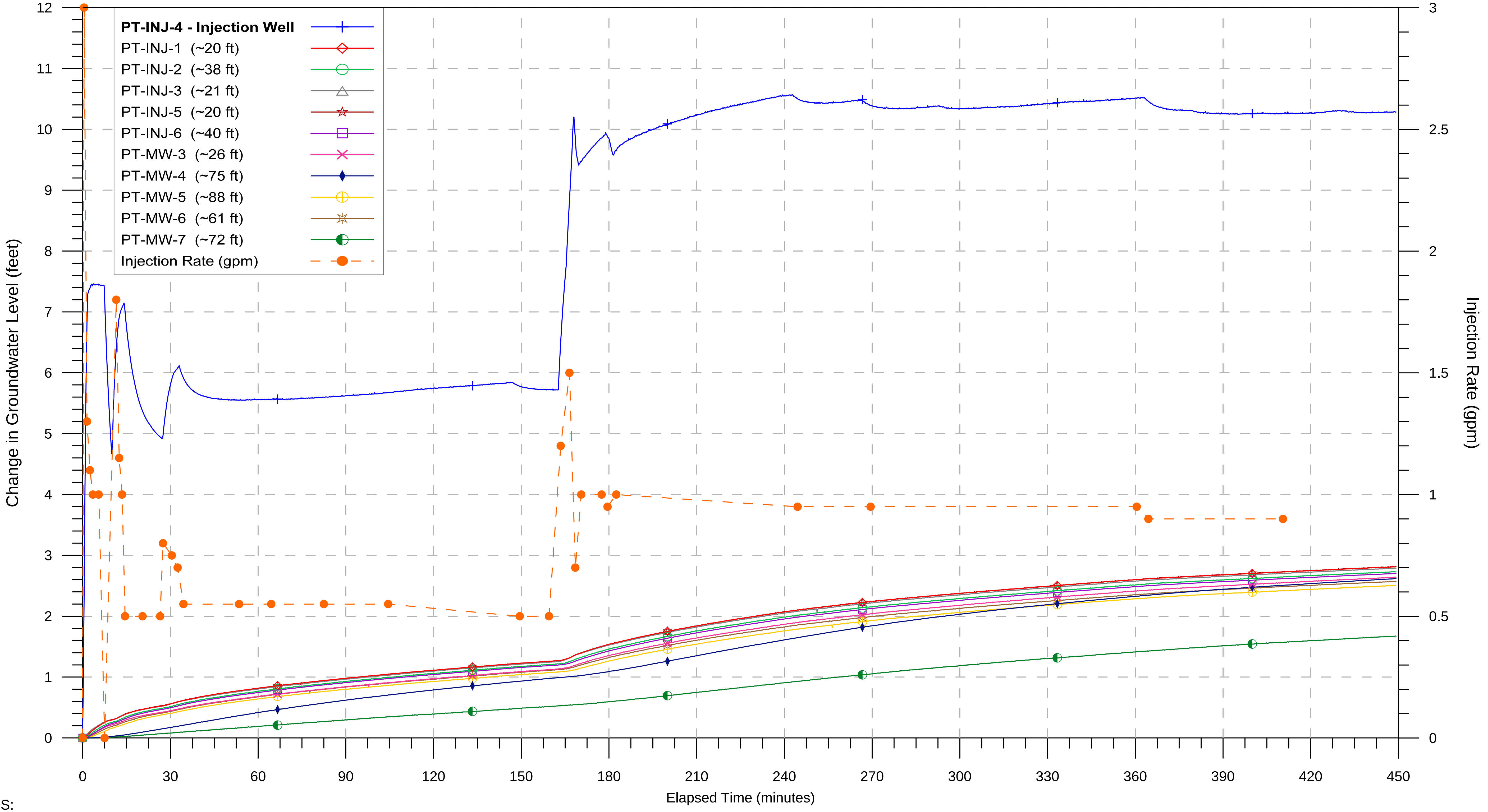
Former Powerex, Inc. Facility
Auburn, New York



NOTES:
- The groundwater level during step 1 stabilized at 5.4 ft above static with an injection rate of 1.05 gpm.
- The groundwater level during step 2 was 10.2 ft above static with an injection rate of 1.95 gpm.
- A total of 460 gallons of treated water were injected during the PT-INJ-3 constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name.

FIGURE D-4
PT-INJ-4 CONSTANT HEAD TEST

Former Powerex, Inc. Facility
Auburn, New York



NOTES:

- The groundwater level during step 1 stabilized at 5.7 ft above static with an injection rate of 0.5 gpm.
- The groundwater level during step 2 was 10.3 ft above static with an injection rate of 0.9 gpm.
- A total of 367 gallons of treated water were injected during the PT-INJ-4 constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name.

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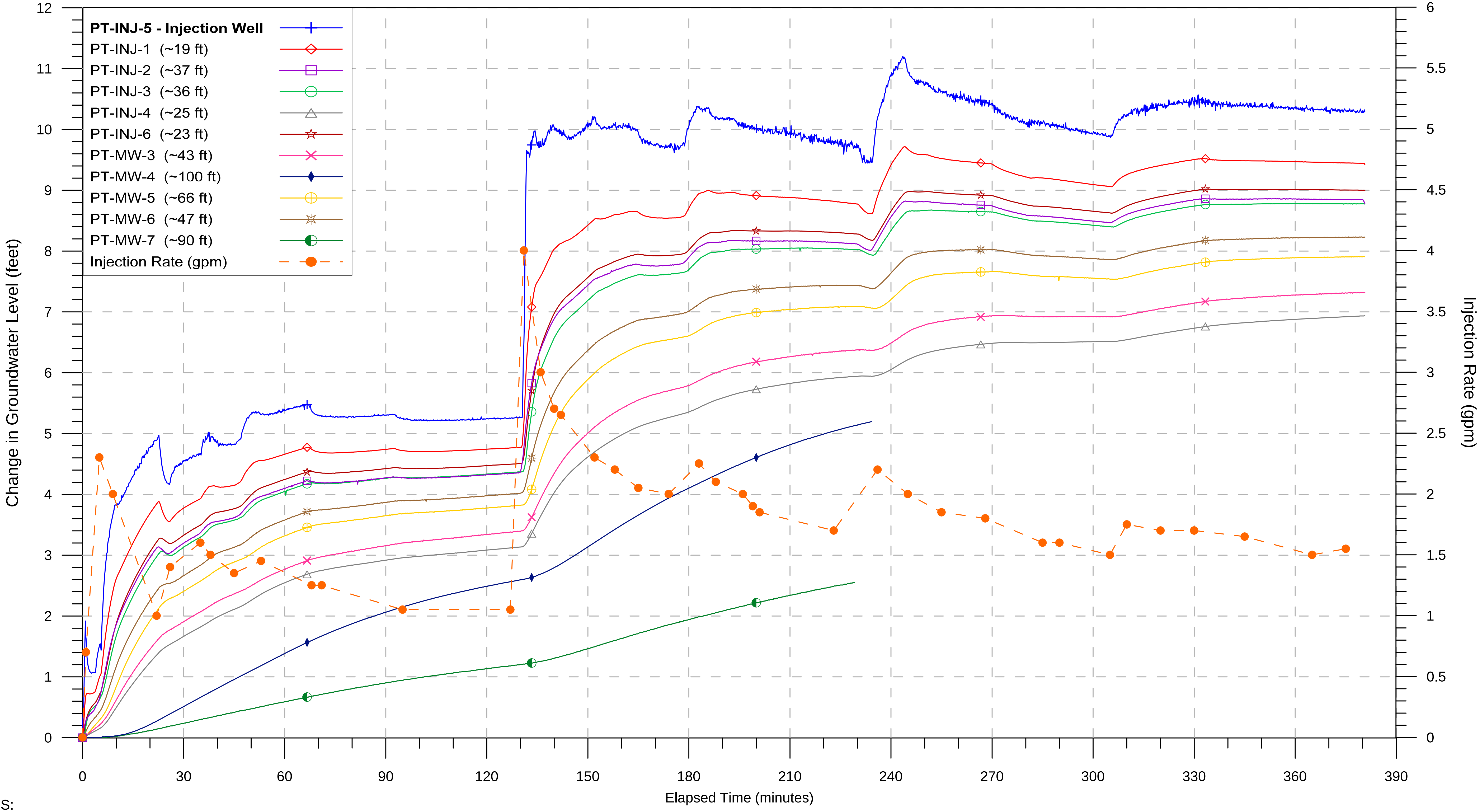
FIGURE D-5
PT-INJ-5 CONSTANT HEAD TEST

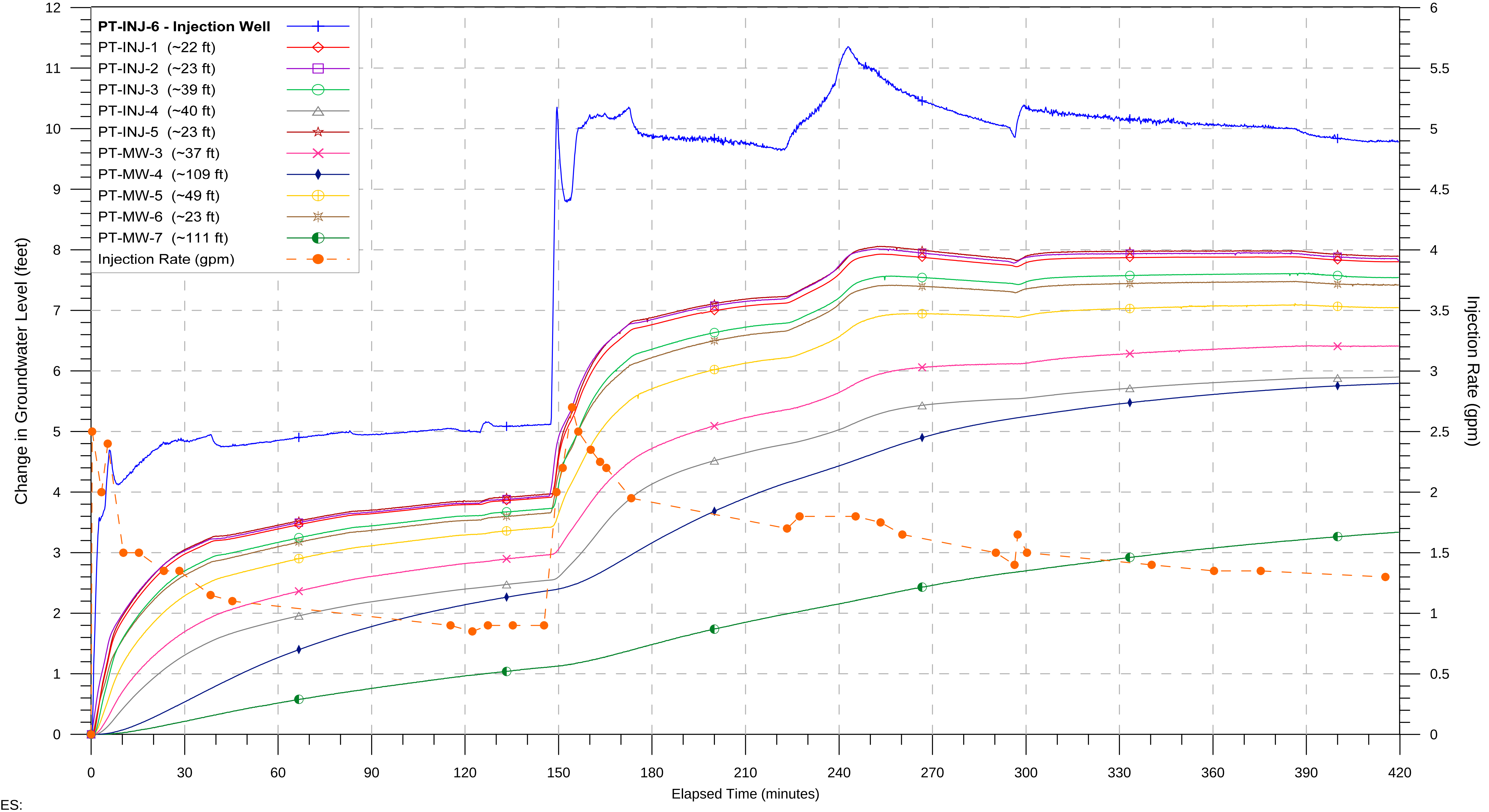
Former Powerex, Inc. Facility
Auburn, New York



NOTES:
- The groundwater level during step 1 stabilized at 5.3 ft above static with an injection rate of 1.05 gpm.
- The groundwater level during step 2 stabilized at 10.3 ft above static with an injection rate of 1.55 gpm.
- A total of 639 gallons of treated water were injected during the PT-INJ-5 constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name.
- The automated transducers in PT-MW-4 and PT-MW-7 failed during step 2 of the PT-INJ-5 constant head test.

FIGURE D-6
PT-INJ-6 CONSTANT HEAD TEST

Former Powerex, Inc. Facility
Auburn, New York



NOTES:
- The groundwater level during step 1 stabilized at 4.9 ft above static with an injection rate of 0.9 gpm.
- The groundwater level during step 2 stabilized at 9.8 ft above static with an injection rate of 1.3 gpm.
- A total of 606 gallons of treated water were injected during the PT-INJ-6 constant head test.
- The distance of each observation well from the injection well is listed in parentheses after the well name.

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ATTACHMENT E

LOW FLOW SAMPLING LOGS

Geosyntec consultants

130 Research Lane, Suite 2
Guelph, Ontario, Canada N1G 5G3
(519)822-2230 Fax (519)822-3151

MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: MW-3

Project Name: GE Auburn

Project Number: TR0344A

Date: 22 January 2013

Recorded By: LJO

Sample ID: PT-MW-3-[illegible]

Duplicate ID: /

Weather: -25°C

Well Diameter: 4"

Total Depth of Well: 58m 41.55

Initial Depth to Water: 33.55 Time: 14:58

Casing Volume: /

Depth to Water After Purging: 34.40 Time: 15:17

Method of Purging: Low-Flow

Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(mS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
15:02	start pump								
15:05	48	2	4	7.63	7.36	1.311	1.04	-145.2	WL=34.40
15:08	↓	↓	6	9.33	7.30	1.339	0.61	-137.2	WL 34.40
15:11			8	10.07	7.29	1.344	0.44	-131.1	WL= 34.40
15:14			10	10.37	7.25	1.341	0.36	-126.7	34.40
15:17			12	10.41	7.22	1.329	0.32	-121.8	WL=34.40

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	15:18	plastic	500 mL	1	none
Helium	↓	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: MW-4
Project Name: GE Auburn
Project Number: TR0344A
Date: 22 January 2013
Recorded By: L.Jo
Sample ID: PT-MW-4
Duplicate ID: –
Weather: -25°C

Well Diameter: 4"
Total Depth of Well: 57 40-54
Initial Depth to Water: 32.40 Time: 14:22
Casing Volume: –
Depth to Water After Purging: 34.85 Time: 14:45
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(~~µ~~mS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
14:30	well		started						
14:33	47	1	4L	7.93	7.15	1.726	0.84	-104.0	WL-34.4. ·↓ flow
14:36	↓	1	5L	6.05	7.15	1.745	0.55	-103.1	WL-34.65
14:39			6L	3.61	7.12	1.759	0.49	-107.9	= 34.75
14:42			7L	3.06	7.11	1.760	0.47	-129.9	WL- 34.75
14:45	↓	↓	8L	3.13	7.11	1.706	0.43	-148.	WL- 34.85

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	14:46	plastic	500 mL	2 1	none
Helium	↓	vial	40 mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

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Well ID: MW-5
Project Name: GE Auburn
Project Number: TR0344A
Date: 22 January 2013
Recorded By: L.Jo
Sample ID: PT-MW-SAMAA
Duplicate ID: /
Weather: -25°C

