Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Former IBM Endicott Site
Operable Unit No. 4
Former Ideal Cleaners
State Superfund Project
Village of Endicott, Broome County, New York
Site Number 704014

November 2010

New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

Former IBM Endicott Facility
Operable Unit No. 4 - Former Ideal Cleaners
State Superfund Project
Village of Endicott, Broome County, New York
Site No. 704014

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for Operable Unit No. 4 of the Former IBM Endicott site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law, 6 NYCRR Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit No. 4 of the Former IBM Endicott site and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of this ROD.

Description of Selected Remedy

Based on the results of the Supplemental Remedial Investigation for Operable Unit No. 4 of the Former IBM Endicott site and the performance of the interim remedial measure (IRM) identified in this ROD, the Department has selected No Further Action with continued operation of the groundwater remedial and vapor intrusion mitigation programs as the remedy for the operable unit.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

NOV 0 2 2010

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

RECORD OF DECISION
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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the above referenced site. The disposal of hazardous waste at the site has resulted in threats to public health and the environment that are addressed by the remedy presented in this Record of Decision (ROD). The disposal of hazardous waste at this site, as more fully described in Section 5 of this document, has contaminated various environmental media. The remedy, discussed in detail in Section 6, is intended to attain the remedial objectives identified in Section 6 for the protection of public health and the environment. This ROD identifies the selected remedy and discusses the reasons for the selected remedy. The Department has selected the final remedy only after careful consideration of all comments received during the public comment period.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and the environment.

The Department has issued this ROD in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York, 6 NYCRR Part 375.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Former IBM Endicott Facility is a 135-acre industrial facility situated in the Susquehanna River valley in the Village of Endicott, Broome County, New York (Figure 1). It is the largest of several hazardous substance sites which have been identified in the village. The other sites include: 312 Maple Street, Schapiro's Fine Dry Cleaning, the former Canada Dry Bottling Plant, Union Forging Company, and Endicott-Johnson.

IBM is performing or has completed a remedial investigation on seven separate operable units (OUs) at the site (Figure 2):

- OU No. 1 – Railroad Corridor Source Area;
- OU No. 2 – North Street Area and Off-Site Plume Reduction;
- OU No. 3 – Southern Area Plume Reduction;

- OU No. 4 – Ideal Cleaners Area;
- OU No. 5 – Building 57/57A;
- OU No. 6 – Plume Control in Bedrock Groundwater; and
- OU No. 7 – Assessment of Sewers in Northwest Area.

As part of the overall approach to enhancing its historic groundwater remedial program, IBM has installed additional pumping wells in those OUs. The investigation of OU No. 6 is complete and a ROD was issued for that operable unit in March 2009. The investigation of OU No. 4, which is the subject of this document, is also complete. Investigation of the other operable units is ongoing.

Site Geology

The geology of the Endicott area is characterized by a sequence of unconsolidated glacial and post-glacial sediments overlying a buried bedrock valley.

Geologic conditions in OU No. 4 include a downward sequence of soil fill, sand interbedded with sand and gravel and sandy silt (outwash sand and gravel), and silt with thin laminae of clay (lacustrine silt). A thin zone of cinder fill is also present within a portion of the former Ideal Cleaners property. Where saturated, the outwash sand and gravel constitutes an Upper Aquifer, with the lacustrine silt serving as an aquitard.

Operable Unit No. 4, the former Ideal Cleaners site, which is the subject of this document, consists of soil, soil gas, and groundwater volatile organic compound (VOC) contamination. An operable unit represents a portion of the site remedy that, for technical or administrative reasons, can be addressed separately to eliminate or mitigate a release, threat of release, or exposure pathway resulting from the site contamination. Operable Unit No. 4 is located at 1900 North Street in the Village of Endicott, New York (Figure 4). The site currently consists of an open asphalt-paved parking area with smaller lawn areas. The site is bounded to the west by Arthur Avenue, to the north by North Street, to the east by Jackson Avenue, and to the south by residential properties. The area surrounding the site generally consists of commercial and industrial properties along North Street with residential properties along Arthur Avenue and Jackson Avenue

The remaining operable units for this site, identified in Figure 2, are not addressed by this ROD but have either been addressed in a previous ROD (OU No. 6) or will be addressed in subsequent RODs. The areas that encompass those operable units were previously addressed as part of the RCRA Corrective Action program, but are now being re-evaluated under an Order on Consent. The current elements of the groundwater remedial program for the on-site and off-site areas are identified in Figure 3. VOCs are detected in groundwater present in two geologic units beneath the site, the bedrock and the glacial outwash units, the latter containing the Upper Aquifer.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

A detailed history of property ownership and site operations for the overall site including the location of chemical storage and handling areas and a chronology of reported chemical spills is

described in the "Final Pre-characterization Technical Memorandum Operable Unit No.1: Railroad Corridor Source Area and Operable Unit No. 2: North Street Area" (July 14, 2006) report. The following information was derived from that report.

The Former IBM Endicott site was first developed for manufacturing in 1901 by predecessors to the Endicott-Johnson Corporation (EJ). Over time, IBM's operations at the site expanded and the EJ operations shrank. During the 1930s through 1960s the majority of EJ's properties within OUs No. 1 and No. 2 were sold to IBM. In the 1950s and 1960s, IBM operations at the site shifted from the machining and assembling of metal parts and finishing the parts by painting or plating to the manufacture of mid-range mainframe computers. This was an integrated operation involving many chemical and physical processes. Bulk storage and chemical handling evolved during this period of manufacturing. In the 1950s through late 1960s, chemicals primarily arrived on site in 55-gallon drums. During the late 1950s through late 1960s, bulk storage of virgin chemical and liquid wastes in above-ground and underground storage tanks began to be utilized in areas proximate to the principal manufacturing buildings. By the early 1970s, chemical storage began to shift to centralized bulk storage areas. Starting in the early 1980s, primary operations at the facility shifted to manufacture of electronic components to support other IBM locations. During the 1980s through 2002 when the site was sold to Huron Real Estate Associates, LLC, the use of solvents generally decreased and certain solvents, such as Freon 113, trichloroethene (TCE), 1,1,1-trichloroethane (TCA), and tetrachloroethene (PCE) were eliminated from the production process.

Prior to a 1979 reported release of TCA there were no reported releases of VOCs at the site. Given the disparity between the mass of VOCs that have been removed from the groundwater (approximately 800,000 pounds) and the reported mass of that spill (4200 gallons), it is apparent that most of the site contamination is associated with unknown or unreported historical releases.

As the IBM computer and electronics operations grew, the company purchased residential and commercial properties in the Village of Endicott primarily to provide parking facilities for its expanding workforce. The former Ideal Cleaners site (Operable Unit No. 4, which is the subject of this ROD) was one such property.

The former Ideal Cleaners site and surrounding neighborhood were initially developed between 1918 and 1927. Between 1927 and 1965 operations at OU No. 4 included auto sales and service, electrical contracting, and retail sales. A review of ownership records indicates dry cleaning operations were present at OU No. 4 from about 1965 to 1985. In 1985, IBM purchased the property for use as a parking lot. Although IBM did not use the property for anything other than a parking lot, it is thought that past use of the property by previous owners resulted in the release of PCE to the soil and groundwater at the site.

3.2: Remedial History

In 1980, the Department listed the Former IBM Endicott site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

Remedial investigations at this site began in early 1979 as a voluntary action by IBM under its Corporate Groundwater Protection Program. Following the discovery of a VOC release in December 1979, IBM reported these conditions to the Department. Beginning in 1980, IBM conducted additional investigations and initiated remedial actions under the oversight of the Department's Division of Water (DOW). DOW oversight continued for a period of approximately twelve years until 1992 when the remedial actions being performed at this site were incorporated into the site's 6 NYCRR Part 373 Resource Conservation and Recovery Act (RCRA) Permit (the Permit). At the time of issuance of the Permit, the site had been reclassified to a Class 4 (which means the site was properly remediated but requires continued management) and the Department determined that the remedial actions in effect at the time were protective of human health and the environment. In 2004, based on the Department's emerging recognition that vapor intrusion associated with on-site and off-site soil and groundwater contamination represented a previously unanticipated potential threat to human health, the site was reclassified to Class 2. Subsequently, IBM and the Department entered into an Order on Consent that requires IBM to further evaluate and enhance the site remedial program. From January 1980 through December 2008, IBM removed approximately 800,000 pounds of VOCs from the groundwater in their site-wide system. Most of the contamination is TCA, and most has been contained on site as a result of the operation of the on-site remedial systems. Additionally, IBM initiated the Groundwater Vapor Project (GVP), during which they identified and mitigated structures where soil vapor intrusion was a concern.

In general, OU No. 4 includes the area defined as "Off-Site Capture Zone B" in the May 17, 2004 Supplemental Groundwater Assessment (SGA) Final Report. As described in the SGA report, OU No. 4 consists of an area of the Upper Aquifer that:

- is within the hydraulic limits of capture for off-site extraction wells EN-185, EN-195, and EN-222;
- exhibits a distinctive chlorinated ethene chemical signature characterized by the presence of tetrachloroethene (PCE) and/or its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC);
- includes monitoring locations where the presence of light non-aqueous phase liquid (LNAPL) from an upgradient source has been identified; and
- includes the apparent widespread dissolved-phase presence of petroleum hydrocarbons suggestive of oils and/or fuels.