Well Diameter: 4"
Total Depth of Well: 57 39-53
Initial Depth to Water: 31.17 Time: 13:12
Casing Volume: /
Depth to Water After Purging: 31.75 Time: 13:39
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	µS / cm	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
13:28	-	start	pump						
13:30	46	1	4	9.10	6.89	0.983	3.91	-132.9	
13:33	↓	↓	6	10.25	6.95	0.988	1.32	-134.1	WL=31.85
13:36			8	10.07	6.97	0.991	1.10	-125.8	WL=31.875
13:39			10	10.32	6.98	0.993	0.91	-120.4	WL=31.75
~~13:42~~									

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	13:41	plastic	500	1	none
Helium	↓	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: MW-6
Well Diameter: 4"
Project Name: GE Auburn
Total Depth of Well: ~~39.556~~ 39.53
Project Number: TR0344A
Initial Depth to Water: 31.31 Time: 13:53
Date: 22 January 2013
Casing Volume:
Recorded By: LJO
Depth to Water After Purging: 31.85 Time: 14:11
Sample ID: PT-MW-6 ~~[illegible]~~
Method of Purging: Low-Flow
Duplicate ID:
Method of Sampling: Low-Flow
Weather: -25°C

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(µS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
14:00	—	pump on							
14:03	46	1 ~~[illegible]~~	4	8.14	7.17	1.072	1.77	-119.1	WL = 31.65
14:06	↓	↓	8	9.14	7.06	1.086	0.78	-116.3	WL - 31.70
14:09			~~18~~ 12	9.42	7.05	1.102	0.57	-115.4	WL - 31.85
14:11			16	9.25	7.04	1.111	0.53	-114.0	WL = 31.85

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	14:12	plastic	250mL	1	none
Helium	14:12	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: ~~MW~~ ~~HNJ~~ MW-7
Project Name: GE Auburn
Project Number: TR0344A
Date: 22 January 2013
Recorded By: LJO
Sample ID: PT-MW-7 ~~[illegible]~~
Duplicate ID: —
Weather: ~~N/A~~ ~25°C

Well Diameter: 4"
Total Depth of Well: 60 44-58
Initial Depth to Water: 34.51 Time: 15:31
Casing Volume: —
Depth to Water After Purging: 35.83 Time: 15:44
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	µS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
15:32	—	pump	on						
15:35	51	2	4	8.17	6.79	1.534	0.67	-84.6	WL = 35.55
15:38	↓	↓	6	8.63	6.93	1.535	0.47	-94.6	WL = 35.70
15:41			8	8.42	6.97	1.542	0.40	-97.2	WL = 35.77
15:44			10	5.61	7.02	1.551	0.36	96.6	WL = 35.83

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	15:45	plastic	500mL	2	none
Helium	↓	vial	40 mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: INJ1
Project Name: GE Auburn
Project Number: TR0344A
Date: 23 January 2013
Recorded By: LJO
Sample ID: PT-INJ-1-BKG
Duplicate ID: /
Weather: Cold

Well Diameter: 4"
Total Depth of Well: 60 43-58
Initial Depth to Water: 36.40 Time: 12:10
Casing Volume: /
Depth to Water After Purging: 35.80 Time: 12:23
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(µS / cm) m	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
12:11	51	pump on.							
12:14	↓	1.5	4	11.42	6.68	1.439	6.70	-111.1	WL = 35.75
12:17		↓	8	11.83	6.70	1.440	6.09	-116.6	WL = 35.78
12:20			12	11.89	6.74	1.435	0.74	-120.0	WL = 35.80
12:23	↓	↓	15	11.97	6.74	1.431	0.33	-120.2	WL = 35.80

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	12:24	plastic	500 mL	1	none
Helium	↓	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: INJ-~~M~~2
Project Name: GE Auburn
Project Number: TR0344A
Date: 23 January 2013
Recorded By: LJO
Sample ID: PT-INJ-2-BKG
Duplicate ID: /
Weather: Cold

Well Diameter: 4"
Total Depth of Well: 58 40-55
Initial Depth to Water: 32.60 Time: 09:39
Casing Volume: /
Depth to Water After Purging: 3232 Time: 13:02
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(mS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
12:50	48	-	pump	on					
12:53	↓	.5	4	10.73	6.06	1.379	1.36	-122.6	WL= 32.00
12:56		↓	6	11.18	6.41	1.382	0.45	-125.3	WL= 32.20
12:59			8	11.29	6.52	1.384	0.37	-132.6	WL- 3230
13:02			10	11.44	657	1.381	0.34	-135.4	WL= 32.32

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	13:03	plastic	500mL	2	none
Helium	↓	vial	40 mL	1	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

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Well ID: INS-3
Project Name: GE Auburn
Project Number: TR0344A
Date: 23 January 2013
Recorded By: L-D
Sample ID: PT-INJ-3-BKG
Duplicate ID: /
Weather: cold

Well Diameter: 4"
Total Depth of Well: 59 41-56
Initial Depth to Water: ~~[illegible]~~ 34.24 Time: 11:49
Casing Volume: /
Depth to Water After Purging: 35.35 Time: 12:01
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(µS / cm) M	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
11:50	48		pump		on				
11:53	↓	1	5	11.19	6.74	1.400	1.21	-124.9	WL= 35.25
11:56		↓	8	11.47	6.74	1.413	0.75	-126.2	WL- 35.30
11:59			11	11.60	6.76	1.416	0.54	-126.7	WL= 35.30
12:01			15	11.59	6.76	1.416	0.44	-126.7	WL 35.35

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	12:02	plastic	500mL	1	none
Helium	↓	vial	~~250ml~~ 40ml	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: INJ-4
Project Name: GE Auburn
Project Number: TR0344A
Date: 23 January 2013
Recorded By: LJO
Sample ID: PT-INJ-4-BKG
Duplicate ID: /
Weather: cold

Well Diameter: 4"
Total Depth of Well: 56 40.54
Initial Depth to Water: 33.24 Time: 11:08
Casing Volume: /
Depth to Water After Purging: 34.90 Time: 11:33
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(µS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
11:21	47	Pump		on					
11:24	↓	1	4	10.74	10.63	1.245	0.87	-79.5	WL=34.67
11:27		↓	6	11.29	10.52	1.213	0.51	-82.9	WL=34.90
11:30			8	11.19	9.63	1.153	0.31	-95.1	WL 34.90
11:33			10	11.65	8.63	1.253	0.22	-109	WL - 34.90

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	1134	plastic	500 mL	1	none
Helium	↓	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: INJ-5
Project Name: GE Auburn
Project Number: TR0344A
Date: 23 January 2013
Recorded By: LJO
Sample ID: PT-INJ-5-BKG
Duplicate ID: /
Weather: Cold

Well Diameter: 4"
Total Depth of Well: 59.5 41-57
Initial Depth to Water: 34.3 Time: 10.40
Casing Volume: /
Depth to Water After Purging: 34.725 Time: 10:57
Method of Purging: Low-Flow
Method of Sampling: Low-Flow

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(µS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
10:43	44	-	pump	on —					
10:46	↓	2L	4	10.78	9.22	1.400	3.17	-88.9	34.62
10:49		↓	6	11.10	9.29	1.398	2.18	-91.2	34.65
10:51			10	11.48	8.90	1.368	1.36	-122.2	34.70
10:54			12	11.55	7.93	1.392	0.41	-234.3	34.70
10:57			14	11.52	7.19	1.907	0.32	-164.2	34.725

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	10:58	plastic	500mL	1	none
Helium	↓	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

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MONITORING WELL DEVELOPMENT PURGING & SAMPLING RECORDS

Well ID: INJ-6
Well Diameter: 4"
Project Name: GE Auburn
Total Depth of Well: 59 41-57
Project Number: TR0344A
Initial Depth to Water: 34.97 Time: 10:10
Date: 23 January 2013
Casing Volume: NA
Recorded By: LJo
Depth to Water After Purging: 35.30 Time: 10:27
Sample ID: PT-INJ-6
Method of Purging: Low-Flow
Duplicate ID: /
Method of Sampling: Low-Flow
Weather: Cold

time	intake depth	pumping rate	cumulative volume	temp.	pH	specific conductance	D.O.	ORP	comments
	[✓ ft] / m	gpm / [✓ Lpm]	[✓ litres] / gallons	°F / [✓ °C]	(units)	(mS / cm)	(mg / L)	(mV)	odour, colour, sediment, load, well condition, presence of product
10:15	49	Pump on							
10:18	↓	1.5	4	10.19	6.57	1.430	0.73	-107.2	WL: 35.30
10:21		↓	6	10.35	6.42	1.433	0.57	-109.9	WL: 35.30
10:24			8	10.30	6.46	1.429	0.41	-111.0	WL: 35.30
10:27	↓	↓	10	10.35	6.46	1.423	0.37	-111.3	WL: 35.30

samples collected	time collected	container type	container size	container lot no.	preservative
Bromide	10:28	plastic	500mL	1	none
Helium	↓	vial	40mL	2	↓

Notes: (well condition, nearby activities or changes in land use, odors, problems, deviations from plan, etc.)

O'BRIEN & GERE

Low Flow Ground Water Sampling Log

Date	2/1/2013	Personnel	P. Freyer, L. Reid	Weather	12°F, 20mph, dark
Site Name	Powerex	Evacuation Method	Monsoon ~~Grundfos~~ Pump	Well #	PT-MW-3
Site Locatior	Auburn, NY	Sampling Method	Monsoon Grundfos Pump	Project #	49543.004.402

Well information:

Depth of Well * 58.76 ft.

Depth to Water * 34.17 ft.

Length of Water Column ______ ft.

* Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

☐ (Other, Specify)

Start Purge Time: 1726

indicate units

Elapsed Time	Depth To Water (ft bmp)	Temperature (Celsius)	pH (SU)	Specific Conductivity (mS/cm)	Eh (mV)	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
1726 0	34.42	7.0	7.10	1.19	~~-7.10~~	0.72	28.3	500
4	34.42	8.4	7.07	1.17	-127.8	0.47	29.0	500
8	34.61	9.6	7.07	1.17	-143.9	0.40	20.3	400
13	34.52	9.0	7.06	1.17	-152.	0.34	16.9	400
17	34.49	8.7	7.00	1.16	-158	0.26	12.6	300
21	34.40	8.1	7.05	~~161~~ 1.16	-161	0.27	10.94	300
25	34.39	8.2	7.05	1.17	-164	0.26	9.43	300

End Purge Time: 17:52

Water sample:
Time collected: 17:55

Total volume of purged water removed: ______

Physical appearance at start

Color Clear

Odor Sulfur

Sheen/Free Product None

Physical appearance at sampling

Color ______

Odor ______

Sheen/Free Product ______

Analytical Parameters:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Lab
Na, K	Plastic	1	No	HNO3	ALS
Br, Cl	Plastic	1	No	None	ALS

O'BRIEN & GERE

Low Flow Ground Water Sampling Log

Date 2/1/2013 | Personnel P. Freyer, L. Reid | Weather 20°F, 15-20 mph, Lt snow

Site Name Powerex | Evacuation Method Monsoon ~~Grundfos~~ Pump | Well # PT-MW-4

Site Location Auburn, NY | Sampling Method Monsoon ~~Grundfos~~ Pump | Project # 49543.004.402

Well information:

Depth of Well * 57.37 ft.

Depth to Water * 33.46 ft.

Length of Water Column 23.91 ft.

* Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

☐ (Other, Specify)

Start Purge Time: 15:15

indicate units

Elapsed Time	Depth To Water (ft bmp)	Temperature (Celsius)	pH (SU)	Specific Conductivity ( )	Eh (mV)	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
0	33.45						10.63	300
5	33.55							
10	34.05	6.6	6.81	1.40	-88	5.1	11.90	350
20	34.72	8.6	6.83	1.42	-99.5	0.52	8.61	420
23	35.13	6.1	6.82	1.43	-108.9	0.40	7.74	280
28	35.28	9.8	6.82	1.40	-115.8	0.29	8.32	420
34	35.65	7.7	6.86	1.43	-117.4	0.31	9.60	200
40	35.90	8.7	6.81	1.42	-123.6	0.24	7.68	200
45	35.90	6.9	6.81	1.44	-124.4	0.54	6.78	180
55	35.87	6.9	6.78	1.42	-124.3	0.40	6.87	150
58	35.88	~~8~~ 7.5	6.79	1.48	-128.9	0.31	6.13	220
61	35.93	7.9	6.77	1.45	-129.7	0.25	6.17	280

Intermittent Flow

End Purge Time: 16:19

Water sample:

Time collected: 16:20

Total volume of purged water removed: 4.5 gal

Physical appearance at start

Color Clear w/dark tint

Odor Sulfur

Sheen/Free Product None

Physical appearance at sampling

Color Clear

Odor Sulfur

Sheen/Free Product None

Analytical Parameters:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Lab
Na, K	Plastic	1	No	HNO3	ALS
Br, Cl	Plastic	1	No	None	ALS

O'BRIEN & GERE

Low Flow Ground Water Sampling Log

Date	2/1/2013	Personnel	P. Freyer, L. Reid	Weather	20° F, 15-20 mph wind, Lt snow
Site Name	Powerex	Evacuation Method	Grundfos Pump	Well #	PT-MW-5
Site Locatior	Auburn, NY	Sampling Method	Grundfos Pump	Project #	49543.004.402

Well information:

Pump # FA00134 Controller # FA00137

Depth of Well * 56.99 ft.

Depth to Water * 31.48 ft.

Length of Water Column 25.51 ft.

* Measurements taken from

X	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

Start Purge Time: 12:18

indicate units

Elapsed Time	Depth To Water (ft bmp)	Temperature (Celsius)	pH (SU)	Specific Conductivity (mS/cm)	Eh (mV)	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
0	31.44	8	6.98	0.96	44.8	0.51	3.10	600
6	31.68	6.5	6.84	0.96	25.1	0.44	2.46	200
10	31.70	8.7	6.86	0.96	2.4	2.8 (%)	2.22	250
15	31.71	8.5	6.85	0.96	-12.7	0.29 [illegible]	2.82	250
21	31.73	8.4	6.85	0.97	-26.8	0.41	2.41	225
26	31.75	9.0	6.86	0.97	-3[illegible]	0.28	2.48	225
34	31.76	9.3	6.86	0.97	-50.9	0.24	2.56	225
39	31.76	9.6	6.86	0.97	-63.9	0.20	2.19	215
45	31.77	9.2	6.86	0.97	-71.2	0.19	2.11	215
50	31.78	9.2	6.86	0.97	-78.1	0.17	1.82	215
55	31.79	8.6	6.86	0.97	-86.4	0.20	2.01	215

Sun In, [illegible]

End Purge Time: 13:18

Water sample:

Time collected: 13:20 (X-1)

Total volume of purged water removed: 4 gal

Physical appearance at start

Color Clear

Odor None

Sheen/Free Product None

Physical appearance at sampling

Color Clear

Odor None

Sheen/Free Product None

Analytical Parameters:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Lab
Na, K	Plastic	1	No	HNO3	ALS
Br, Cl	Plastic	1	No	None	ALS

O'BRIEN & GERE

Low Flow Ground Water Sampling Log

Date	2/1/2013	Personnel	P. Freyer, L. Reid	Weather	Mostly Cloudy, snowing ~25°F
Site Name	Powerex	Evacuation Method	Grundfos Pump	Well #	**PT-MW-6**
Site Locatior	Auburn, NY	Sampling Method	Grundfos Pump	Project #	49543.004.402

Well information:

Controller # FA00136 / Pump # FA00135

Depth of Well * 56.42 ft.

Depth to Water * 31.45 ft.

Length of Water Column 24.97 ft.

* Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

☐ (Other, Specify)

Start Purge Time: 12:20

indicate units

Elapsed Time	Depth To Water (ft bmp)	Temperature (Celsius)	pH (SU)	Specific Conductivity ( )	Eh (mV)	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
—	—	—	Pump failure unable to induce flow —					—
Attempting to purge w/ pump FA00134 / controller FA00137								
~~1420~~0	31.60	7.8	7.04	1.08	-47.7	0.27	7.73	220
5	31.74	9.3	7.00	1.08	-48.0	0.26	5.51	240
10	31.74	8.4	7.00	1.09	-51.5	0.23	5.21	230
13	31.74	8.9	6.98	1.10	-53.5	0.21	5.21	240
18	31.74	8.7	6.97	1.11	-56.7	0.18	4.02	240
23	31.74	7.8	6.97	1.12	-57.2	0.18	3.13	230
26	31.74	7.8	6.97	1.14	-57.6	0.17	2.61	230
30	31.74	7.6	6.97	1.14	-57.0	0.17	2.42	230

1420

End Purge Time: 14:51

Water sample:

Time collected: 14:55

Total volume of purged water removed: 2.5 gal

Physical appearance at start

Color Clear

Odor None

Sheen/Free Product None

Physical appearance at sampling

Color Clear

Odor None

Sheen/Free Product None

Analytical Parameters:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Lab
Na, K	Plastic	1	No	HNO3	ALS
Br, Cl	Plastic	1	No	None	ALS

Note. Pump FA00135 failed current overload.

O'BRIEN & GERE

Low Flow Ground Water Sampling Log

Date	2/1/2013	Personnel	P. Freyer, L. Reid	Weather	Mostly Sunny, breezy, ~20°F
Site Name	Powerex	Evacuation Method	Grundfos Pump	Well #	PT-MW-7
Site Locatior	Auburn, NY	Sampling Method	Grundfos Pump	Project #	49543.004.402

Well information: Pump FA00134 Controller FA-00137

Depth of Well * 60.78 ft.

Depth to Water * 35.14 ft.

Length of Water Column 25.64 ft.

* Measurements taken from

☒ Top of Well Casing

☐ Top of Protective Casing

☐ (Other, Specify)

Start Purge Time: 1618

indicate units

Elapsed Time	Depth To Water (ft bmp)	Temperature (Celsius)	pH (SU)	Specific Conductivity (ms/cm)	Eh (mV)	Dissolved Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min)
0	35.14	7.1	6.92	1.43	-118.2	0.82	8.51	700
5	36.10	6.9	6.80	1.44	-120.0	0.51	7.47	270
10	36.09	6.9	6.76	1.44	-131.9	0.37	6.66	PT 160
15	36.09	7.2	6.75	1.44	-138.4	0.32	5.21	160
20	36.08	6.5	6.75	1.44	-142.1	0.27	1.5	160
25	36.07	6.6	6.75	1.45	-145.3	0.27	1.6	160
30	36.10	6.8	6.74	1.44	-146.6	0.23	0.8	170
35	36.12	6.9	6.75	1.47	-152.4	0.36	5.61	190
40	36.14	6.5	6.74	1.46	-151.9	0.32	5.44	220
45	36.16	6.7	6.73	1.45	-152.9	0.24	5.21	220
50	36.18	6.8	6.74	1.48	-157.0	0.20	5.24	230
53	36.18	6.8	6.74	1.47	-158.3	0.20	5.14	230

End Purge Time: 1712

Water sample:

Time collected: 1715

Total volume of purged water removed: ~4 gal

Physical appearance at start

Color Clear

Odor strong sulfur/chemical odor

Sheen/Free Product None

Physical appearance at sampling

Color Clear

Odor ~~st~~ sulfur/chemical

Sheen/Free Product None

Analytical Parameters:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Lab
Na, K	Plastic	1	No	HNO3	ALS
Br, Cl	Plastic	1	No	None	ALS

ATTACHMENT F

LABORATORY ANALYTICAL RESULTS

Sample Description: FB-1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941964
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAFB1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 19:06	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: FB-2 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941965
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAFB2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 19:14	Elizabeth J Marin	1

---

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-2-1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941966
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 11:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI21

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 19:22	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-2-9 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941967
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 19:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI29

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 19:45	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-2-18 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941968
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 05:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA218

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 19:53	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-2-23 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941969
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 09:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA223

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:01	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-3-1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941970
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 19:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI31

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:16	Elizabeth J Marin	1

---

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-3-9 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941971
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 11:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI39

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:24	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-3-18 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941972
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 05:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA318

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:32	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-3-23 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941973
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 09:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA323

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:40	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-4-1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941974
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 11:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI41

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles		**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium		7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:48	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-4-11 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941975
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 21:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA411

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 20:56	Elizabeth J Marin	1

---

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-4-18 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941976
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 05:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA418

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		**ug/l**	**ug/l**	**ug/l**	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:03	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-4-23 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941977
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 09:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA423

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:11	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-4-32 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941978
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 20:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA432

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:19	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-5-1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941979
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 11:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI51

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:27	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-5-11 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941980
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 21:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA511

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:42	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-5-18 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941981
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 05:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA518

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:50	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-5-23 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941982
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 09:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA523

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 21:58	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-5-32 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941983
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 20:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA532

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130420004A	02/11/2013 22:06	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941984
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GADU1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 18:36	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: DUP2 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941985
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GADU2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 19:13	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-6-1 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941986
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 11:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI61

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 19:21	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-6-9 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941987
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 19:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAI69

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 19:29	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-6-18 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941988
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 05:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA618

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 19:37	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-6-23 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941989
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 09:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA623

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 19:55	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-6-32 Grab Groundwater
Auburn, NY

LLI Sample # WW 6941990
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 20:00

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GA632

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:03	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: Tank-Start Grab Groundwater
Auburn, NY

LLI Sample # WW 6941991
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/29/2013 08:15

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GATAS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 18:29	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: Tank-End Grab Groundwater
Auburn, NY

LLI Sample # WW 6941992
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/30/2013 03:30

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GATAE

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:11	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-1-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6941993
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/23/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAIW1

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles		**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium		7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:19	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-2-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6941994
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/23/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAIW2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		**ug/l**	**ug/l**	**ug/l**	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:26	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-3-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6941995
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/23/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAIW3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:34	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-5-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6941997
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/23/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAIW5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:42	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-INJ-6-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6941998
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/23/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAIW6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:50	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-MW-7-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6941999
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/22/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAMW1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 20:58	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-MW-3-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6942001
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/22/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAMW3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 21:05	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-MW-4-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6942002
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/22/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAMW4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 21:32	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-MW-5-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6942003
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/22/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAMW5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 21:39	Elizabeth J Marin	1

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*=This limit was used in the evaluation of the final result

Sample Description: PT-MW-6-BKG Grab Groundwater
Auburn, NY

LLI Sample # WW 6942004
LLI Group # 1366352
Account # 11920

Project Name: Helium as Tracer Gas

Collected: 01/22/2013

Submitted: 02/01/2013 09:15
Reported: 02/20/2013 15:55

GeoSyntec Consultants
Suite 2
130 Research Lane
Guelph ON N1G 5G3

GAMW6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC Volatiles	**SW-846 8015B modified**		ug/l	ug/l	ug/l	
12869	Dissolved Helium	7440-59-7	N.D.	30	30	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12869	Dissolved Helium	SW-846 8015B modified	1	130430029A	02/12/2013 21:47	Elizabeth J Marin	1

*=This limit was used in the evaluation of the final result

1

Environmental Analysis Request/Chain of Custody

eurofins | **Lancaster Laboratories**

For Eurofins Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964-2004
Instructions on reverse side correspond with circled numbers.

COC #320793

① Client Information

Client: Geosyntec
Acct. #:
Project Name/#: @ Auburn
PWSID #:
Project Manager: Mark Watling
P.O. #: TR0344A.02
Sampler: Dave Liefl
Quote #:
Name of state where samples were collected: New York

For Lab Use Only
FSC:
SCR#: 134233

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

④ Matrix

Sediment ☐ Soil ☐
Water: Potable ☐ NPDES ☐ Ground ☒ Surface ☐
Other:

⑤ Analysis Requested

Preservation Codes: none

② Sample Identification ③ ⑥ Remarks

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Other:	Total # of Containers	Helium										Remarks
									none										
FB-1	Jan29	/	X			X		2	X										
FB-2	Jan30	/	↓			↓		↓	X										
PT-INJ-2-1	Jan29	11:00							X										
↓ -2-9	↓	19:00							X										
-2-18	Jan30	~~04:00~~ 0500							X										collection time 0500 per MW 2/14/13 nn
-2-23	↓	09:00							X										
-2-32		19:00							X										-not Rec'd @ LLI nn 2/1/13
PT-INJ-3-1	Jan29	11:00							X										
↓ 3-9	↓	19:00							X										
3-18	Jan30	~~04:00~~ 0500							X										collection time 0500 per MW 2/14/13 nn

⑦ Turnaround Time (TAT) Requested (please circle)

[✓ Standard] Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: ____________________

E-mail address: ____________________

⑧ Data Package Options (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

⑨

Relinquished by	Date	Time	Received by	Date	Time
	1-21-13	1320			
Luana J.	Jan 31 2013	14:00			
			Pat G	2/1/13	0915

EDD Required? Yes No
If yes, format: ____________________

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS X FedEx ____ Other ____

Temperature upon receipt 3.0-5.4 °C

Issued by Dept. 40 Management 7044.02

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client.

2

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964 - 2004
Instructions on reverse side correspond with circled numbers.

COC #320795

① **Client Information**

Client:
Acct. #:
Project Name/#: SAME AS PAGE 1
PWSID #:
Project Manager:
P.O. #:
Sampler:
Quote #:
Name of state where samples were collected:

④ **Matrix**

☐ Sediment ☐ Soil
☒ Ground ☐ Potable
☐ Surface ☐ NPDES
Water
Other:

Total # of Containers

⑤ **Analysis Requested**

Preservation Codes: none

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

⑥ **Remarks**

② Sample Identification	Collected Date	Collected Time	③ Grab	Composite	Soil	Water	Other:	Total # of Containers	Helium	Remarks
PT-INJ-3-23	Jan 30	09:00	X			X		2	X	
↓ 3-32	↓	19:00	↓			↓		↓	X	not rec'd cu mm 2/1/13
PT-INJ-4-1	Jan 29	11:00							X	
4-11	↓	~~19:00~~*							X	*collection time = 2100 per MW mm 2/14/13
4-18	Jan 30	~~04:00~~*							X	*collection time = 0500 per MW 2/14/13 mm
4-23		09:00							X	
↓ 4-32	↓	~~19:00~~*							X	*collection time = 2000 per MW 2/14/13 mm
PT-INJ-5-1	Jan 29	11:00							X	
5-11	↓	~~19:00~~*							X	*collection time = 2100 per MW 2/14/13 mm
↓ 5-18	Jan 30	~~04:00~~*	↓			↓		↓	X	*collection time = 0500 per MW 2/14/13 mm

⑦ **Turnaround Time (TAT) Requested** (please circle)
[✓ Standard] Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

E-mail address:

⑧ **Data Package Options** (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

⑨

Relinquished by	Date	Time	Received by	Date	Time
	Jan 31 2013	14:00			
			Pat Gl	2/1/13	0915

EDD Required? Yes No
If yes, format:

Relinquished by Commercial Carrier:
UPS X FedEx Other

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Temperature upon receipt 3.0-5.4 °C

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3

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964 - 2004
Instructions on reverse side correspond with circled numbers.

COC #320794

① Client Information

Client:
Acct. #:
Project Name/#: SAME AS PG 1
PWSID #:
Project Manager:
P.O. #:
Sampler:
Quote #:
Name of state where samples were collected:

④ Matrix

☐ Sediment
☐ Soil
Water: ☒ Ground ☐ Surface ☐ Potable ☐ NPDES
Other:

⑤ Analysis Requested

Preservation Codes: none

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO$_3$ B=NaOH
S=H$_2$SO$_4$ O=Other

② Sample Identification

Sample Identification	Collected Date	Collected Time	③ Grab	Composite	Soil	Water	Other	Total # of Containers	Helium	⑥ Remarks
PT-INJ-5-23	Jan 30	09:00	X			X		2	X	
5-32	↓	20:00	X						X	
DUP1	Jan 30	/	X						X	
DUP2	Jan 30	/	X			↓		↓	X	
PT-INJ-2-3	Jan 29	13:00								HOLD
2-5		15:00								
2-7		17:00								
2-11		21:00								
2-13	↓	23:00								
2-16	Jan 30	02:00	↓			↓		↓		↓

⑦ Turnaround Time (TAT) Requested (please circle)

[✓ Standard] Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: ______

E-mail address: ______

⑧ Data Package Options (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

⑨

Relinquished by	Date	Time	Received by	Date	Time
Luana Jo	Jan 31 2013	14:00			
			Pat G	2/1/13	0915

EDD Required? Yes No
If yes, format: ______

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS X FedEx ____ Other ____

Temperature upon receipt 3.0-5.4 °C

Eurofins Lancaster Laboratories, Inc. • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
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10

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964-2004
Instructions on reverse side correspond with circled numbers.

COC #322359

① **Client Information**

Client:
Acct. #:
Project Name/#: SAME AS PG 1
PWSID #:
Project Manager:
P.O. #:
Sampler:
Quote #:
Name of state where samples were collected:

④ **Matrix**: ☐ Sediment ☐ Soil; Water: ☒ Ground ☐ Surface ☐ Potable ☐ NPDES; Other:

⑤ **Analysis Requested** — Preservation Codes

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

⑥ **Remarks**

② Sample Identification	Collected Date	Collected Time	③ Grab	Composite	Soil	Water	Other:	Total # of Containers	Helium	⑥ Remarks
PT-INJ-5-31	Jan 30	~~20:00~~ *	X			X		2	HOLD	*collection time = 1900 per MW 2/4/13 [illegible]
↓ 5-33	Jan 31	08:00	↓						↓	
PT-INJ-6-1	Jan 29	11:00							X	
6-3	↓	13:00							HOLD	
6-5		15:00							↓	
6-7		17:00								
6-9		19:00							X	
6-11		21:00							HOLD	
6-13	↓	23:00							HOLD	
6-16	Jan 30	02:00							↓	

⑦ **Turnaround Time (TAT) Requested** (please circle)
[✓ Standard] Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed: ____________

E-mail address: ____________

⑧ **Data Package Options** (circle if required)
Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	31-Jan 2013	14:00			
			Pat [illegible]	2/1/13	0915

⑨

EDD Required? Yes No
If yes, format: ____________

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS X FedEx ____ Other ____

Temperature upon receipt 3.0-5.4 °C

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11

Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964-2004
Instructions on reverse side correspond with circled numbers.

COC #322360

① **Client Information**

Client:
Acct. #:
Project Name/#:
PWSID #:
Project Manager:
P.O. #:
Sampler:
Quote #:
Name of state where samples were collected:

④ **Matrix**
Sediment ☐ Soil ☐
Ground ☒ Potable ☐ Water
Surface ☐ NPDES ☐
Other:

⑤ **Analysis Requested**
Preservation Codes

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl **T**=Thiosulfate
N=HNO_3 **B**=NaOH
S=H_2SO_4 **O**=Other

② Sample Identification	Collected Date	Collected Time	③ Grab	Composite	Soil	Water		Other:	Total # of Containers	helium										⑥ Remarks
										None										
PT-INJ-6-18	Jan 30	~~04:00~~*	X			W			2	X										*Collection time=0500 per MW 2/1/13 MM
6-20		06:00								HOLD										
6-23		09:00								X										
6-24		10:00								HOLD										
6-25		11:00																		
6-26		12:00																		
6-27		13:00																		
6-28		15:00																		
6-29		16:00																		
6-30		17:00																		

⑦ **Turnaround Time (TAT) Requested** (please circle)
[✓ Standard] Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

E-mail address:

⑧ **Data Package Options** (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

Relinquished by	Date	Time	Received by	Date	Time
	Jan 31 2013	14:00			
			Pat Gh	2/1/13	0915

⑨

EDD Required? Yes No
If yes, format:

Relinquished by Commercial Carrier:
UPS X FedEx Other

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Temperature upon receipt 3.0-5.4°C

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12

Environmental Analysis Request/Chain of Custody

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For Eurofins Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964-2004
Instructions on reverse side correspond with circled numbers.

COC #322361

① **Client Information**

Client:
Acct. #:
Project Name/#: SAME AS PG 1
PWSID #:
Project Manager:
P.O. #:
Sampler:
Quote #:
Name of state where samples were collected:

④ **Matrix**
☐ Sediment ☐ Soil
☒ Ground ☐ Potable (Water)
☐ Surface ☐ NPDES
Other:

⑤ **Analysis Requested**
Preservation Codes

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

② Sample Identification	Collected Date	Collected Time	③ Grab	Composite	Soil	Water	Other:	Total # of Containers	Helium										⑥ Remarks
PT-INJ-6-31	Jan 30	~~17:00~~*	X			X		2	HOLD										collection time = 1900 per MW 2/4/13 mm
↓ 6-32	↓	~~19:00~~*	↓			↓		↓	X										collection time = 2000 per MW 2/4/13 mm
↓ 6-33	Jan 31	08:00	↓			↓		↓	HOLD										
tank-start	Jan 29	08:15	↓			↓		↓	X										
tank-mid	↓	18:15	↓			↓		↓	HOLD										
tank-~~b~~ end	Jan 30	03:30	↓			↓		↓	X										

⑦ **Turnaround Time (TAT) Requested** (please circle)
[✓ Standard] Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

E-mail address:

Relinquished by	Date	Time	Received by	Date	Time ⑨
	Jan 31 2013	14:00			
				2/1/13	0915

⑧ **Data Package Options** (circle if required)

Type I (Validation/non-CLP) Type VI (Raw Data Only)
Type III (Reduced non-CLP) TX TRRP-13
Type IV (CLP SOW) MA MCP CT RCP

EDD Required? Yes No
If yes, format:

Site-Specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate sample volume.)

Relinquished by Commercial Carrier:
UPS X FedEx Other

Temperature upon receipt 3.0-5.4 °C

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Environmental Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

For Lancaster Laboratories use only
Acct. # 11920 Group # 1366352 Sample # 6941964-2004

COC #

Please print. Instructions on reverse side correspond with circled numbers.

For Lab Use Only
FSC:
SCR#:

① Client: Geosyntec
Acct. #: 11920
Project Name/#: Auburn
PWSID #: x
Project Manager: Mark Watling
P.O.#: TR0344A.02
Sampler: Dave Liefl
Quote #:
Name of state where samples were collected: NY

Matrix ④: ☐ Sediment ☐ Soil ☒ Ground ☐ Surface ☐ Potable ☐ NPDES Water; Other:

⑤ **Analyses Requested**: Helium
Preservation Codes

Preservation Codes
H=HCl T=Thiosulfate
N=HNO3 B=NaOH
S=H2SO4 O=Other

⑥ Temperature of samples upon receipt (if requested)

② Sample Identification	Date Collected	Time Collected	③ Grab	Composite	Soil	Water	Other	Total # of Containers	Helium	Remarks
PT-INJ-1-BKG	1/23/13		x			x			x	
PT-INJ-2-BKG										additional
PT-INJ-3-BKG										samples received
PT-INJ-5-BKG										not listed on
PT-INJ-6-BKG										original COC but
PT-MW-7-BKG										to be analyzed
PT-MW-3-BKG										per MW.
PT-MW-4-BKG										mm 3/6/13
PT-MW-5-BKG										*⑧
PT-MW-6-BKG	✓		✓			✓			✓	

⑦ **Turnaround Time Requested** (TAT) (please circle): Standard Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone E-mail
Phone #:
E-mail address:

⑧ **Data Package Options** (please circle if required)
Type I (Validation/non-CLP) MA MCP CT RCP
Type III (Reduced non-CLP)
Type IV (CLP SOW)
Type VI (Raw Data Only)
TX TRRP-13

EDD Required? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No
(if yes, indicate QC sample and submit triplicate sample volume)

⑨

Relinquished by:	Date	Time	Received by:	Date	Time
M Moeller 3/6/13			M Moeller 3/6/13		
			mm for: P. Engle	2/1/13	0915

mm 3/6/13

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.

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*⑧ sample PT-INJ-4-BKG also rec'd but 1 vial broken & other vial had septum loose. Do not analyze per MW mm 3/6/13

Report of Analysis

Client Sample ID: FB-1
Lab Sample ID: JB28084-1
Matrix: AQ - Field Blank Water
Project: GE Powerex, Auburn, NY

Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.013 U	0.50	0.013	mg/l	1	02/12/13 11:50	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: FB-2
Lab Sample ID: JB28084-2
Matrix: AQ - Field Blank Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.013 U	0.50	0.013	mg/l	1	02/12/13 12:38	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-1
Lab Sample ID: JB28084-3
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	24.1	5.0	0.13	mg/l	10	02/13/13 12:37	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-4
Lab Sample ID: JB28084-4
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	386	100	2.7	mg/l	200	02/13/13 13:01	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-2-7		
Lab Sample ID:	JB28084-5	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	421	100	2.7	mg/l	200	02/13/13 13:25	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-10
Lab Sample ID: JB28084-6
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	425	100	2.7	mg/l	200	02/13/13 13:49	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-18
Lab Sample ID: JB28084-7
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	425	100	2.7	mg/l	200	02/13/13 14:13	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-19
Lab Sample ID: JB28084-8
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	354	100	2.7	mg/l	200	02/13/13 14:37	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-25
Lab Sample ID: JB28084-9
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	65.3	20	0.53	mg/l	40	02/13/13 15:01	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-2-31		
Lab Sample ID:	JB28084-10	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	37.2	10	0.27	mg/l	20	02/13/13 15:25	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-3-1		
Lab Sample ID:	JB28084-11	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	63.6	20	0.53	mg/l	40	02/13/13 16:37	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-3-7
Lab Sample ID: JB28084-12
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	411	100	2.7	mg/l	200	02/13/13 17:01	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-3-10
Lab Sample ID: JB28084-13
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	422	100	2.7	mg/l	200	02/13/13 17:25	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-3-18
Lab Sample ID: JB28084-14 **Date Sampled:** 01/30/13
Matrix: AQ - Water **Date Received:** 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	390	100	2.7	mg/l	200	02/13/13 17:49	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-3-19
Lab Sample ID: JB28084-15
Matrix: AQ - Water
Project: GE Powerex, Auburn, NY

Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	226	50	1.3	mg/l	100	02/13/13 18:13	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-3-25		
Lab Sample ID:	JB28084-16	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	63.4	20	0.53	mg/l	40	02/13/13 18:37	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-3-31
Lab Sample ID: JB28084-17
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	38.8	10	0.27	mg/l	20	02/13/13 19:01	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-4-1		
Lab Sample ID:	JB28084-18	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.13 B	0.50	0.013	mg/l	1	02/12/13 20:36	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-4-8
Lab Sample ID: JB28084-19
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	134	35	0.93	mg/l	70	02/13/13 19:25	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-4-10		
Lab Sample ID:	JB28084-20	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	153	40	1.1	mg/l	80	02/13/13 19:49	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-4-14
Lab Sample ID: JB28084-21
Matrix: AQ - Water
Project: GE Powerex, Auburn, NY

Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	188	50	1.3	mg/l	100	02/13/13 22:36	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-4-17
Lab Sample ID: JB28084-22
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	249	75	2.0	mg/l	150	02/13/13 23:24	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-4-18
Lab Sample ID: JB28084-23
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	263	75	2.0	mg/l	150	02/13/13 23:48	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-4-19		
Lab Sample ID:	JB28084-24	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	161	40	1.1	mg/l	80	02/14/13 00:12	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-4-32		
Lab Sample ID:	JB28084-25	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	54.5	15	0.40	mg/l	30	02/14/13 00:36	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-5-1
Lab Sample ID: JB28084-26
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	215	50	1.3	mg/l	100	02/14/13 01:47	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-5-3		
Lab Sample ID:	JB28084-27	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	406	100	2.7	mg/l	200	02/14/13 02:11	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-5-8			
Lab Sample ID:	JB28084-28		**Date Sampled:**	01/29/13
Matrix:	AQ - Water		**Date Received:**	02/05/13
			Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY			

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	418	100	2.7	mg/l	200	02/14/13 02:35	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-5-11
Lab Sample ID: JB28084-29
Matrix: AQ - Water
Date Sampled: 01/29/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	415	100	2.7	mg/l	200	02/14/13 02:59	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-5-16
Lab Sample ID: JB28084-30
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	421	100	2.7	mg/l	200	02/14/13 03:23	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-5-18
Lab Sample ID: JB28084-31
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	419	100	2.7	mg/l	200	02/14/13 03:47	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-5-19		
Lab Sample ID:	JB28084-32	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	286	100	2.7	mg/l	200	02/14/13 04:11	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-5-32		
Lab Sample ID:	JB28084-33	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	27.7	7.5	0.20	mg/l	15	02/14/13 04:35	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-6-1			
Lab Sample ID:	JB28084-34		**Date Sampled:**	01/29/13
Matrix:	AQ - Water		**Date Received:**	02/05/13
			Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY			

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	21.3	5.0	0.13	mg/l	10	02/14/13 04:59	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-6-7		
Lab Sample ID:	JB28084-35	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	326	100	2.7	mg/l	200	02/14/13 05:23	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-6-9		
Lab Sample ID:	JB28084-36	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	384	100	2.7	mg/l	200	02/14/13 06:34	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-6-18
Lab Sample ID: JB28084-37
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	368	100	2.7	mg/l	200	02/14/13 06:58	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-6-19		
Lab Sample ID:	JB28084-38	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	390	100	2.7	mg/l	200	02/14/13 12:12	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	PT-INJ-6-32		
Lab Sample ID:	JB28084-39	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	80.6	20	0.53	mg/l	40	02/14/13 13:00	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-6-23
Lab Sample ID: JB28084-40
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	150	40	1.1	mg/l	80	02/15/13 02:09	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	DUP1		
Lab Sample ID:	JB28084-41	**Date Sampled:**	01/30/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	148	40	1.1	mg/l	80	02/15/13 02:33	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: DUP2
Lab Sample ID: JB28084-42
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	430	100	2.7	mg/l	200	02/15/13 02:57	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	TANK-START		
Lab Sample ID:	JB28084-43	**Date Sampled:**	01/29/13
Matrix:	AQ - Water	**Date Received:**	02/05/13
		Percent Solids:	n/a
Project:	GE Powerex, Auburn, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	424	100	2.7	mg/l	200	02/15/13 03:21	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: TANK-END
Lab Sample ID: JB28084-44
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	428	100	2.7	mg/l	200	02/15/13 03:45	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-3
Lab Sample ID: JB28084-45
Matrix: AQ - Water
Date Sampled: 01/22/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.040 B	0.50	0.013	mg/l	1	02/14/13 16:11	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-3
Lab Sample ID: JB28084-45R
Matrix: AQ - Water
Date Sampled: 01/22/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chloride [a]	132	2.0	0.011	mg/l	1	03/01/13 17:47	NP	EPA 300/SW846 9056A

(a) Analysis done out of holding time as per client request. Initial analysis within holding time, but over verified calibration range, was 134 mg/l.

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-4
Lab Sample ID: JB28084-46
Matrix: AQ - Water
Date Sampled: 01/22/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.028 B	0.50	0.013	mg/l	1	02/14/13 16:35	NP	EPA 300/SW846 9056A
Chloride	214	2.0	0.011	mg/l	1	02/13/13 11:48	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-5
Lab Sample ID: JB28084-47
Matrix: AQ - Water
Date Sampled: 01/22/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.12 B	0.50	0.013	mg/l	1	02/14/13 16:59	NP	EPA 300/SW846 9056A
Chloride	52.1	2.0	0.011	mg/l	1	02/13/13 12:12	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-6
Lab Sample ID: JB28084-48
Matrix: AQ - Water
Date Sampled: 01/22/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.065 B	0.50	0.013	mg/l	1	02/14/13 17:23	NP	EPA 300/SW846 9056A
Chloride	77.2	2.0	0.011	mg/l	1	02/13/13 12:36	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-7
Lab Sample ID: JB28084-49
Matrix: AQ - Water
Date Sampled: 01/22/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.048 B	0.50	0.013	mg/l	1	02/14/13 17:47	NP	EPA 300/SW846 9056A
Chloride	200	2.0	0.011	mg/l	1	02/13/13 13:00	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-1-BKG
Lab Sample ID: JB28084-175
Matrix: AQ - Water
Date Sampled: 01/23/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.056 B	0.50	0.013	mg/l	1	02/14/13 18:11	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-2-BKG
Lab Sample ID: JB28084-176
Matrix: AQ - Water
Date Sampled: 01/23/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.068 B	0.50	0.013	mg/l	1	02/14/13 18:35	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-3-BKG
Lab Sample ID: JB28084-177
Matrix: AQ - Water
Date Sampled: 01/23/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.071 B	0.50	0.013	mg/l	1	02/14/13 19:46	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-4-BKG
Lab Sample ID: JB28084-178
Matrix: AQ - Water
Date Sampled: 01/23/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.063 B	0.50	0.013	mg/l	1	02/14/13 20:10	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-5-BKG
Lab Sample ID: JB28084-179
Matrix: AQ - Water
Date Sampled: 01/23/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.12 B	0.50	0.013	mg/l	1	02/14/13 20:34	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-INJ-6-BKG
Lab Sample ID: JB28084-180
Matrix: AQ - Water
Date Sampled: 01/23/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.11 B	0.50	0.013	mg/l	1	02/14/13 20:58	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-3-1
Lab Sample ID: JB28084-181
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	134	30	0.80	mg/l	60	02/15/13 10:42	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-4-1
Lab Sample ID: JB28084-182
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	0.093 B	0.50	0.013	mg/l	1	02/14/13 22:34	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-5-1
Lab Sample ID: JB28084-183
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	7.6	1.5	0.040	mg/l	3	02/15/13 11:06	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: PT-MW-6-1
Lab Sample ID: JB28084-184
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	180	50	1.3	mg/l	100	02/15/13 11:29	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

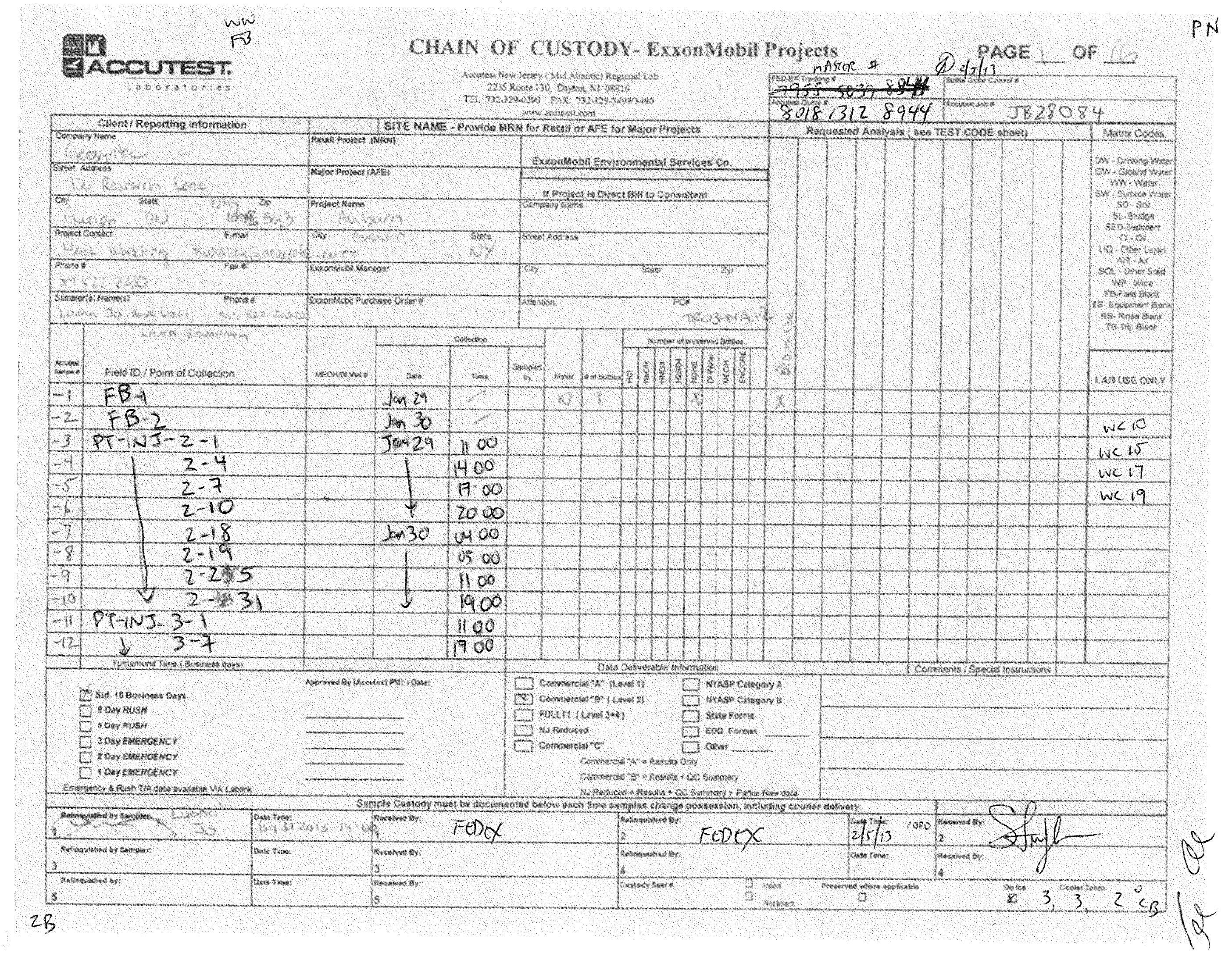
Client Sample ID: PT-MW-7-1
Lab Sample ID: JB28084-185
Matrix: AQ - Water
Date Sampled: 01/30/13
Date Received: 02/05/13
Percent Solids: n/a
Project: GE Powerex, Auburn, NY