Although the Former IBM Endicott Facility, including OU No. 4, was sold to Huron Real Estate Associates, LLC in 2002, IBM remains responsible for development and implementation of the site remedial program.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Department and the International Business Machines Corporation (IBM) entered into a Consent Order on August 4, 2004. The Order obligates the responsible parties to implement a Site-Wide

Source Area Evaluation, Supplemental Remedial Investigation (SRI), Focused Feasibility Study (FFS), and Interim Remedial Measure (IRM) as set forth below:

- OPERABLE UNIT 1: Railroad Corridor Source Area: Perform SRI, FFS, and IRM.
- OPERABLE UNIT 2: North Street Area: Perform SRI, FFS and IRM.
- OPERABLE UNIT 3: Plume Reduction in Southern Area: Perform SRI, FFS, and IRM.
- OPERABLE UNIT 4: Ideal Cleaners Area: Perform SRI and FFS.
- OPERABLE UNIT 5: Building 57 Area: Perform SRI and FFS.
- OPERABLE UNIT 6: Plume Control in Bedrock Groundwater: Perform SRI, FFS, if appropriate, and IRM.
- OPERABLE UNIT 7: Assessment of On-Site Sewers: Perform SRI.

At such time as the Department determines that it is appropriate to choose a comprehensive remedy for the site, an operable unit, or any portion of the site, the Department shall prepare and release for public comment a Proposed Remedial Action Plan (PRAP) and, after soliciting public comment on the PRAP, select a remedial action for the site, operable unit, or portion of the site in a Record of Decision (ROD). The ROD shall be appended to the Order, and the remedial measures implemented as set forth in the Order.

SECTION 5: SITE CONTAMINATION

A supplemental remedial investigation/feasibility study (SRI/FS) has been conducted at OU No. 4 to evaluate the alternatives for addressing the significant threats to human health and the environment.

5.1: Summary of the Supplemental Remedial Investigation

The purpose of the SRI was to more clearly define the nature and extent of any contamination resulting from previous activities at the site. The SRI of OU No. 4 was conducted between July 2003 and January 2006, and augmented by an investigation conducted as part of an evaluation of potential interim remedial measures. The field activities and findings of the investigation are described in the January 30, 2006 Supplemental Remedial Investigation Report and the May 28, 2008 Evaluation of Potential Interim Remedial Measures Report (EPIRM).

A program of groundwater and soil quality sampling for VOCs, semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) was performed in several phases at the former Ideal Cleaners property. (Additionally, a vapor intrusion investigation and mitigation program was conducted throughout the Village of Endicott in areas potentially impacted by contamination associated with the entire Former IBM Endicott site.)

In essence, Operable Unit No. 4 is comprised of two main contaminant components:

1. A source area associated with past disposal (probably due to leaks or spills) of PCE that has contaminated the soil from the near surface to the glaciolacustrine layer that forms the base of the Upper Aquifer.

2. A PCE-series groundwater plume (CVOC plume) that extends 1,200 feet from the source area south to the groundwater recovery wells installed by IBM in the early 1980s.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil and groundwater contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's *Ambient Water Quality Standards and Guidance Values* and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's 6 NYCRR Part375-6 Soil Cleanup Objectives.

Based on the SRI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized in Section 5.1.2. More complete information can be found in the SRI report and the Evaluation of Potential Interim Remedial Measures (EPIRM) Report.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

Site Conditions Prior to the In-Situ Thermal Treatment Interim Remedial Measure (IRM)

Soil and Groundwater Contamination

As described in the SRI and EPIRM reports, many soil and groundwater samples were collected to characterize the nature and extent of contamination. Historically, groundwater and soil vapor were addressed under the remedial programs described in Section 3 above. Surface soil contamination identified during the SRI was addressed during the In-Situ Thermal Treatment IRM described in Section 5.2.

Estimates of the lateral and vertical extent of PCE-series compounds in soil is based on advancement of 58 membrane interface probe soil borings and collection and analysis of 763 soil samples for VOC analysis. The soil samples were collected from 110 soil borings at 84 drilling locations (Figure 5). A subset of soil samples collected from the oil smear zone were analyzed for total petroleum hydrocarbons and diesel range organics to assess PCE presence in soil with a portion of the soil porosity filled with oil as well as water. The magnitude and extent of site-related contamination (PCE and its degradation products) in the source area that existed prior to implementation of the In-

Situ Thermal Treatment IRM is depicted in the cross-sections of Plate 1. As seen on the cross-sections, the PCE source contamination (soil) was largely confined to the Ideal Cleaners property area. In addition, the site soil and groundwater has been contaminated by the presence of petroleum compounds (LNAPLs) that have migrated from the former Endicott Forging site. (DEC Spill Site No. 0365048) and form a "smear zone" associated with LNAPL deposition during periodic changes in the water table elevation.

Groundwater contamination identified during the SRI/FS is being addressed under the groundwater IRM described in Section 3.2. Figure 6 depicts both the historic PCE-series and the historic petroleum groundwater plumes. The plumes terminate in the area of hydraulic capture of groundwater extraction wells located northwest of the intersection of Adams Avenue and Monroe Street. Extracted groundwater is treated in IBM's Adams Avenue Groundwater Treatment Facility (Adams GTF). The former Endicott Forging property is the known source of the petroleum compounds and is currently the subject of remediation in the form of LNAPL recovery efforts being managed by the Department.

As summarized in Table 1 and Table 2, the main categories of site-related contaminants that exceeded their SCGs are volatile organic compounds. Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for soil. Except for a few isolated "hits", metals and non-petroleum related semi-volatile organic compounds were not detected at concentrations that exceeded the unrestricted 6NYCRR Part 375-6 SCOs for soil or the 6 NYCRR Part 703 groundwater standards. The detailed sampling results are presented in the January 30, 2006 *Ideal Cleaners Supplemental Remedial Investigation Report* and in the May 29, 2008 *Evaluation of Potential Interim Remedial Measures Report*. For comparison purposes, where applicable, SCGs are provided in Table 1 and Table 2 for each medium.

Table 1 – Concentration Ranges of Constituents of Concern in Soil

Constituent	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
Concentration Range (ppm)	ND-2100	ND-54	ND-160	ND-3.3	ND-0.96
Part 375-6 Unrestricted Use Values (ppm)	1.4	0.7	0.25	0.19	0.02

ND = Not Detected

Table 2 – Concentration Ranges of Constituents of Concern in Groundwater

Constituent	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
Concentration Range (ppb)	ND-6800	ND-2749	ND-9800	ND-120	ND-1200
Part 705 Class GA Groundwater Standard (ppb)	5	5	5	5	2

ND = Not Detected

Soil Vapor, Subslab Vapor, and Air Contamination

Soil vapor contamination identified during the SRI/FS was addressed under the Groundwater Vapor Project IRM described in Section 3.2. The evaluation of the potential for soil vapor intrusion resulting from the presence of site-related soil and groundwater contamination was evaluated in 2003-2005 as part of the IBM Groundwater Vapor Project. The extent of the area impacted by vapor intrusion was defined and property owners were offered ventilation systems to address the potential vapor intrusion related exposures. Although cleanup of the site should ultimately eliminate the need for those systems, they will remain in operation and be maintained by IBM as long as necessary to preclude site-related exposures. In addition, IBM has an ongoing soil vapor monitoring program in place to track changes in the soil vapor concentrations and to confirm that the established limits of the ventilation area remain protective.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation and feasibility study. In addition to the IRMs for groundwater and soil vapor intrusion discussed above, IBM implemented an IRM to address the presence of site-related constituents in the Operable Unit No. 4 source area. The IRM utilized thermal conduction heating, also called in-situ thermal desorption (ISTD), to heat the target treatment area to temperatures in excess of 100°C to volatilize and remove contaminant mass. A total of 257 heater wells, 19 multi-phase (groundwater and soil gas) extraction wells, and 72 vapor extraction wells were installed for the IRM. Soil vapor and groundwater were extracted from the wells and conveyed to a multi-phase effluent treatment system consisting of vapor phase and liquid phase carbon. Monitoring and sampling of the system was conducted in order to track progress and ensure proper system operation. The monitoring included subsurface measurements of temperature and pressure, manifold pipe temperatures, flow rates, liquid levels, and electrical power usage. Treatment system sampling included both liquid and vapor phase influent and effluent sampling to measure PCE removal and to ensure compliance with applicable permits and regulations. Soil samples were collected and analyzed during and after treatment to monitor the progress and effectiveness of the ISTD. Based on the analytical data provided by the 55 treatment samples, all four stratigraphic units achieved compliance with the "unrestricted use" soil cleanup objectives (SCOs) specified in 6NYCRR Part 375-6. The average PCE concentration in the post-treatment samples was 0.04 ppm and the highest single sample concentration was 0.83 ppm. A detailed discussion of the pre- and post-treatment sampling results can be found in the June 15, 2010 *Final IRM Report, Operable Unit 4: Former Ideal Cleaners Area*. The in-situ thermal treatment IRM also substantially reduced the concentrations of petroleum related compounds that originated at an upgradient source (the Endicott Forging property), however future migration of the petroleum plumes from that site could result in recontamination of the Ideal Cleaners property with those constituents.

Current Site Conditions – Soil

Subsurface soil contamination identified during the SRI/FS was addressed during the in-situ thermal treatment IRM. Post-treatment soil sampling results confirm that the IRM was successful in reducing the concentrations of site-related constituents to levels less than the "unrestricted use" SCOs set forth in 6NYCRR Part 375-6 (see Table 1 above). For illustrative purposes, Table 3 below depicts the pre- and post-treatment soil concentrations of PCE at the site.