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Bromide	2.3	0.50	0.013	mg/l	1	02/15/13 00:33	NP	EPA 300/SW846 9056A

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL



WW
FB

PN

ACCUTEST
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 1 OF 16

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX 732-329-3499/3480
www.accutest.com

MASTER #
① 2/5/13

FED-EX Tracking #: ~~7955 5039 8844~~
Accutest Quote #: 8018 1312 8944
Bottle Order Control #:
Accutest Job #: JB28084

Client / Reporting Information

Company Name: Geosyntec
Street Address: 130 Research Lane
City: Guelph State: ON Zip: N1G ~~5G3~~ 5G3
Project Contact: Mark Watling E-mail: mwatling@geosyntec.com
Phone #: 519 822 2230 Fax #:
Sampler(s) Name(s): Luana Jo, Dave Lieft, Laura Bowman Phone #: 519 822 2230

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN):
Major Project (AFE):
Project Name: Auburn
City: Auburn State: NY
ExxonMobil Manager:
ExxonMobil Purchase Order #:

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name:
Street Address:
City: State: Zip:
Attention: PO#: TRO3HAU2

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bromide	LAB USE ONLY
-1	FB-1		Jan 29	/		W	1					X				X	
-2	FB-2		Jan 30	/													WC10
-3	PT-INJ-2-1		Jan 29	11 00													WC15
-4	↓ 2-4		↓	14 00													WC17
-5	2-7			17 00													WC19
-6	2-10			20 00													
-7	2-18		Jan 30	04 00													
-8	2-19		↓	05 00													
-9	2-25			11 00													
-10	2-31			19 00													
-11	PT-INJ-3-1			11 00													
-12	↓ 3-7			17 00													

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

☒ Std. 10 Business Days
☐ 8 Day RUSH
☐ 5 Day RUSH
☐ 3 Day EMERGENCY
☐ 2 Day EMERGENCY
☐ 1 Day EMERGENCY
Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM) / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☒ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

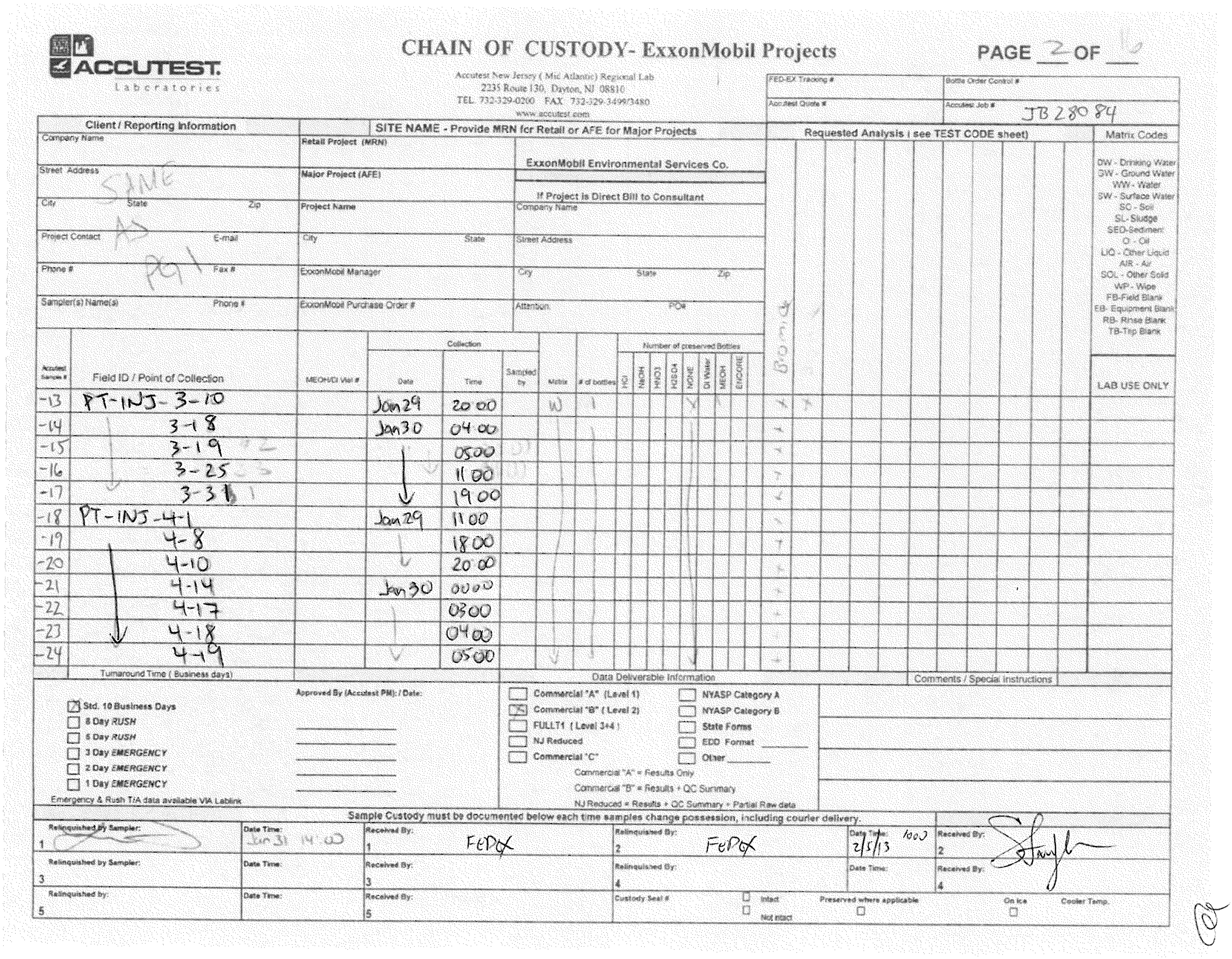
Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1 Luana Jo Date Time: Jan 31 2013 14:00 Received By: 1 FEDEX
Relinquished By: 2 FEDEX Date Time: 2/5/13 1000 Received By: 2
Relinquished by Sampler: 3 Date Time: Received By: 3
Relinquished By: 4 Date Time: Received By: 4
Relinquished by: 5 Date Time: Received By: 5
Custody Seal # ☐ Intact ☐ Not intact Preserved where applicable ☐ On Ice ☒ Cooler Temp. 3, 3, 2 °C

2B

JB28084: Chain of Custody
Page 1 of 19



ACCUTEST Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 2 OF 16

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www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB 28084

Client / Reporting Information
Company Name
Street Address SAME
City State Zip AS
Project Contact E-mail PG 1
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects
Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
O - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Boron		LAB USE ONLY
-13	PT-INJ-3-10		Jan29	2000		W	1					✓				X	X	
-14	3-18		Jan30	0400		↓	↓					↓				X		
-15	3-19		↓	0500												X		
-16	3-25			1100												X		
-17	3-31			1900												X		
-18	PT-INJ-4-1		Jan29	1100												X		
-19	4-8		↓	1800												X		
-20	4-10			2000												X		
-21	4-14		Jan30	0000												X		
-22	4-17		↓	0300												X		
-23	4-18			0400												X		
-24	4-19			0500												X		

Turnaround Time (Business days)
☒ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*
Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information
☐ Commercial "A" (Level 1)
☒ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other
Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: Jan 31 14:00	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

JB28084: Chain of Custody
Page 2 of 19

ACCUTEST
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 3 OF 16

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www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information
Company Name
Street Address SAME AS
City State Zip Pg 1
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects
Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.
If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bromide	2	LAB USE ONLY
-25	PT-INJ-4-32		Jan30	2000		W	1					X				X		
-26	PT-INJ-5-1		Jan29	1100												X		
-27	5-3			13 00												X		
-28	5-8			1800												X		
-29	5-11			2100												X		
-30	5-16		Jan30	02 00												X		
-31	5-18			0400												X		
-32	5-19			05:00												X		
-33	5-32			2000												X		
-34	PT-INJ-6-1		Jan29	11:00												X		
-35	6-7			1700												X		
-36	6-9			1900												X		

Turnaround Time (Business days)
☒ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*
Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information
☐ Commercial "A" (Level 1)
☒ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other
Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Jan 31 2013 14:00	1 FEDEX	2 FEDEX	2/5/13 1000	2
Relinquished by Sampler:	**Date Time:**	**Received By:**	**Relinquished By:**	**Date Time:**	**Received By:**
3		3	4		4
Relinquished by:	**Date Time:**	**Received By:**	**Custody Seal #**	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.
5		5			

JB28084: Chain of Custody
Page 3 of 19

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CHAIN OF CUSTODY- ExxonMobil Projects

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PAGE 4 OF

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention: PO#

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bromide	Chloride	LAB USE ONLY
-37	PT-INJ-6-18		Jan30	0400		W						X				X		
-38	↓ 6-19		↓	0500												X		
-39	6-3~~1~~2			2000												X		
-40	6-23			0900												X		
-41	DUP1		Jan30	/												X		
-42	DUP2		↓	/												X		
-43	tank-start		Jan29	0815												X		
-44	tank End		Jan 30	0330												X		
-45	PT-MW-3		Jan 30	1400												X		
-46	↓ 4		↓	↓												X	X	
-47	5															X	X	
-48	6															X	X	

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

☒ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☒ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other

Commercia "A" = Results Only
Commercia "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: Jan 31 2013 1400	Received By: 1 FedEx	Relinquished By: 2 FedEx	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # ☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

ACCUTEST Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 5 OF 10

Accutest New Jersey (Mid Atlantic) Regional Lab
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FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SAME AS PG1

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Bromide	Chloride	LAB USE ONLY
-49	PT-MW-7		Jan31	1400		W	1					✓				✓	✓	

Turnaround Time (Business days)

- ☑ Std. 10 Business Days
- ☐ 8 Day *RUSH*
- ☐ 5 Day *RUSH*
- ☐ 3 Day *EMERGENCY*
- ☐ 2 Day *EMERGENCY*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☑ Commercial "B" (Level 2)
- ☐ FULLT1 (Level 3+4)
- ☐ NJ Reduced
- ☐ Commercial "C"
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format ______
- ☐ Other ______

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: Jan31 2013 1400	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

ACCUTEST.
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 6 OF 1

Accutest New Jersey (Mid Atlantic) Regional Lab
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www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address SAME AS
City State Zip PG 1
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention: PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
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AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-50	PT-INJ-2-2		Jan 29	1200		W	1					1				HOLD	
-51	2-3			1300													
-52	2-5			1500													
-53	2-6			1600													
-54	2-8			1800													
-55	2-9			1900													
-56	2-11			2100													
-57	2-12			2200													
-58	2-13			2300													
-59	2-14		Jan 30	0000													
-60	2-15			0100													
-61	2-16			0200													

Turnaround Time (Business days)

☐ Std. 10 Business Days
☐ 8 Day RUSH
☐ 5 Day RUSH
☐ 3 Day EMERGENCY
☐ 2 Day EMERGENCY
☐ 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

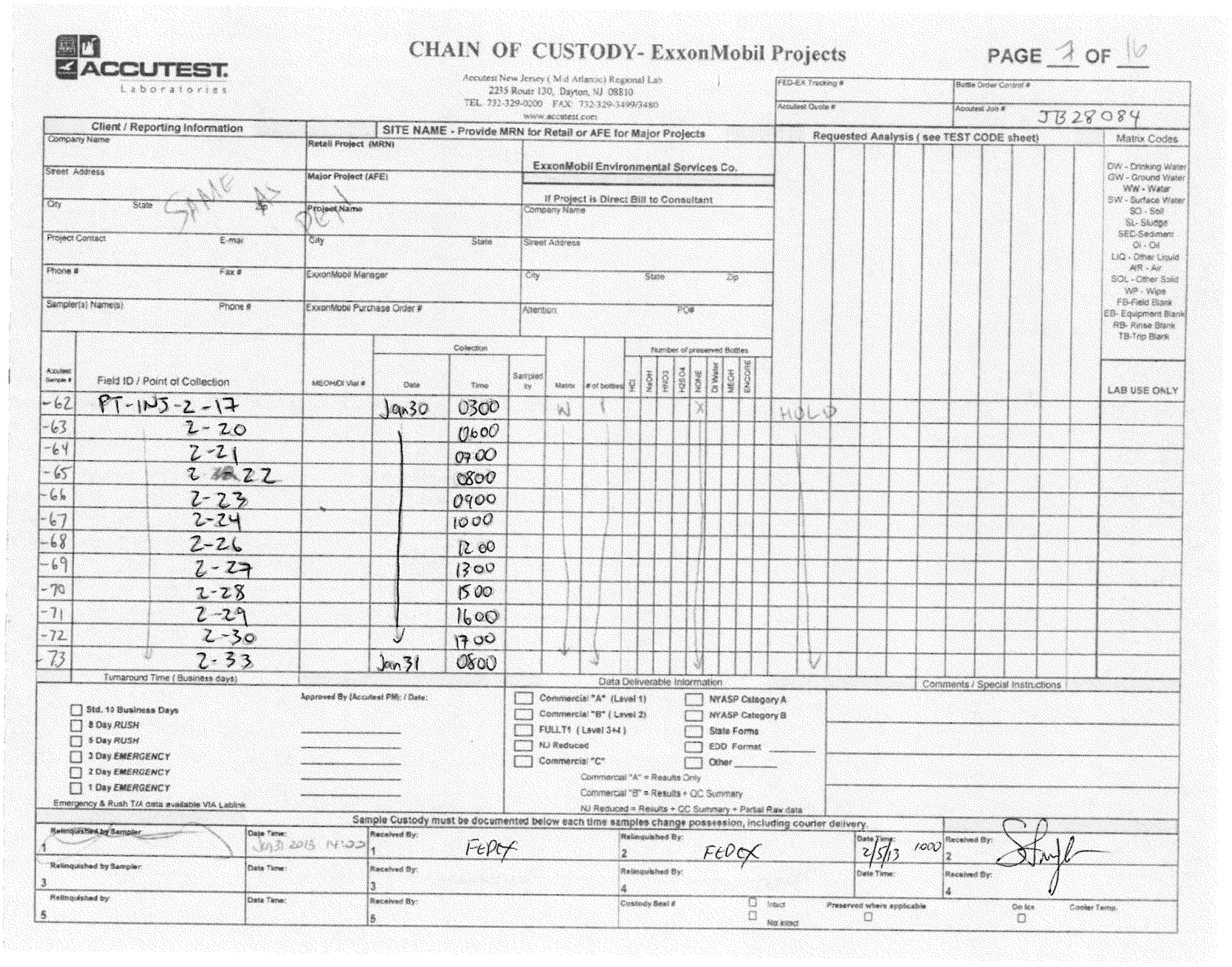
☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format ______
☐ Other ______

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: Jan 31 2013 14:00	Received By: 1 FeDEX	Relinquished By: 2 FeDEX	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.