Table 3 – OU 4 Confirmation Sampling March 2010

Cinder Fill

Sample ID	Depth (feet bgs*)	PCE Conc (mg/Kg)	
		Pretreatment	Post-treatment
CS5B4	3.5 to 4	5	0.005
CS11B4	3.5 to 4	15	0.003
CS14C4	5.5 to 6	4.2	0.004
CS15E1	8 to 8.5	12	0.003
CS17B4	3.5 to 4	40	0.0025
CS19E2	8.5 to 9	1600	0.024
CS22B3	3 to 3.5	12	0.088
CS27B3	3 to 3.5	4.2	0.016
CS29B4	3.5 to 4	59	0.051
CS32B3	3 to 3.5	8.9	0.001
CS35B2	2.5 to 3	330	0.017
CS42E1	8 to 8.5	25	0.004
CS43E2	8.5 to 9	25	0.0025
CS44D1	6 to 6.5	50	0.022
CS46C3	5 to 5.5	12	0.058
CS47B4	3.5 to 4	4.6	0.16
CS48B3	3 to 3.5	2.7	0.04
CS51B3	3 to 3.5	50	0.004
CS52B3	3 to 3.5	130	0.029
CS58B2	2.5 to 3	0.15	0.1

Soil Fill

Sample ID	Depth (feet bgs*)	PCE Conc (mg/Kg)	
		Pretreatment	Post-treatment
CS29F2	10.5 to 11	110	0.001
CS35C1	4 to 4.5	12	0.004
CS42G1	12 to 12.5	6.9	0.001
CS43G2	12.5 to 13	6.9	0.003
CS44E2	8.5 to 9	69	0.008
CS47C2	4.5 to 5	8.7	0.83
CS51E3	9 to 9.5	69	0.0025

Smear Zone

Sample ID	Depth (feet bgs*)	PCE Conc (mg/Kg)	
		Pretreatment	Post-treatment
PST27M2#	24.5 to 25	0.11	0.001
PST28L4#	23.5 to 24	630	0.001
CS5K4	21.5 to 22	2100	0.003
CS11L1	22 to 22.5	2100	0.001
CS14K1	20 to 20.5	37	0.003
CS15J4	19.5 to 20	14	0.125
CS17J4	19.5 to 20	6.3	0.003
CS19K2	20.5 to 21	4.4	0.004
CS22J3	19 to 19.5	1.85	0.0025
CS27J2	18.5 to 19	0.18	0.0025
CS29J3	19 to 19.5	25	0.0025
CS35J1	18 to 18.5	5.3	0.003
CS43J1	18 to 18.5	NS	0.0025
CS44J2	18.5 to 19	NS	0.002
CS46J3	19 to 19.5	NS	0.003

Lacustrine Silt

Sample ID	Depth (feet bgs*)	PCE Conc (mg/Kg)	
		Pretreatment	Post-treatment
PST28M2#	24.5 to 25	1.2	0.001
CS5M1	24 to 24.5	18	0.003
CS11M3	25 to 25.5	18	0.023
CS19M1	24 to 24.5	34	0.3
CS14M2	24.5 to 25		0.015
CS17L4	23.5 to 24		0.003
CS27L4	23.5 to 24		0.002
CS29L3	23 to 23.5		0.003
CS35K3	21 to 21.5		0.0025
CS44L2	22.5 to 23		0.0025

bgs = below ground surface NS = not sampled

Current Site Conditions – Groundwater

As discussed in the *Focused Feasibility Study Report* (June 2010), the overall mobility of the CVOC groundwater plume in OU No. 4 is limited by ongoing groundwater extraction operations west of the intersection of Adams Avenue and Monroe Street that began in the 1980s. Results of water quality

monitoring since late 2003 suggest the CVOC groundwater plume is stable or declining. Monitoring wells immediately downgradient of the extraction wells have already achieved the 6 NYCRR Part 703 groundwater standards. During the past five years, declining trends for specific monitoring wells near the apparent centerline of the CVOC plume include the following:

- EN-387/387A – Ten-fold declines in PCE, TCE, cis-1,2-DCE and vinyl chloride.

- EN-394 – In aggregate, greater than ten-fold declines in cis-1,2-DCE and vinyl chloride with PCE and TCE generally not detected. The variability in the cis-1,2-DCE and vinyl chloride data are believed to be due to variations in groundwater flow in the area of this well due to the limited saturated thickness of the Upper Aquifer.

- EN-080 and EN-381 – Ten-fold declines in cis-1,2-DCE and two- to four-fold declines in vinyl chloride with PCE and TCE not detected or below 5 µg/L.

The isoconcentration contour maps for PCE and its daughter products (Figures 7 – 10) portray a relatively abrupt decline in PCE and TCE groundwater concentrations 200 to 300 feet downgradient of the former PCE source area, whereas degradation of cis-1,2-DCE and vinyl chloride is less pronounced. This spatial pattern is consistent with what would be expected given that cis-1,2-DCE and vinyl chloride have a relatively slower rate of breakdown as compared to PCE and TCE. The widespread petroleum hydrocarbon presence and oil smear zone provides a source of carbon that likely assists in driving the reductive breakdown. Evidence for transformations indicative of biodegradation breakdown mechanisms include the spatial distribution of PCE and its daughter products, the presence of certain transformation indicator parameters (relatively elevated iron and manganese together with ethane, ethene and methane confirm the presence of reducing conditions), and the presence of dechlorinating bacteria at population densities suggestive of efficient reductive dechlorination.

It is important to note that the above listed trends define a stable or declining plume developed prior to performance of the ISTD pilot test and full-scale IRM. Because the in-situ thermal treatment IRM was just completed, the post-treatment groundwater monitoring data are not sufficient to fully assess the impacts of the source area cleanup on groundwater quality. However, the most recent trends from monitoring well EN-387, which is located about 150 feet downgradient of the pilot test thermal treatment area and about 90 feet downgradient of the southern limits of the full-scale ISTD treatment area, suggest that the historic reduction in the concentration of site-related parameters in the downgradient wells may accelerate in response to the cleanup of the source area (Figure 11).

5.3: Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in the SRI report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements:

1. a contaminant source,
2. contaminant release and transport mechanisms,
3. a point of exposure,
4. a route of exposure, and
5. a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no completed exposure pathways associated with OU No. 4 because the interim remedial measure has reduced contaminant concentrations in soil to levels below concern and the remaining contaminated groundwater is not used for potable purposes. Additionally, measures have previously been taken to address concerns related to soil vapor intrusion in adjacent structures.

Potential exposure pathways associated with the remaining contamination are limited to ingestion of or direct contact with contaminated groundwater. This is unlikely because groundwater is not easily accessible and is not a viable aquifer. A potential exposure pathway exists for workers who may come into contact with groundwater while drilling or sampling.

Additional exposure pathways are associated with the IBM Endicott site as a whole. However, any immediate exposure concerns have been addressed by actions taken as part of other operable units. Included in these actions is the installation of mitigation systems at 450 properties in the Village of Endicott to address exposures related to soil vapor intrusion. Additionally, IBM has a comprehensive groundwater extraction, treatment, and monitoring plan in place to ensure that the quality of the shallow groundwater is improving, thus reducing the exposure potential. Exposure to site-related contaminants via drinking water is not a concern because the public water supply wells do not draw from the bedrock groundwater. Additionally, the Village of Endicott is served by a public water supply which is frequently tested to ensure that the water distributed to consumers complies with drinking water standards.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site prior to the IRM. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

Since 1980 IBM has sought to reduce the spread of site-related groundwater contamination by capturing it in pumping wells and treating it to remove the VOCs. The primary contaminants of concern are 1,1,1-trichloroethane (TCA), trichloroethene (TCE), tetrachloroethene (PCE) and their breakdown products. The degree of contamination is highest in the vicinity of IBM's former manufacturing complex along the railroad between Watson Boulevard and North Street and diminishes with distance from the site. The contamination is transported via groundwater flow from the source areas at the facility to off-site areas southwest of the plant. Some low-level (~10 ppb) groundwater contamination extends to the Susquehanna River. Samples from the river did not contain elevated levels of contaminants, therefore a viable exposure pathway to fish and wildlife receptors is not present.

Site contamination has also impacted the groundwater resource in the bedrock (Operable Unit No.6). IBM has implemented a remedy to contain, and ultimately reduce concentrations of the plume of VOCs that have been found in the bedrock groundwater.

At Operable Unit No. 4, releases from a former dry cleaning facility that operated at that location prior to its purchase by IBM have contaminated the soil and groundwater with PCE and its breakdown products. An in-situ thermal treatment IRM was implemented at OU No. 4. Implementation of the IRM has essentially eliminated the site-related volatile organic compounds from the source area soils. The cleanup of that source area should ultimately result in the attainment of site-related groundwater quality standards downgradient of the operable unit.

IBM has identified an area in the Village of Endicott above the groundwater contaminant plumes where mitigation of structures to preclude vapor intrusion was necessary. Mitigation systems have been installed at 450 properties.

An operation, maintenance, and monitoring program is used to ensure the effectiveness of the ongoing remedial measures and to track the progress of the on-site and off-site cleanup.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND SELECTED REMEDY

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous wastes disposed at the site through the proper application of scientific and engineering principles.

The in-situ thermal treatment IRM has been successful in restoring the soils to pre-disposal conditions. No additional actions are necessary to address the site soils.

The remedial objectives for groundwater and soil vapor at this site are:

Public Health Protection

Groundwater

- Prevent people from drinking groundwater with contaminant levels exceeding drinking water standards.

- Prevent contact with contaminated groundwater.
- Prevent inhalation of contaminants from groundwater.