ACCUTEST Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX 732-329-3499/3480
www.accutest.com

PAGE 7 OF 16

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information
Company Name
Street Address
City State Zip SAME AS DEP
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects
Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention: PO#

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis (see TEST CODE sheet)	LAB USE ONLY
-62	PT-INJ-2-17		Jan30	0300		W	1					X				HOLD	
-63	2-20			0600													
-64	2-21			0700													
-65	2-22			0800													
-66	2-23			0900													
-67	2-24			1000													
-68	2-26			1200													
-69	2-27			1300													
-70	2-28			1500													
-71	2-29			1600													
-72	2-30			1700													
-73	2-33		Jan31	0800													

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)
☐ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*
Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information
☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other
Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: Jan31 2013 14:00	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2	
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4	
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

5.1

5

JB28084: Chain of Custody
Page 7 of 19

ACCUTEST Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 6 OF 10

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: JB28084

Client / Reporting Information	SITE NAME - Provide MRN for Retail or AFE for Major Projects	
Company Name	Retail Project (MRN)	ExxonMobil Environmental Services Co.
Street Address	Major Project (AFE)	If Project is Direct Bill to Consultant
City State Zip SAME AS PGI	Project Name	Company Name
Project Contact E-mail	City State	Street Address
Phone # Fax #	ExxonMobil Manager	City State Zip
Sampler(s) Name(s) Phone #	ExxonMobil Purchase Order #	Attention: PO#

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis (see TEST CODE sheet)	LAB USE ONLY
-74	PT-INJ-3-2		Jan29	1200		W	1					✓				HOLD	
-75	3-3			1300													
-76	3-4			1400													
-77	3-5			1500													
-78	3-6			1600													
-79	3-8			1800													
-80	3-9			1900													
-81	3-11			2100													
-82	3-12			2200													
-83	3-13			2300													
-84	3-14		Jan30	0000													
-85	3-15			0100													

Matrix Codes:
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

☒ Std. 10 Business Days
☐ 8 Day RUSH
☐ 5 Day RUSH
☐ 3 Day EMERGENCY
☐ 2 Day EMERGENCY
☐ 1 Day EMERGENCY

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other

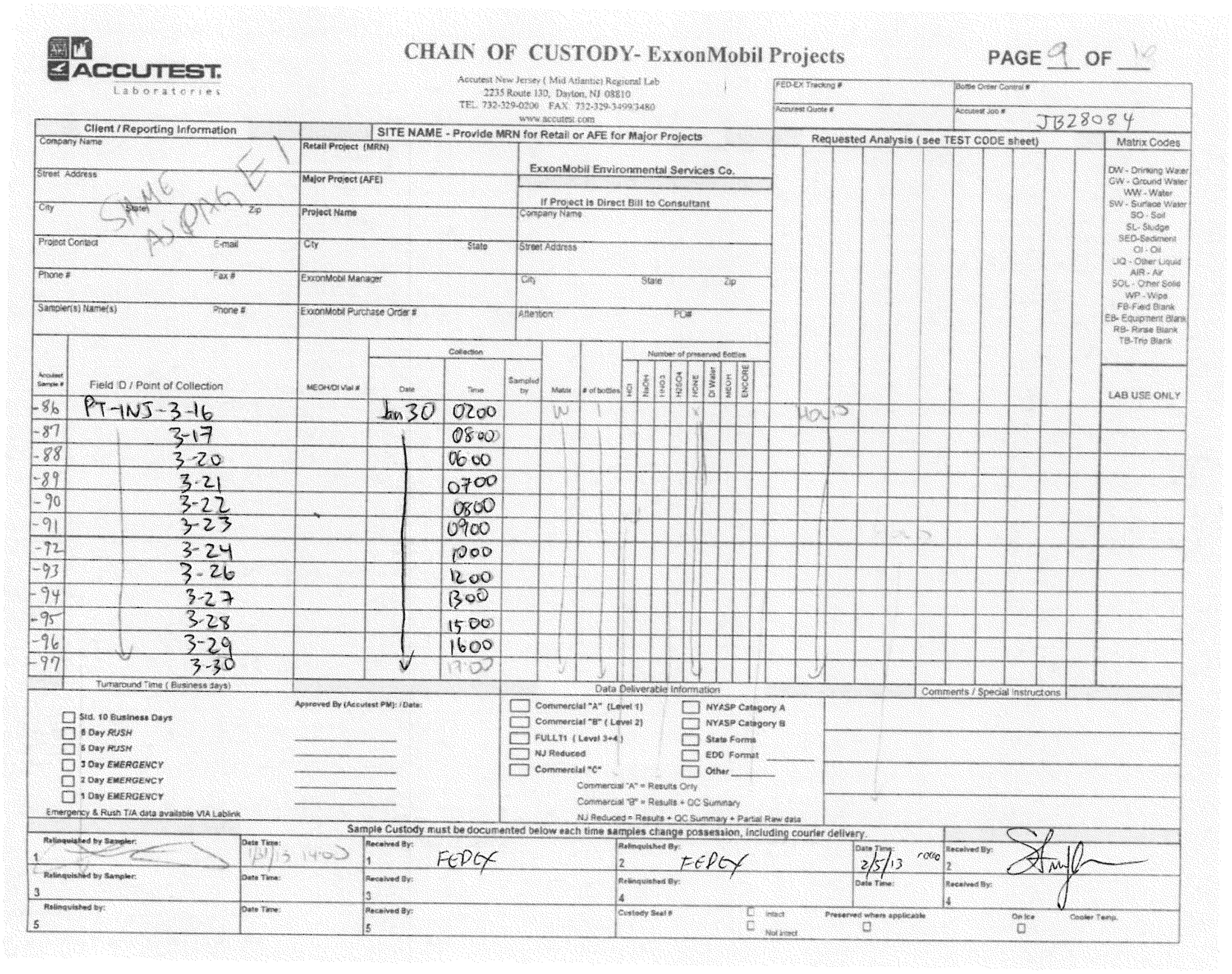
Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	[illegible] 2013 14:07	1 FEDEX	2 FEDEX	2/5/13 1000	2
Relinquished by Sampler: 3	**Date Time:**	**Received By:** 3	**Relinquished By:** 4	**Date Time:**	**Received By:** 4
Relinquished by: 5	**Date Time:**	**Received By:** 5	**Custody Seal #**	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

JB28084: Chain of Custody
Page 8 of 19



ACCUTEST. Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 9 OF 16

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SAME AS PAGE 1

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-86	PT-INJ-3-16		Jan30	0200		W	1					x				HOLD	
-87	3-17			0800													
-88	3-20			0600													
-89	3-21			0700													
-90	3-22			0800													
-91	3-23			0900													
-92	3-24			1000													
-93	3-26			1200													
-94	3-27			1300													
-95	3-28			1500													
-96	3-29			1600													
-97	3-30			1700													

Turnaround Time (Business days)

☐ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"

☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	1/31/13 1400	1 FEDEX	2 FEDEX	2/5/13 1000	2
Relinquished by Sampler: 3	**Date Time:**	**Received By:** 3	**Relinquished By:** 4	**Date Time:**	**Received By:** 4
Relinquished by: 5	**Date Time:**	**Received By:** 5	**Custody Seal #**	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

ACCUTEST
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 10 OF 16

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information
Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects
Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-98	PT-INJ-3-33		Jan31	08 00		W	1					✓				HOLD	
-99	PT-INJ 4-2		Jan 29	1200													
-100	4-3			1300													
-101	4-4			1400													
-102	4-5			1500													
-103	4-6			1600													
-104	4-7			1700													
-105	4-9			1900													
-106	4-11			2100													
-107	4-12			2200													
-108	4-13			2300													
-109	4-15		Jan30	01 00													

Turnaround Time (Business days)

- ☐ Std. 10 Business Days
- ☐ 8 Day *RUSH*
- ☐ 5 Day *RUSH*
- ☐ 3 Day *EMERGENCY*
- ☐ 2 Day *EMERGENCY*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULLT1 (Level 3+4)
- ☐ NJ Reduced
- ☐ Commercial "C"
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format
- ☐ Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

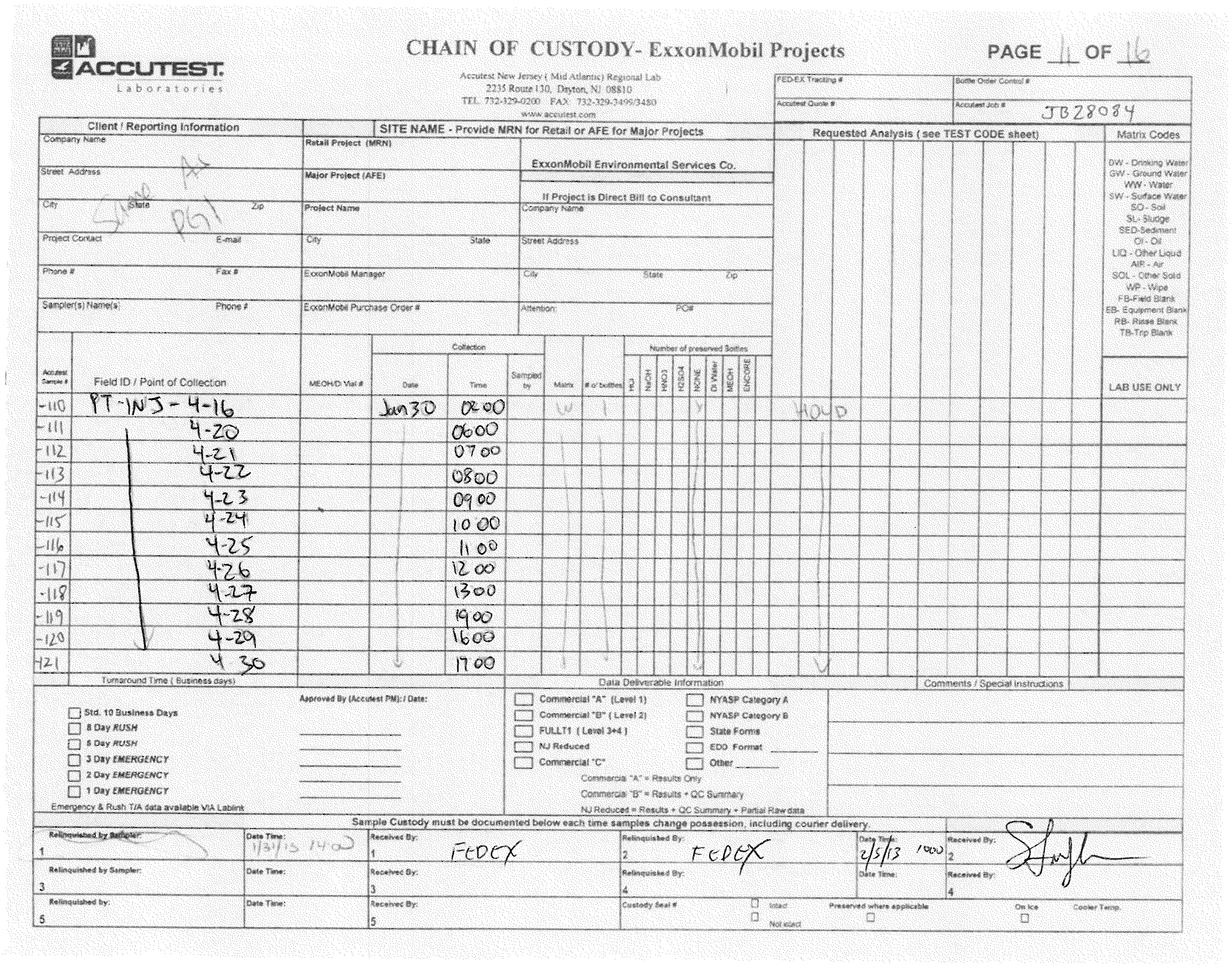
Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 1/31/13 14:00	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

5.1

5

JB28084: Chain of Custody
Page 10 of 19



ACCUTEST Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 11 OF 16

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address
City State Zip
Same As PG1
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention: PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-110	PT-INJ-4-16		Jan30	02 00		W	1					Y				HOLD	
-111	4-20			0600													
-112	4-21			0700													
-113	4-22			0800													
-114	4-23			09 00													
-115	4-24			10 00													
-116	4-25			11 00													
-117	4-26			12 00													
-118	4-27			1300													
-119	4-28			1900													
-120	4-29			1600													
-121	4 30			1700													

Turnaround Time (Business days)

- ☐ Std. 10 Business Days
- ☐ 8 Day *RUSH*
- ☐ 5 Day *RUSH*
- ☐ 3 Day *EMERGENCY*
- ☐ 2 Day *EMERGENCY*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULLT1 (Level 3+4)
- ☐ NJ Reduced
- ☐ Commercial "C"
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format ______
- ☐ Other ______

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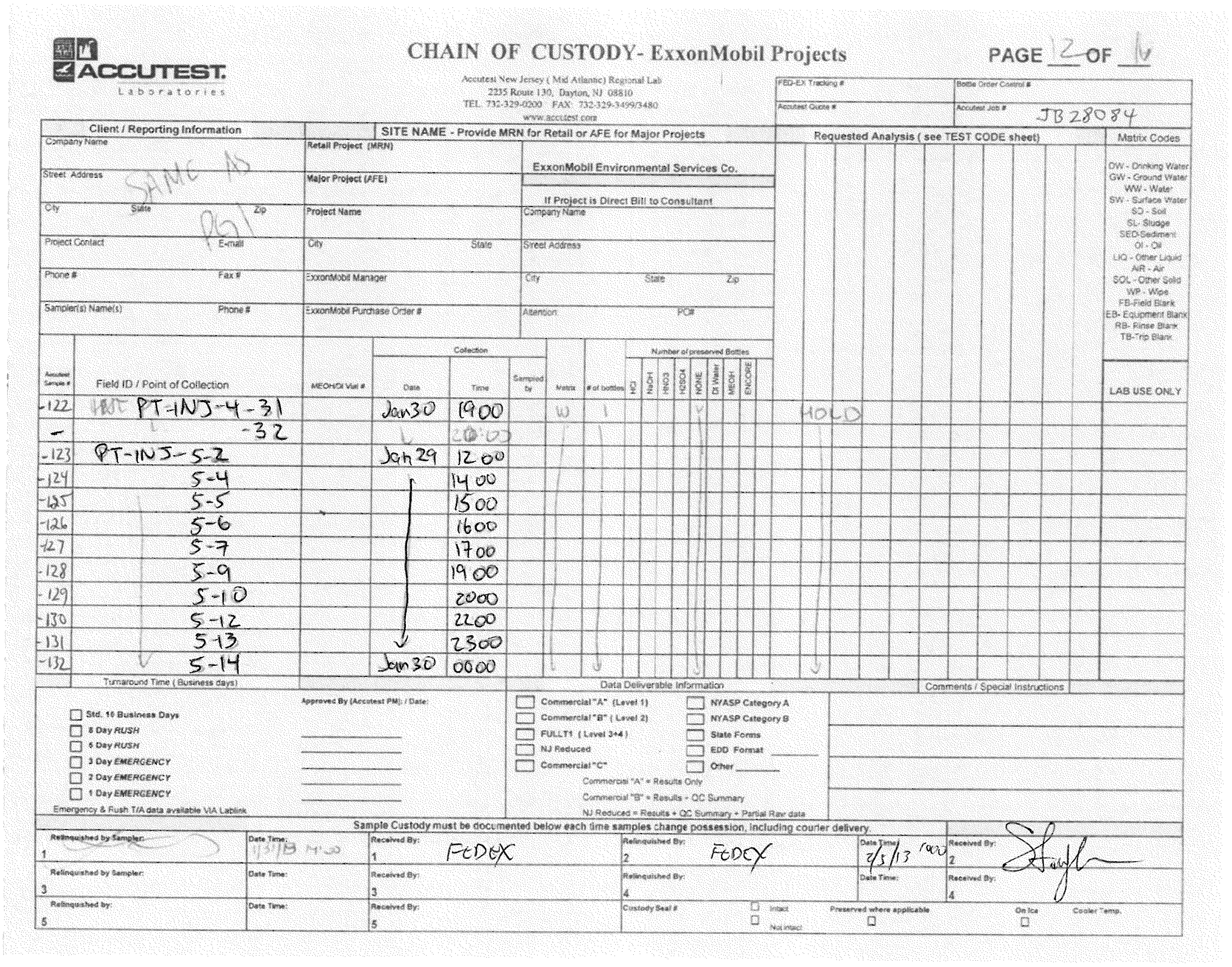
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 1/31/13 1400	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2	
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4	
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