Soil Vapor

- Mitigate impacts to public health resulting from existing or potential soil vapor intrusion into the indoor air of buildings at or near a site.

The potential for human exposures are being addressed by the ongoing groundwater remedial program and a vapor intrusion mitigation and monitoring program. A public water supply system provides residents in the area with drinking water.

Environmental Protection

Groundwater

- Restore the groundwater aquifer to meet ambient groundwater quality criteria to the extent feasible.
- Prevent discharge of contaminated groundwater to surface water.

The main SCGs applicable to this project are presented in Table 1 and Table 2.

The Department believes that the IRMs have accomplished the remediation goals and satisfied the SCGs for the site provided that the groundwater remedial and vapor intrusion mitigation programs continue to be operated and maintained in a manner consistent with their design.

Based on the results of the investigations at the site, the IRMs that have been performed, the evaluation presented here, and a review of comments received during the public comment period of the remedy selection process, the Department has selected No Further Action with continued operation of the groundwater remedial and vapor intrusion mitigation programs as the remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies all SCGs as described above. Overall protectiveness is achieved through meeting the remediation goals listed above.

Therefore, the Department concludes that No Further Action is needed other than operation, maintenance, monitoring, and institutional and engineering controls. The elements of the interim remedial measures (IRMs) already completed and the institutional and engineering controls are listed below:

1. Interim Remedial Measures:

a. In-Situ Thermal Treatment – The IRM has achieved the "unrestricted use" SCOs for soil.

b. Groundwater Remediation – The groundwater recovery wells and institutional controls to prevent future exposures would remain in operation on a continuing basis until the 6 NYCRR Part 373 groundwater quality standards for site-related constituents have been achieved or the Department determines that natural

attenuation processes will be sufficient to attain those standards over time. Collected groundwater will be treated at an IBM Groundwater Treatment Facility.

c. Vapor Intrusion Mitigation – The ventilation systems installed in structures above the groundwater plume will be maintained by IBM until the Department determines they are no longer needed to prevent vapor intrusion related exposures to the Operable Unit No. 4 contaminants of concern.

2. Institutional and Engineering Controls

Continued implementation of the site-wide Operation, Maintenance and Monitoring Plan will include the following institutional and engineering controls:

a. monitoring of groundwater;

b. provisions for assessing the groundwater concentration trends to determine whether a contingent remedy should be considered;

c. monitoring of soil gas to track changes in the soil vapor concentrations and to confirm that the established limits of the ventilation area remain protective;

d. provisions for the continued proper operation and maintenance of the components of the remedy and associated IRMs;

e. imposition of an institutional control in the form of an environmental easement, if necessary, that would restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH.

The responsible party (IBM) will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies them in writing that this certification is no longer needed. This submittal will:

a. contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications;

b. allow the Department access to the site; and

c. state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

The operation of the components of the remedy will continue until the remedial objectives have been achieved or until the Department determines that continued operation is

technically impracticable or not feasible. If the Department determines that operation of the remedial system is no longer creating a capture zone that extends to the limits of the contaminant plume or no longer prohibits expansion of the plume, modification of the remedial system will be required.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of citizen participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list which included nearby property owners, elected officials, local media, and other interested parties was established.
- A fact sheet summarizing the proposed remedy and announcing a public meeting to discuss the proposed remedy was sent to interested parties.
- A public meeting was held in Endicott on August 25, 2010 to present and receive comments on the proposed remedy.
- A 30-day comment period was established and announced publicly.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Former IBM Endicott Facility
Operable Unit No. 4 - Former Ideal Cleaners
State Superfund Project
Village of Endicott, Broome County, New York
Site No. 704014

The Proposed Remedial Action Plan (PRAP) for Operable Unit No. 4 (Former Ideal Cleaners) of the Former IBM Endicott site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories in August, 2010. The PRAP outlined the remedial measure proposed for the contaminated soil, soil vapor, and groundwater at Operable Unit No. 4.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on August 25, 2010, which included a presentation of the remedial investigation and interim remedial measures for the Former Ideal Cleaners site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions, and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on September 21, 2010.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

No public comments were received.

APPENDIX B

Administrative Record

Administrative Record

Former IBM Endicott Facility
Operable Unit No. 4 - Former Ideal Cleaners
State Superfund Project
Village of Endicott, Broome County, New York
Site No. 704014

1. Proposed Remedial Action Plan, Former IBM Endicott Facility, Operable Unit No. 4, dated August, 2010, prepared by the Department.

2. Order on Consent, Index No. A7-0502-0104, between the Department and International Business Machines Corporation (IBM), executed August 4, 2004.

3. "Evaluation of Existing Corrective Measures Systems, Village of Endicott / Town of Union, Broome County, New York", Groundwater Sciences, P.C., April 30, 2004, prepared for IBM Corporation.

4. "Supplemental Groundwater Assessment Final Report, Village of Endicott / Town of Union, Broome County, New York", Groundwater Sciences, P.C., May 17, 2004, prepared for IBM Corporation.

5. "Final Pre-Characterization Technical Memorandum, Operable Unit#1: Railroad Corridor Source Area and Operable Unit# 2: North Street Area, Village of Endicott / Town of Union, Broome County, New York", Groundwater Sciences, P.C., July 14, 2006, prepared for IBM Corporation.

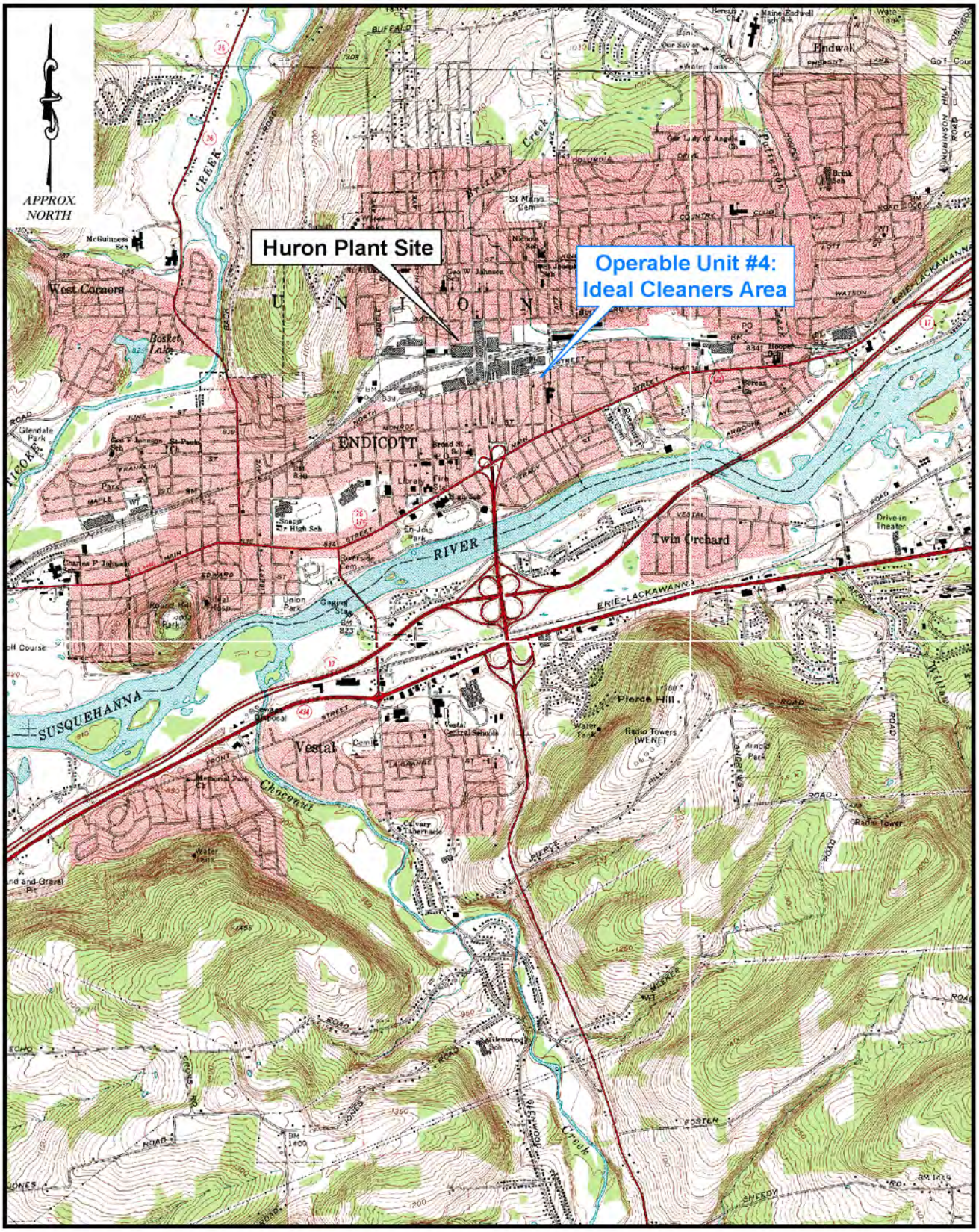
6. "Supplemental Remedial Investigation Report, Operable Unit 4, Village of Endicott / Town of Union, Broome County, New York", Groundwater Sciences, P.C., January 30, 2006, prepared for IBM Corporation

7. "Evaluation of Potential Interim Remedial Measures Report, Operable Unit 4, Village of Endicott / Town of Union, Broome County, New York", Groundwater Sciences, P.C., May 28, 2008, prepared for IBM Corporation.

8. "Final Report In-Situ Thermal Desorption, Operable Unit 4, Village of Endicott / Town of Union, Broome County, New York", TerraTherm, June 15, 2010, prepared for IBM Corporation.

9. "Focused Feasibility Study Report, Operable Unit 4, Village of Endicott / Town of Union, Broome County, New York", Groundwater Sciences, P.C., June 17, 2010, prepared for IBM Corporation.

10. "Remedy Proposed for Operable Unit No. 4, Former IBM Endicott State Superfund Site; Public Comment Period and Public Meeting Announced" Fact Sheet and Meeting Notice dated August 13, 2010, prepared by the Department.



Portion of the Endicott, NY and Maine, NY
7.5-minute USGS Quadrangles
(2000)

Figure 1

Former IBM Endicott Site
Site #704014

Locus Map

Scale
0 1500' 3000'

GROUNDWATER SCIENCES CORPORATION

22007-008-E1 / 11-09-07

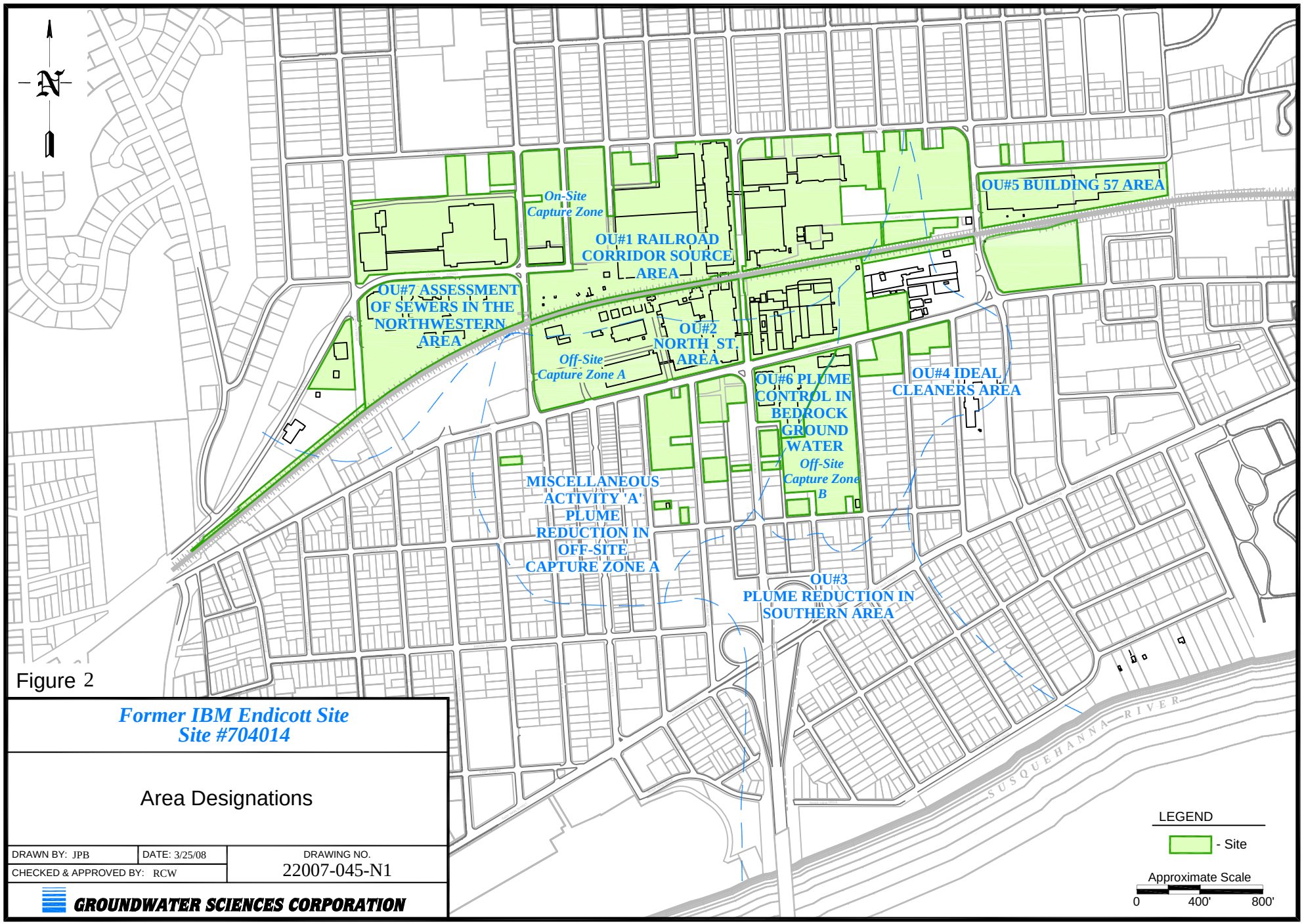


Figure 2

Former IBM Endicott Site
Site #704014

Area Designations

DRAWN BY: JPB	DATE: 3/25/08	DRAWING NO.
CHECKED & APPROVED BY: RCW		22007-045-N1

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N

On-Site Capture Zone

CLARK GTF

OU#5 BUILDING 57 AREA

EN-89R

EN-624

EN-623

HAYES AVENUE TRANSFER STATION

Discharge to Storm Sewer

D006

B046S

EN-428

EN-253

EN-219R

EN-107R

D005

EN-218

OU#1 RAILROAD CORRIDOR SOURCE AREA

OU#7 ASSESSMENT OF SEWERS IN THE NORTHWESTERN AREA

OU#4 IDEAL CLEANERS AREA

TOWN OF UNION / VILLAGE OF ENDICOTT

ROBBLE GTF

EN-154R

EN-276

OU#2 NORTH STREET AREA

OU#6 PLUME CONTROL IN BEDROCK GROUNDWATER

EN-284P

EN-D49

EN-78T

Off-Site Capture Zone A

Off-Site Capture Zone B

D001

JEFFERSON GTF

EN-451P

EN-133

EN-91T

GARFIELD GTF

ADAMS GTF

EN-92P

EN-92P

EN-120

EN-160

EN-194

EN-491T

EN-195

D003

EN-222

EN-185R

EN-492T

D002

EN-510T

EN-215T

EN-499T

EN-161T

MISCELLANEOUS ACTIVITY 'A' PLUME REDUCTION IN OFF-SITE CAPTURE ZONE A

EN-447T

EN-501T

OU#3 PLUME REDUCTION IN SOUTHERN AREA

LEGEND

- IBM Groundwater Treatment Facility (GTF)
- Pipeline Connected to IBM GTF (Above Ground)
- Pipeline Connected to IBM GTF (Below Ground)
- Extraction Well
- Injection Test Well
- Area Designations
- Town/Village Boundary
- D005 - Outfall Location & Designation

Approximate Scale
0 200' 400'

Figure 3

Former IBM Endicott Site
Site #704014

Elements of Current Extraction/Injection Well Systems (as of December 31, 2009)

DRAWN BY: JPB/MHM	DATE: 3/31/10	DRAWING NO. 22007-249-R1
CHECKED & APPROVED BY: RCW/MTL		

GROUNDWATER SCIENCES CORPORATION

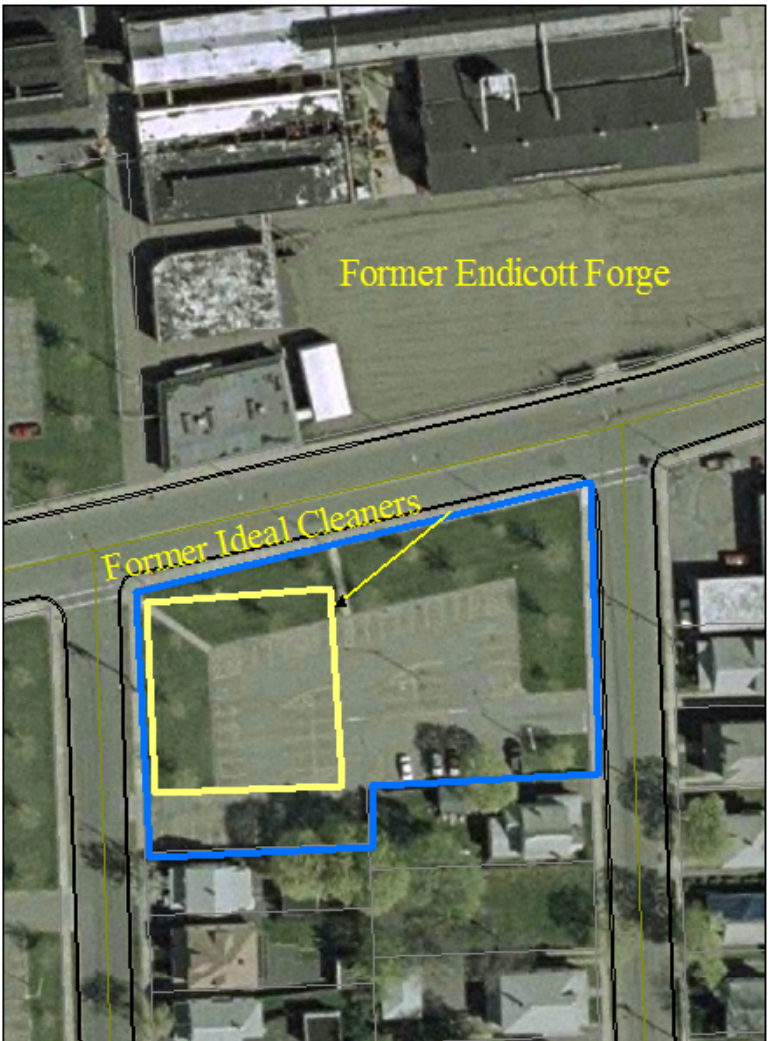


Figure 4 Former Ideal Cleaners Site Location

APPROX. NORTH

NORTH STREET

ARTHUR AVENUE

JACKSON AVENUE

EN-399 EN-129 EN-392 EN-392A EN-392B EN-392C EN-392D EN-391 EN-390 EN-389 EN-389A EN-389B EN-389C EN-389D EN-389E EN-389F EN-388 EN-387 EN-387A EN-387B EN-395 EN-395A