JB28084: Chain of Custody
Page 11 of 19



ACCUTEST.
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 12 OF 16

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address SAME AS
City State Zip P61
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
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Attention PO#

Matrix Codes
DW - Drinking Water
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SO - Soil
SL- Sludge
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OI - Oil
LIQ - Other Liquid
AIR - Air
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WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis (see TEST CODE sheet)	LAB USE ONLY
-122	~~INT~~ PT-INJ-4-31		Jan30	1900		W	1					✓				HOLD	
-	-32			2000													
-123	PT-INJ-5-2		Jan 29	1200													
-124	5-4			1400													
-125	5-5			1500													
-126	5-6			1600													
-127	5-7			1700													
-128	5-9			1900													
-129	5-10			2000													
-130	5-12			2200													
-131	5-13			2300													
-132	5-14		Jan30	0000													

Turnaround Time (Business days)

☐ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"

☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format ______
☐ Other ______

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 1/31/13 14:30	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

JB28084: Chain of Custody
Page 12 of 19

ACCUTEST.
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 13 **OF** 16

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant

Company Name
Street Address
City State Zip
Attention PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
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AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-133	PT INJ -5-15		Jan30	0100		W	1					1				HOLD	
-134	5-17			0300													
-	5-18			0400													
-135	5-20			0600													
-136	5-21			0700													
-137	5-22			0800													
-138	5-23			0900													
-139	5-24			1000													
-140	5-25			1100													
-141	5-26			1200													
-142	5-27			1300													
-143	5-28			1500													

Turnaround Time (Business days)

☐ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"

☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 1/31/13 14:00	Received By: 1 FeDex	Relinquished By: 2 FeDex	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

ACCUTEST.
Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 14 OF 16

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information
Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SAME AS PG 1

SITE NAME - Provide MRN for Retail or AFE for Major Projects
Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention: PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-144	PT-INJ-5-29		Jan 30	16 00		W	1					X				HOLD	
-145	↓ 5-30		↓	1700		↓	↓					↓				↓	
-146	5-31			1900													
-147	5-33		Jan 31	0800													
-148	PT-INJ-6-2		Jan 29	1200													
-149	6-3		↓	1300													
-150	6-4			1400													
~~-151~~ -151	6-5			1500													
-152	6-6			1600													
-153	6-8			1800													
-154	6-10			2000													
-155	6-11			2100													

Turnaround Time (Business days)

- ☐ Std. 10 Business Days
- ☐ 8 Day *RUSH*
- ☐ 5 Day *RUSH*
- ☐ 3 Day *EMERGENCY*
- ☐ 2 Day *EMERGENCY*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM) / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULLT1 (Level 3+4)
- ☐ NJ Reduced
- ☐ Commercial "C"
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format ______
- ☐ Other ______

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 1/31/13 14:00	Received By: 1 FEDEX	Relinquished By: 2 FEDEX	Date Time: 2/5/13 1000	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

5.1
5

JB28084: Chain of Custody
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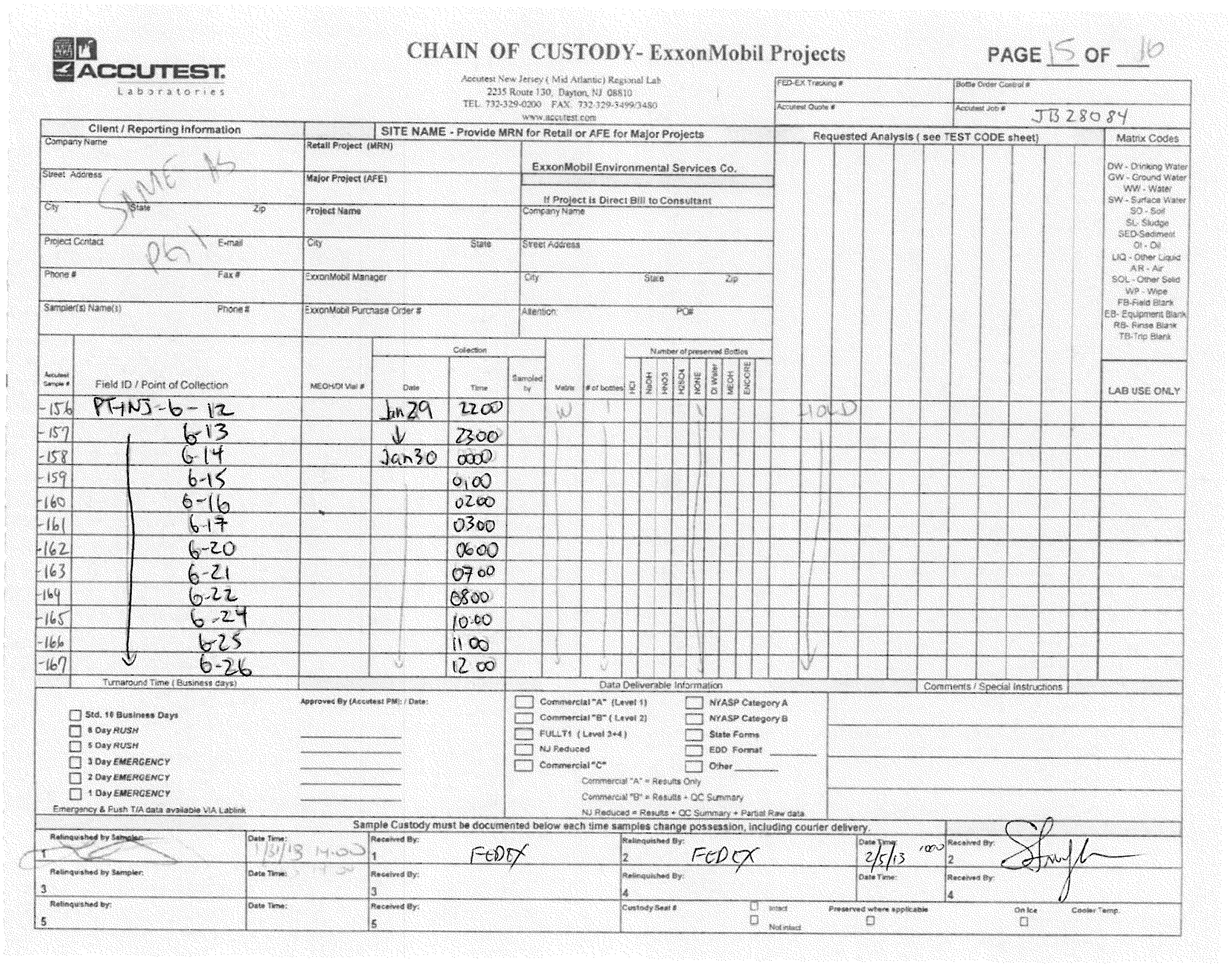

ACCUTEST. Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

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Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name
Street Address
City State Zip
Project Contact E-mail
Phone # Fax #
Sampler(s) Name(s) Phone #

SAME AS Pg 1

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN)
Major Project (AFE)
Project Name
City State
ExxonMobil Manager
ExxonMobil Purchase Order #

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name
Street Address
City State Zip
Attention: PO#

Requested Analysis (see TEST CODE sheet)

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis	LAB USE ONLY
-156	PT4NJ-6-12		Jan29	2200		W	1					1				HOLD	
-157	6-13		↓	2300													
-158	6-14		Jan30	0000													
-159	6-15			0100													
-160	6-16			0200													
-161	6-17			0300													
-162	6-20			0600													
-163	6-21			0700													
-164	6-22			0800													
-165	6-24			10:00													
-166	6-25			11 00													
-167	6-26			12 00													

Turnaround Time (Business days)

- ☐ Std. 10 Business Days
- ☐ 8 Day *RUSH*
- ☐ 5 Day *RUSH*
- ☐ 3 Day *EMERGENCY*
- ☐ 2 Day *EMERGENCY*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULLT1 (Level 3+4)
- ☐ NJ Reduced
- ☐ Commercial "C"
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☐ State Forms
- ☐ EDD Format ______
- ☐ Other ______

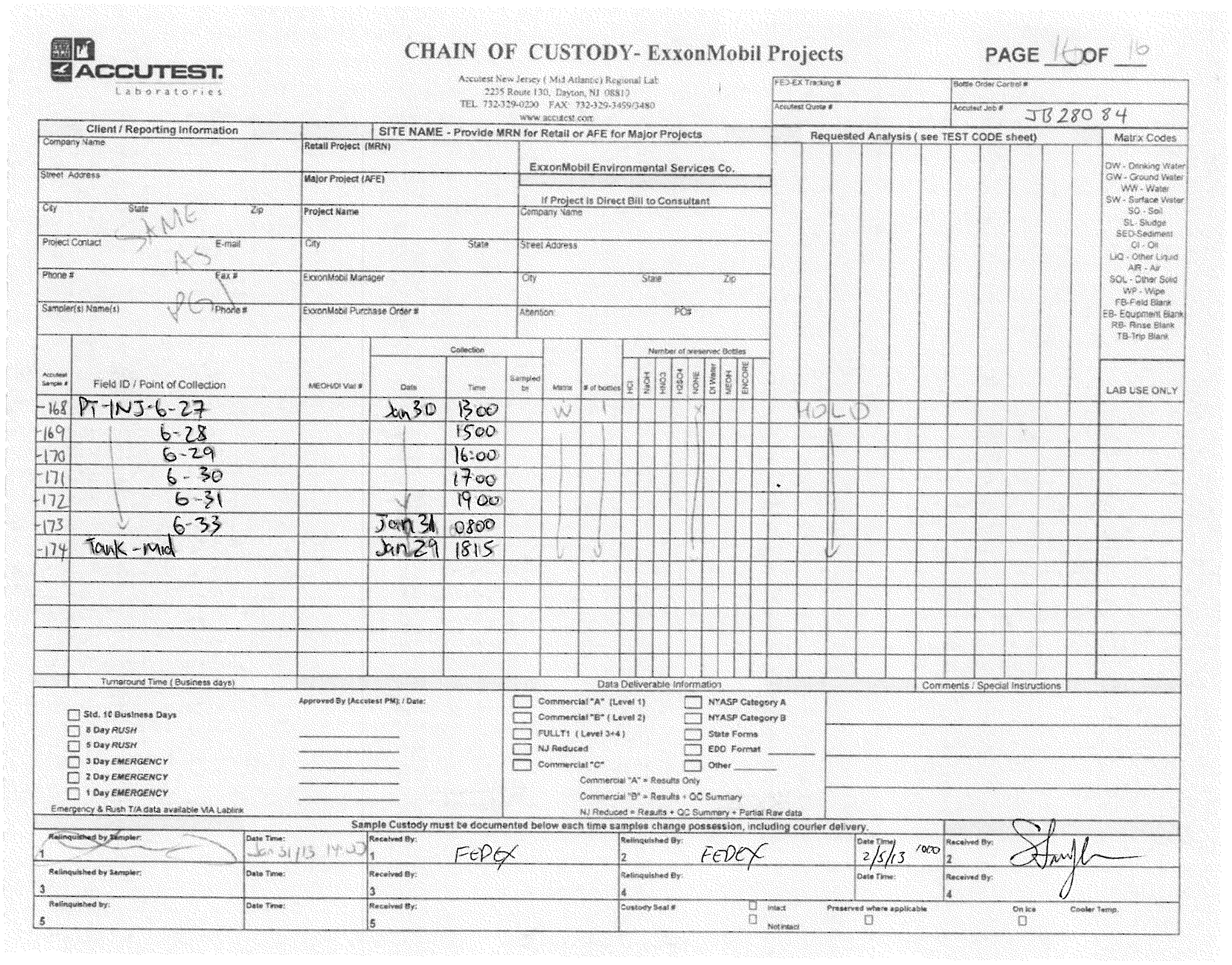
Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	1/31/13 14:00	1 FEDEX	2 FEDEX	2/5/13 1000	2
Relinquished by Sampler: 3	**Date Time:**	**Received By:** 3	**Relinquished By:** 4	**Date Time:**	**Received By:** 4
Relinquished by: 5	**Date Time:**	**Received By:** 5	**Custody Seal #**	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

JB28084: Chain of Custody
Page 15 of 19



ACCUTEST Laboratories

CHAIN OF CUSTODY- ExxonMobil Projects

PAGE 16 OF 16

Accutest New Jersey (Mid Atlantic) Regional Lab
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX: 732-329-3459/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: JB28084

Client / Reporting Information

Company Name:
Street Address:
City: State: Zip:
Project Contact: E-mail:
Phone #: Fax #:
Sampler(s) Name(s): Phone #:

SAME AS PG1

SITE NAME - Provide MRN for Retail or AFE for Major Projects

Retail Project (MRN):
Major Project (AFE):
Project Name:
City: State:
ExxonMobil Manager:
ExxonMobil Purchase Order #:

ExxonMobil Environmental Services Co.

If Project is Direct Bill to Consultant
Company Name:
Street Address:
City: State: Zip:
Attention: PO#

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB- Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Requested Analysis (see TEST CODE sheet)	LAB USE ONLY
-168	PT-INJ-6-27		Jan30	1300		W	1					X				HOLD	
-169	6-28			1500													
-170	6-29			16:00													
-171	6-30			1700													
-172	6-31			1900													
-173	6-33		Jan31	0800													
-174	Tank-Mid		Jan29	1815													

Turnaround Time (Business days)

☐ Std. 10 Business Days
☐ 8 Day *RUSH*
☐ 5 Day *RUSH*
☐ 3 Day *EMERGENCY*
☐ 2 Day *EMERGENCY*
☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format
☐ Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Jan 31/13 14:00	1 FEDEX	2 FEDEX	2/5/13 1000	2
Relinquished by Sampler: 3	**Date Time:**	**Received By:** 3	**Relinquished By:** 4	**Date Time:**	**Received By:** 4
Relinquished by: 5	**Date Time:**	**Received By:** 5	**Custody Seal #**	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

JB28084: Chain of Custody
Page 16 of 19

ACCUTEST
LABORATORIES

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE ___ OF ___

FED-EX Tracking #
Bottle Order Control #
Accutest Quote #
Accutest Job # JB28084

Client / Reporting Information

Company Name: GEO SYNTEC
Street Address: 130 RESEARCH LANE
City State Zip
Project Contact E-mail: SAME AS PG 1
Phone # Fax #
Sampler(s) Name(s) Phone #

Project Information

Project Name:
Street
City State
Project #: AUBURN
Client Purchase Order #
Project Manager

Billing Information (if different from Report to)

Company Name
Street Address
City State Zip
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
-175	PT-INJ-1-BKG		1-23-13				1									
-176	PT-INJ-2-BKG		1-23-13													
-177	PT-INJ-3-BKG		1-23-13													
-178	PT-INJ-4-BKG		1-23-13													
-179	PT-INJ-5-BKG		1-23-13													
-180	PT-INJ-6-BKG		1-23-13													
-181	PT-MW-3-1		1-30-13	1400												
-182	PT-MW-4-1		1-30-13	1400												
-183	PT-MW-5-1		1-30-13	1400												
-184	PT-MW-6-1		1-30-13	1400												
-185	PT-~~MW~~MW-7-1		1-30-13	1400			✓									

Turnaround Time (Business days)

☐ Std. 10 Business Days
☐ 5 Day RUSH
☐ 3 Day EMERGENCY
☐ 2 Day EMERGENCY
☐ 1 Day EMERGENCY
☐ other ________

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

☐ Commercial "A" (Level 1)
☐ Commercial "B" (Level 2)
☐ FULLT1 (Level 3+4)
☐ NJ Reduced
☐ Commercial "C"
☐ NYASP Category A
☐ NYASP Category B
☐ State Forms
☐ EDD Format ________
☐ Other ________

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		1 FeDEX	2 FeDEX	2/5/13 1000	2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp.