SB-312 SB-313 SB-314

GSB-1 GSB-2 GSB-3 GSB-4 GSB-5 GSB-6

GP1 GP1A GP2 GP2A GP2B GP3 GP3A GP4 GP5 GP5A GP6 GP6A GP6B GP7 GP8 GP9 GP9A GP10 GP11 GP12 GP13 GP14 GP15 GP16 GP17 GP18 GP19 GP20 GP21 GP22 GP23 GP24 GP25 GP26 GP27 GP28 GP29 GP30 GP31 GP32 GP33 GP33A GP34 GP35 GP36 GP37

MIP694 MIP696 MIP696A MIP698SB MIP698A MIP698B MIP698 MIP700SB MIP700A MIP700 MIP702SB MIP702 MIP704SB MIP704 MIP706 MIP706SB MIP706A MIP708SB MIP708 MIP710 MIP710A MIP710SB MIP712SB MIP712 MIP716 MIP716SB MIP718SB MIP718 MIP720SB MIP720 MIP722 MIP722SB MIP724 MIP724SB MIP724A MIP726SB MIP726 MIP728-30 MIP730A MIP730SB MIP435 MIP437 MIP437SB MIP437A MIP441SB MIP441 MIP442SB MIP442 MIP444 MIP446 MIP448 MIP448SB MIP448ASB MIP448BSB MIP451SB MIP451 MIP453SB MIP453 MIP455SB MIP455 MIP457SB MIP457 MIP459 MIP461 MIP463 MIP465SB MIP465 MIP467SB MIP467 MIP469SB MIP469 MIP471SB MIP471 MIP473SB MIP473 MIP475 MIP475SB MIP477 MIP477SB MIP479SB MIP479 MIP482SB MIP482 MIP484 MIP486 MIP486SB MIP488SB MIP488 MIP490 MIP490SB MIP492SB MIP492 MIP492A MIP494 MIP494SB MIP494A MIP498SB MIP498 MIP500 MIP502 MIP505SB MIP505 MIP507 MIP419SB MIP419A MIP419 MIP421 MIP421SB MIP421A MIP423 MIP423SB MIP425 MIP425SB MIP427 MIP427SB MIP431 MIP431SB MIP433 MIP433SB

LEGEND

- Location and Designation of Geotechnical Soil Boring (August 2007)
- Location and Designation of Soil Boring (2006-2007)
- Location and Designation of Soil Boring for Physical Testing Parameters (Sept. 2006)
- Location and Designation of Soil Boring (2004)
- Location and Designation of Membrane Interface Probe (Nov. 2006)
- Location and Designation of Membrane Interface Probe (May 2005)
- Location and Designation of Upper Aquifer Monitoring Well
- Location and Designation of Abandoned Upper Aquifer Monitoring Well
- Former Ideal Cleaners Property
- Parcel Boundaries (with Lot Numbers) *
- Former Ideal Cleaners Building (approximate)

** Parcel boundaries from Broome County tax maps (Binghamton, NY) and Butler Land Surveying, LLC (Little Meadows, PA; survey dated 11-1-07.)*

Scale 0' 20' 40'

Figure 5

Former IBM Endicott Site
Site #704014

Operable Unit #4: Ideal Cleaners Area
Exploration Location Map

DRAWN BY: JPB	DATE: 4/1/08	DRAWING NO.
CHECKED & APPROVED BY: RCW		22007-266-C2

GROUNDWATER SCIENCES CORPORATION

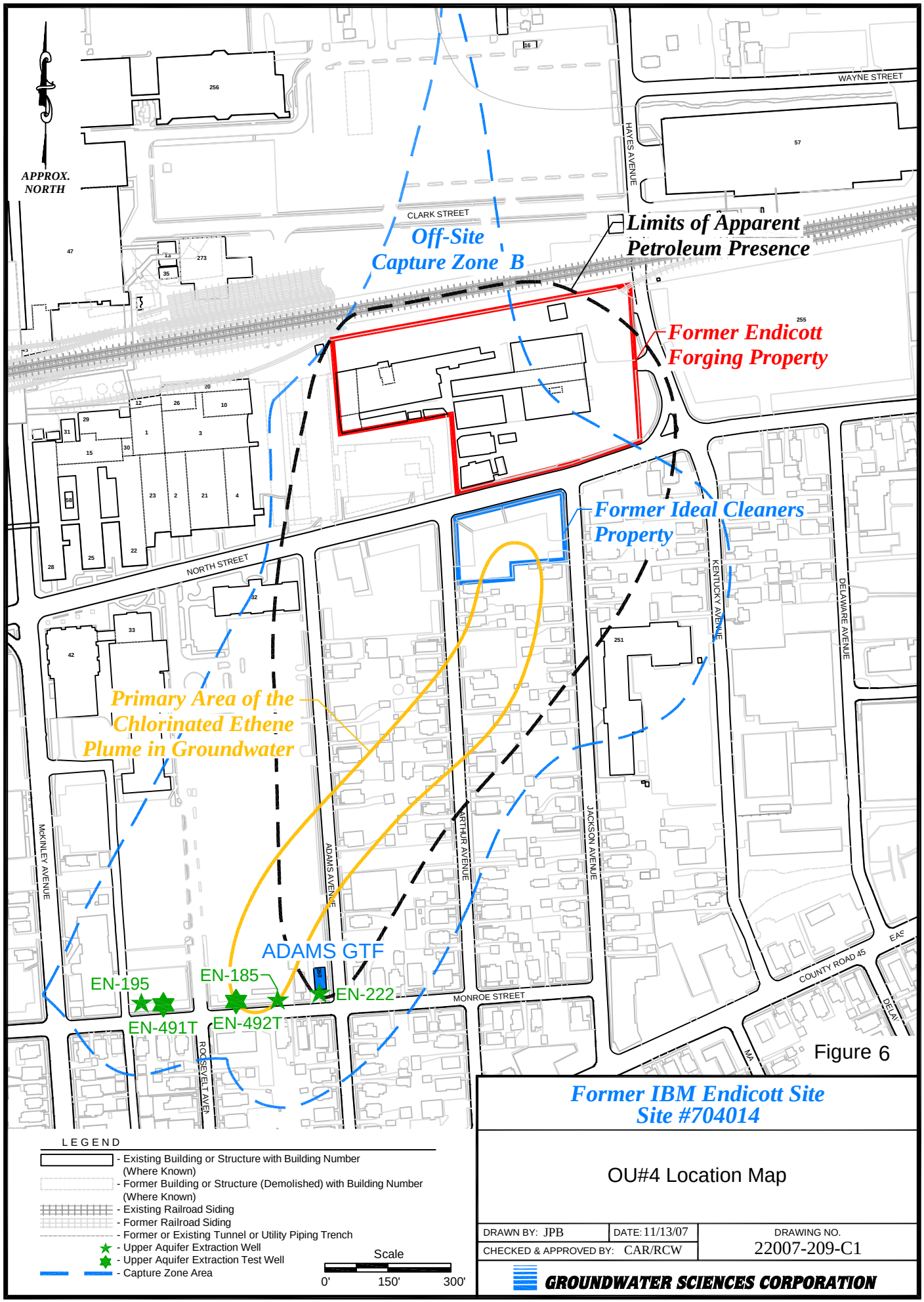


Figure 6

Former IBM Endicott Site
Site #704014

OU#4 Location Map

DRAWN BY: JPB	DATE: 11/13/07	DRAWING NO. 22007-209-C1
CHECKED & APPROVED BY: CAR/RCW		

GROUNDWATER SCIENCES CORPORATION

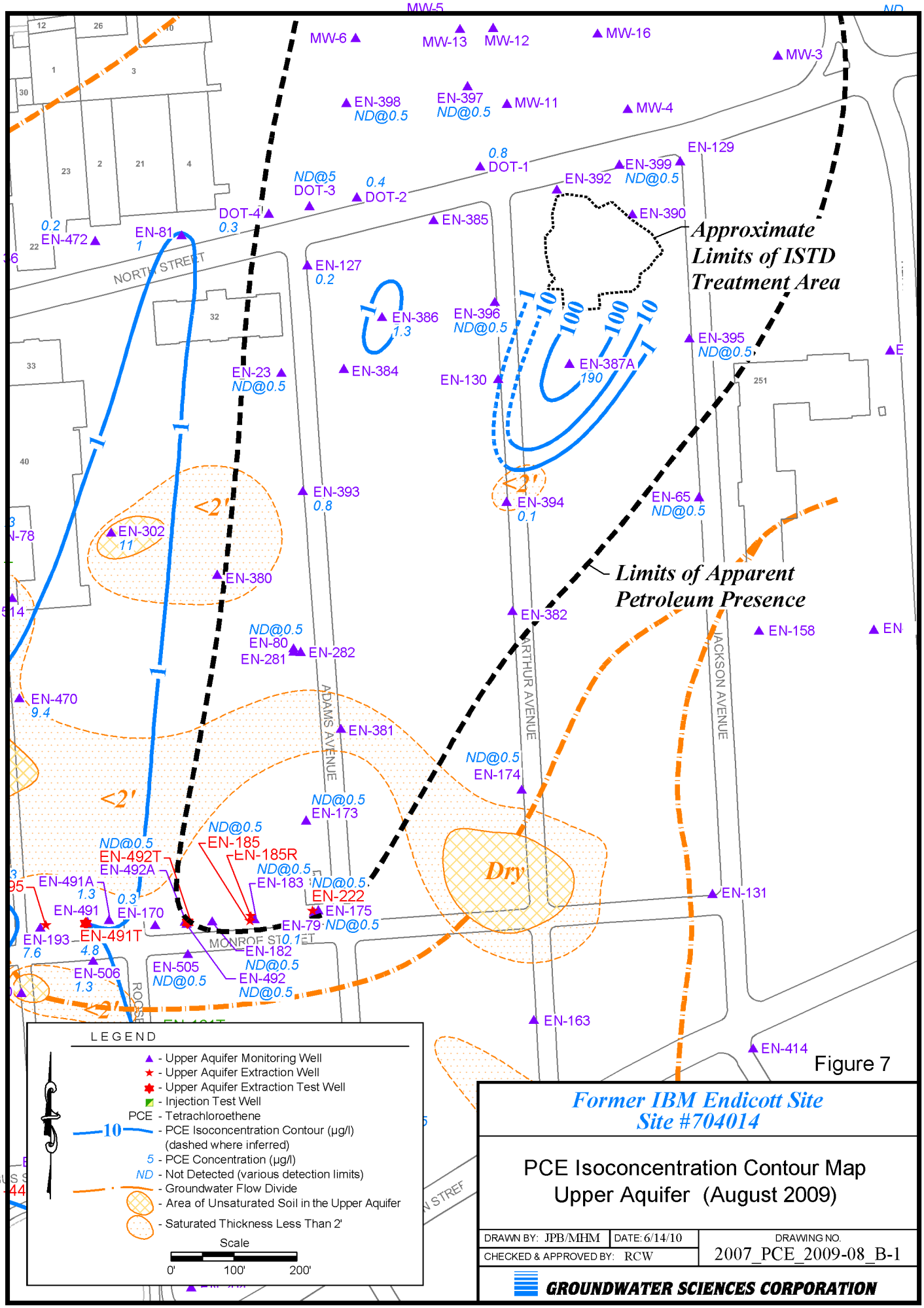


Figure 7

Former IBM Endicott Site
Site #704014

PCE Isoconcentration Contour Map
Upper Aquifer (August 2009)

DRAWN BY: JPB/MHM	DATE: 6/14/10	DRAWING NO.
CHECKED & APPROVED BY: RCW		2007_PCE_2009-08_B-1

GROUNDWATER SCIENCES CORPORATION

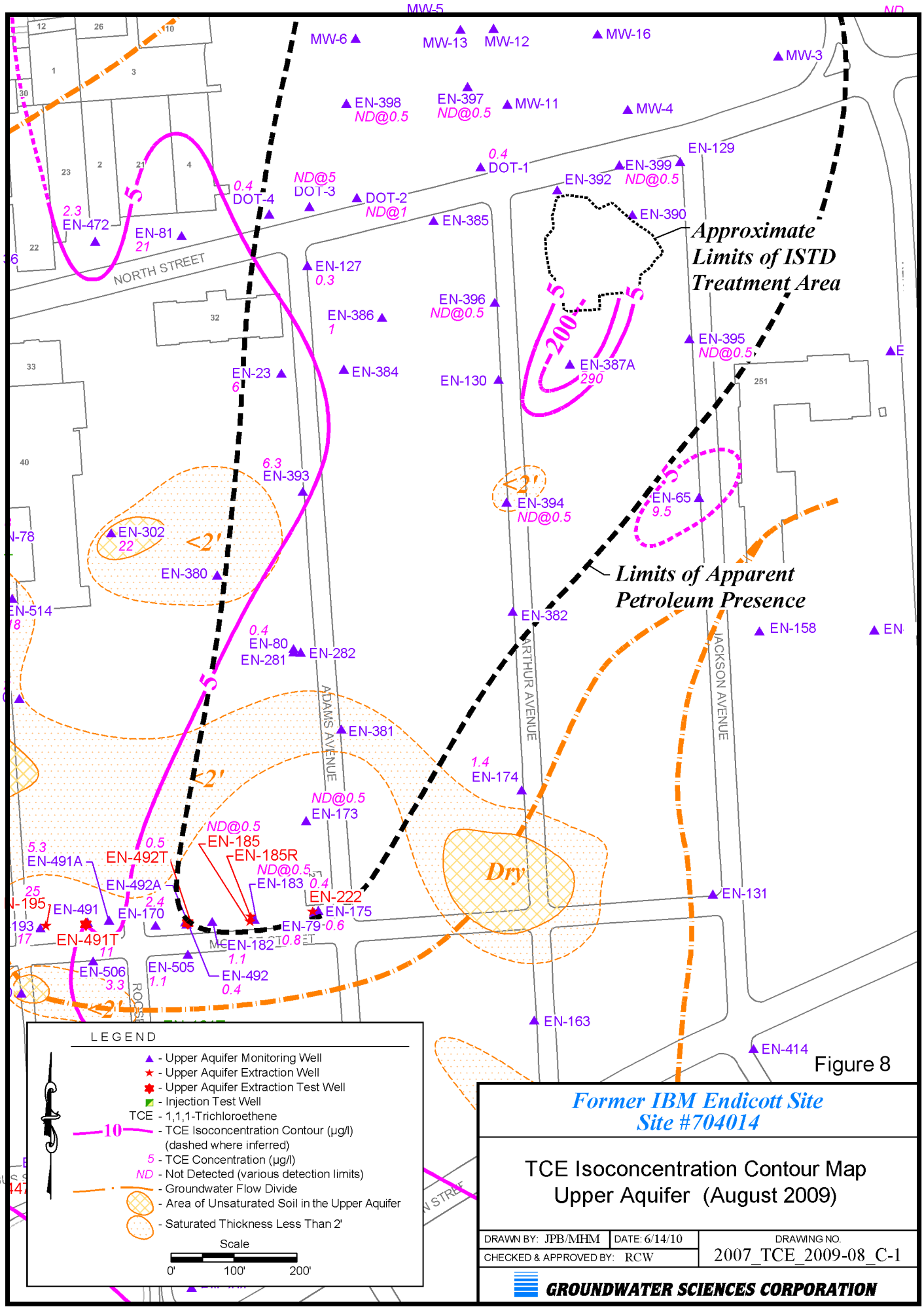


Figure 8

Former IBM Endicott Site
Site #704014

TCE Isoconcentration Contour Map
Upper Aquifer (August 2009)

DRAWN BY: JPB/MHM	DATE: 6/14/10	DRAWING NO.
CHECKED & APPROVED BY: RCW		2007_TCE_2009-08_C-1

GROUNDWATER SCIENCES CORPORATION

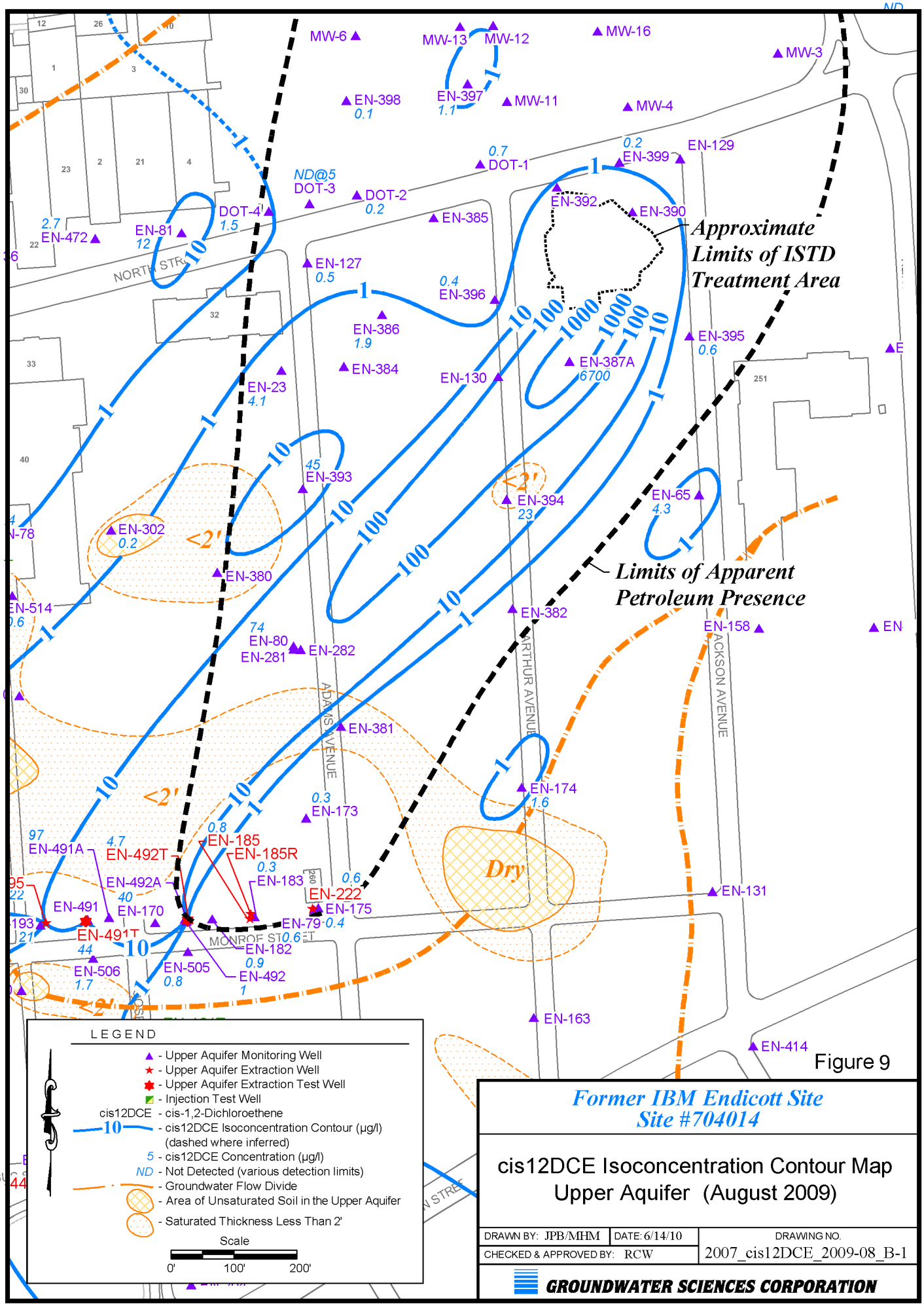


Figure 9

Former IBM Endicott Site
Site #704014

cis12DCE Isoconcentration Contour Map
Upper Aquifer (August 2009)