JB28084: Chain of Custody

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Job Change Order: JB28084_2_27_2013

Requested Date:	2/27/2013	**Received Date:**	2/5/2013
Account Name:	Geosyntec Consultants	**Due Date:**	2/19/2013
Project	GE Powerex, Auburn, NY	**Deliverable:**	FULT1
CSR:	mariem	**TAT (Days):**	14

==

Sample #: JB28084-45 to 49

Change: Please revise sample date to 1/22/13, with time of 00:00. Confirmed from the bottle labels (field ID's matched as originally logged in).

Dept:

==

Above Changes Per: Marie

Date: 2/27/2013

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service

Page 1 of 1

Job Change Order: JB28084_2_27_2013

Requested Date:	2/27/2013	**Received Date:**	2/5/2013
Account Name:	Geosyntec Consultants	**Due Date:**	2/19/2013
Project	GE Powerex, Auburn, NY	**Deliverable:**	FULT1
CSR:	mariem	**TAT (Days):**	14

==

Sample #: JB28084-45 **Change:** Please retrieve CHL result. Add data to original report.

Dept:

PT-MW-3

==

Above Changes Per: Luana Jo **Date:** 2/27/2013

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service

Page 1 of 1

COLUMBIA ANALYTICAL SERVICES, INC.
Now part of the ALS Group
Analytical Report

lient:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
roject:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1300
ample Matrix:	Water	**Date Received:**	2/ 4/13
ample Name:	GW-PW-1-020113		
ab Code:	R1300698-001	**Basis:**	NA

General Chemistry Parameters

nalyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
romide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/5/13 21:43	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-1-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

latrix (soil/water): WATER Lab Sample ID: R1300698-001

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1280	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Form I - IN

COLUMBIA ANALYTICAL SERVICES, INC.
Now part of the ALS Group
Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1312
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PW-4-020113		
Lab Code:	R1300698-002	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	2.5		mg/L	1.0	0.8	10	NA	2/5/13 22:00	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-4-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

atrix (soil/water): WATER Lab Sample ID: R1300698-002

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1550	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1435
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PW-12-020113		
Lab Code:	R1300698-004	**Basis:**	NA

General Chemistry Parameters

nalyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
romide	300.0	1.3		mg/L	1.0	0.8	10	NA	2/5/13 22:33	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-12-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

atrix (soil/water): WATER Lab Sample ID: R1300698-004

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1070	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.
Now part of the ALS Group
Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1450
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PW-13-020113		
Lab Code:	R1300698-005	**Basis:**	NA

General Chemistry Parameters

nalyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
romide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/5/13 22:49	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-13-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

atrix (soil/water): WATER Lab Sample ID: R1300698-005

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1730	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1755
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PT-MW-3-020113		
Lab Code:	R1300698-009	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	**132**		mg/L	4.0	3.2	40	NA	2/8/13 23:59	
Chloride	300.0	**89.2**		mg/L	2.0	0.5	10	NA	2/6/13 01:16	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PT-MW-3-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

latrix (soil/water): WATER Lab Sample ID: R1300698-009

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	7890			P
7440-23-5	Sodium	14600			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1620
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PT-MW-4-020113		
Lab Code:	R1300698-007	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	**2.9**		mg/L	1.0	0.8	10	NA	2/6/13 00:11	
Chloride	300.0	**185**		mg/L	8.0	1.7	40	NA	2/6/13 20:32	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PT-MW-4-020113

Contract: R1300698

Lab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

Matrix (soil/water): WATER Lab Sample ID: R1300698-007

Level (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	11300			P
7440-23-5	Sodium	10600			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Analytical Report

Client: O'Brien & Gere Engineers, Incorporated
Project: GE - CEP Former Powerex - EISB Tracer Study
Sample Matrix: Water

Service Request: R1300698
Date Collected: 2/ 1/13 1320
Date Received: 2/ 4/13

Sample Name: GW-PT-MW-5-020113
Lab Code: R1300698-003

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	**2.0**	mg/L	1.0	0.8	10	NA	2/5/13 22:16	
Chloride	300.0	**52.2**	mg/L	2.0	0.5	10	NA	2/5/13 22:16	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PT-MW-5-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

atrix (soil/water): WATER Lab Sample ID: R1300698-003

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1780	J		P
7440-23-5	Sodium	4920			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: O'Brien & Gere Engineers, Incorporated
Project: GE - CEP Former Powerex - EISB Tracer Study
Sample Matrix: Water

Sample Name: GW-X-1-020113 (Dup of PT-MW-5)
Lab Code: R1300698-010

Service Request: R1300698
Date Collected: 2/ 1/13
Date Received: 2/ 4/13

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/6/13 01:33	
Chloride	300.0	**52.8**		mg/L	2.0	0.5	10	NA	2/6/13 01:33	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-X-1-020113 (Dup of PT-MW-5)

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

atrix (soil/water): WATER Lab Sample ID: R1300698-010

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1760	J		P
7440-23-5	Sodium	4730			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.
Now part of the ALS Group
Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1455
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PT-MW-6-020113		
Lab Code:	R1300698-006	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	**97.4**		mg/L	4.0	3.2	40	NA	2/8/13 23:43	
Chloride	300.0	**73.2**		mg/L	2.0	0.5	10	NA	2/5/13 23:05	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PT-MW-6-020113

ontract: R1300698

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

atrix (soil/water): WATER Lab Sample ID: R1300698-006

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	14900			P
7440-23-5	Sodium	11900			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300698
Project:	GE - CEP Former Powerex - EISB Tracer Study	**Date Collected:**	2/ 1/13 1715
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PT-MW-7-020113		
Lab Code:	R1300698-008	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
3romide	300.0	**11.2**		mg/L	1.0	0.8	10	NA	2/6/13 01:00	
Chloride	300.0	**173**		mg/L	8.0	1.7	40	NA	2/6/13 20:46	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PT-MW-7-020113

Contract: R1300698

Lab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0201

Matrix (soil/water): WATER Lab Sample ID: R1300698-008

Level (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	2950			P
7440-23-5	Sodium	8690			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300715
Project:	GE -CEP Former Powerex, EISB Tracer Study	**Date Collected:**	2/ 4/13 1227
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PW-1-020413		
Lab Code:	R1300715-003	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/6/13 02:22	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-1-020413

ontract: R1300715

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-4-0204

atrix (soil/water): WATER

Lab Sample ID: R1300715-003

evel (low/med): LOW

Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1370	J		P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

Form I - IN

Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300715
Project:	GE -CEP Former Powerex, EISB Tracer Study	**Date Collected:**	2/ 4/13 1146
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PW-4-020413		
Lab Code:	R1300715-001	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/6/13 01:49	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-4-020413

ontract: R1300715

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-4-0204

atrix (soil/water): WATER Lab Sample ID: R1300715-001

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	2020			P

Color Before: YELLOW Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

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Analytical Report

Client: O'Brien & Gere Engineers, Incorporated
Project: GE -CEP Former Powerex, EISB Tracer Study
Sample Matrix: Water
Sample Name: GW-PW-X-2-020413 (Dup of PW - 4)
Lab Code: R1300715-005

Service Request: R1300715
Date Collected: 2/ 4/13
Date Received: 2/ 4/13

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/6/13 04:01	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-X-2-020413 Dup of PW-4

ontract: R1300715

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-4-0204

atrix (soil/water): WATER Lab Sample ID: R1300715-005

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	2000			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.
Now part of the ALS Group
Analytical Report

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300715
Project:	GE -CEP Former Powerex, EISB Tracer Study	**Date Collected:**	2/ 4/13 1205
Sample Matrix:	Water	**Date Received:**	2/ 4/13
Sample Name:	GW-PW-12-020413		
Lab Code:	R1300715-002	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	**0.9**	J	mg/L	1.0	0.8	10	NA	2/6/13 02:06	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-12-020413

ontract: R1300715

ab Code: Case No.: SAS No.: SDG NO.: GW-PW-4-0204

atrix (soil/water): WATER Lab Sample ID: R1300715-002

evel (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1150	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

lient: O'Brien & Gere Engineers, Incorporated
roject: GE -CEP Former Powerex, EISB Tracer Study
ample Matrix: Water

ample Name: GW-PW-13-020413
ab Code: R1300715-004

Service Request: R1300715
Date Collected: 2/ 4/13 1240
Date Received: 2/ 4/13

Basis: NA

General Chemistry Parameters

nalyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
romide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/6/13 03:11	

Columbia Analytical Services

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-13-020413

Contract: R1300715

Lab Code: Case No.: SAS No.: SDG NO.: GW-PW-4-0204

Matrix (soil/water): WATER Lab Sample ID: R1300715-004

Level (low/med): LOW Date Received: 2/4/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1720	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

O'BRIEN & GERE

Chain of Custody/Analysis Report

Page 1 of 1

Sampler(s): Amanda S. Young , Paul A. Freyer
(Signature) Amanda S. Young Paul A. Freyer

Lab Use Only
Project Number:
Job Number:
Lab ID:

Contact: Amy Spooner-Stevens
Address: 435 New Karner Road, Albany, N.Y. 12205
Phone: (518) 452-9392 x28
Email: Amy.Spooner-Stevens@obg.com
Project: GE-CEP- Former Powerex, Inc. Facility
EISB Tracer Study
Location: Auburn, New York

Laboratory:
ALS Environmental
1565 Jefferson Rd,
Bldg 300, Ste 360
Rochester, NY 14623
Attn: Janice Jaeger
Phone:
(585) 288-5380

Holding Time: As Per methods, H.T. is 28 days (Br) and 6 months (K).

Package Requirement:
GE - Lvl 3 w/ 10 BD TAT

EDD Format:
EQuIS 4-file

Analysis Required
Preservatives: (see key at bottom)

	Sample Identification										Analysis Required								
	Unique Field Sample ID (sys_sample_code)	Sample Location		Date	Time	Sample Type (see key)	Sample Matrix (see key)	Number of Containers	Grab (G) or Composite (C)	Field Filtered? (Y / N)	Potassium by EPA 200.7	Bromide by EPA 300.0							Lab Sample ID
									Reporting Units		ppb	ppm							
											2	0							
1	GW-PW-4-020413	PW	-4	2/4/13	1146	N	WG	2	G	N	X	X							
2	GW-PW-12-020413	PW	-12	2/4/13	1205	N	WG	2	G	N	X	X							
3	GW-PW-1-020413	PW	-1	2/4/13	1227	N	WG	2	G	N	X	X							
4	GW-PW-13-020413	PW	-13	2/4/13	1240	N	WG	2	G	N	X	X							
5	GW-~~PW~~PFX-2-020413	X	-2	2/4/13	—	FD	WG	2	G	N	X	X							
6									G	N									
7									G	N									
8									G	N									
9									G	N									
10									G	N									
11									G	N									
12									G	N									

Special Instructions: 1) Analyze in accordance with GE spot bid. 2) Report detections above MDL, but below PQL ("J" flags). 3) GE Level 3 Package with 10 business day TA; Deliverables include: 1 bound & 1 PDF copies on disks.

Use this space if shipped via courier (e.g., Fed Ex)
Relinquished by:
of:
Date
Time
Courier Name:
Date
Time

Relinquished by: Amanda S. Young
of: O'Brien + Gere
Date 2/4/2013
Time 1758
Received by: Janice Jaeger
of: ALS
Date 2/4/13
Time 1758

Relinquished by:
of:
Date
Time
Received by:
of:
Date
Time

Condition:
Custody Seals intact?
Cooler Temperature:

Other Comments or Notes regarding condition of samples as received:

Sample Type: N = Normal env. sample, FD = field duplicate, EB = Equipment Blank, TB = Trip Blank, MS = Lab Matrix Spike, Other (Specify):
Sample Matrix: SE = Sediment, SO = Soil, WG = Ground Water, WS = Surface Water, WW = Waste Water, WP = Potable Water, AA = Ambient Air, Other (Specify):
Preservatives Code: 0 = none, 1 = HCL, 2 = HNO3, 3 = H2SO4, 4 = NaOH, 5 = Zn Acetate, 6 = MeOH, 7 = NaHSO4, 8 = other

R1300715 5
O'Brien & Gere Engineers, Incorporated
GE -CEP Former Powerex, EISB Tacer Study

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-1-020813

Contract: R1300877

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG NO.: GW-PW-1-0208

Matrix (soil/water): WATER Lab Sample ID: R1300877-001

Level (low/med): LOW Date Received: 2/8/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1510	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: ______

Color After: COLORLESS Clarity After: CLEAR Artifacts: ______

Comments:

Form I - IN

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300877
Project:	GE-CEP Former Powerex EISB Tracer Study	**Date Collected:**	2/ 8/13 0916
Sample Matrix:	Water	**Date Received:**	2/ 8/13
Sample Name:	GW-PW-1-020813		
Lab Code:	R1300877-001	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/11/13 23:49	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-4-020813

Contract: R1300877

Lab Code: Case No.: SAS No.: SDG NO.: GW-PW-1-0208

Matrix (soil/water): WATER Lab Sample ID: R1300877-002

Level (low/med): LOW Date Received: 2/8/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1760	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Form I - IN

Client: O'Brien & Gere Engineers, Incorporated
Project: GE-CEP Former Powerex EISB Tracer Study
Sample Matrix: Water

Service Request: R1300877
Date Collected: 2/ 8/13 0933
Date Received: 2/ 8/13

Sample Name: GW-PW-4-020813
Lab Code: R1300877-002

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/12/13 00:05	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-12-020813

Contract: R1300877

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG NO.: GW-PW-1-0208

Matrix (soil/water): WATER

Lab Sample ID: R1300877-003

Level (low/med): LOW

Date Received: 2/8/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	3190			P

Color Before: YELLOW Clarity Before: CLEAR Texture: ____

Color After: COLORLESS Clarity After: CLEAR Artifacts: ____

Comments:

Form I - IN

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300877
Project:	GE-CEP Former Powerex EISB Tracer Study	**Date Collected:**	2/ 8/13 0952
Sample Matrix:	Water	**Date Received:**	2/ 8/13
Sample Name:	GW-PW-12-020813		
Lab Code:	R1300877-003	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/12/13 00:22	

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-PW-13-020813

Contract: R1300877

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG NO.: GW-PW-1-0208

Matrix (soil/water): WATER Lab Sample ID: R1300877-004

Level (low/med): LOW Date Received: 2/8/2013

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-09-7	Potassium	1860	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: ______

Color After: COLORLESS Clarity After: CLEAR Artifacts: ______

Comments:

Client:	O'Brien & Gere Engineers, Incorporated	**Service Request:**	R1300877
Project:	GE-CEP Former Powerex EISB Tracer Study	**Date Collected:**	2/ 8/13 1005
Sample Matrix:	Water	**Date Received:**	2/ 8/13
Sample Name:	GW-PW-13-020813		
Lab Code:	R1300877-004	**Basis:**	NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Bromide	300.0	1.0	U	mg/L	1.0	0.8	10	NA	2/12/13 01:11	