DRAWN BY: JPB/MHM	DATE: 6/14/10	DRAWING NO.
CHECKED & APPROVED BY: RCW		2007_cis12DCE_2009-08_B-1

GROUNDWATER SCIENCES CORPORATION

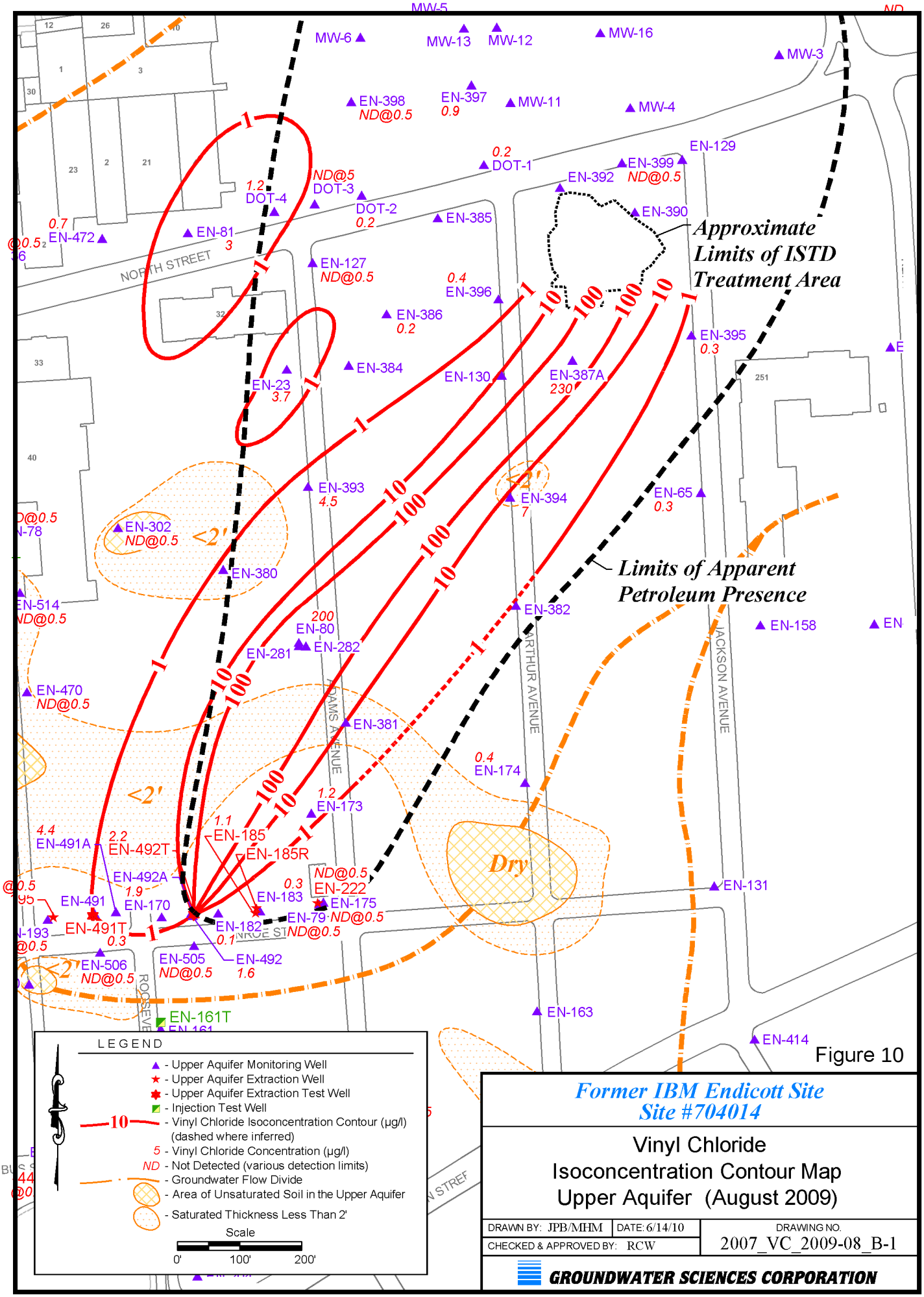


Figure 10

Former IBM Endicott Site
Site #704014

Vinyl Chloride Isoconcentration Contour Map Upper Aquifer (August 2009)

DRAWN BY: JPB/MHM	DATE: 6/14/10	DRAWING NO.
CHECKED & APPROVED BY: RCW		2007_VC_2009-08_B-1

GROUNDWATER SCIENCES CORPORATION

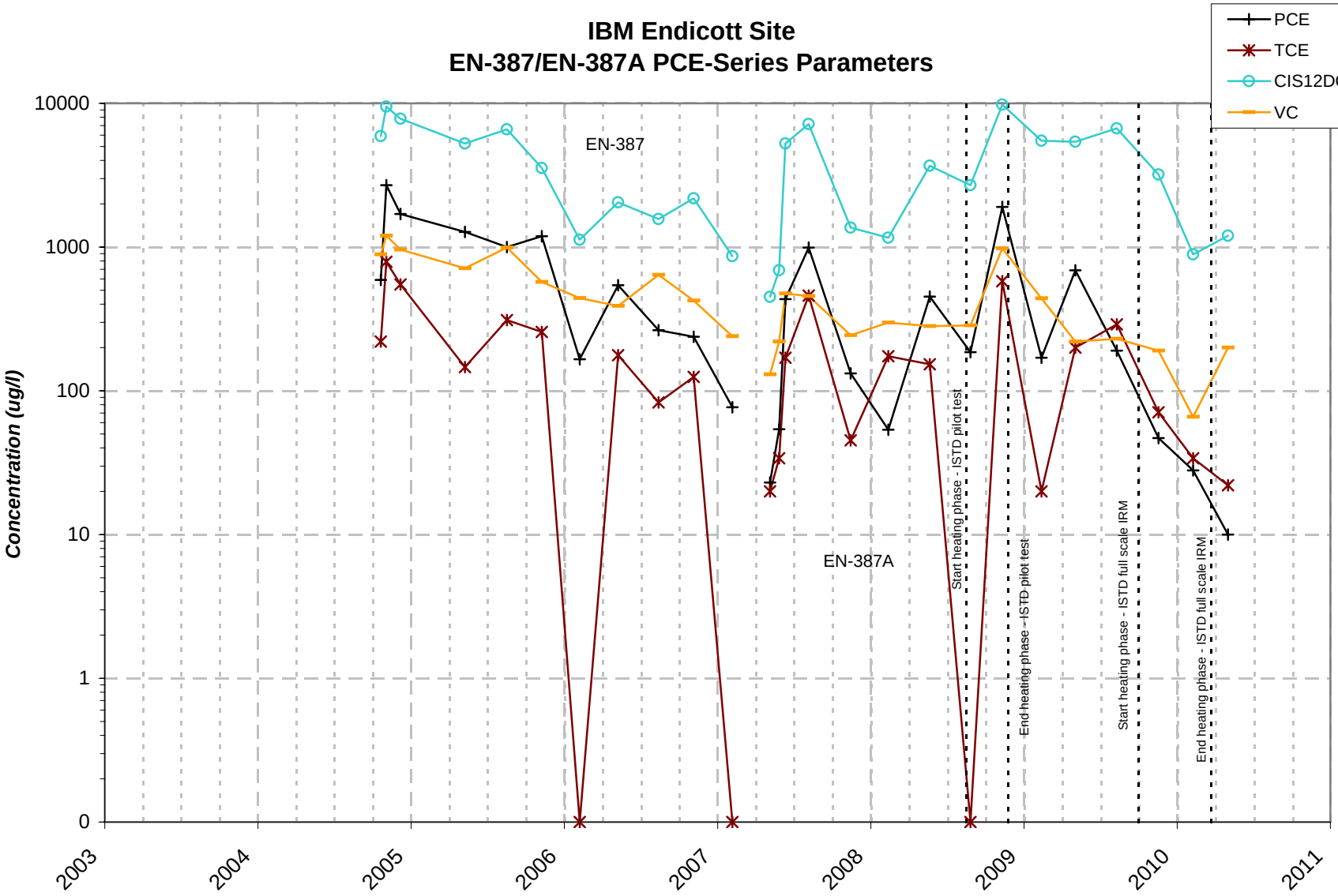
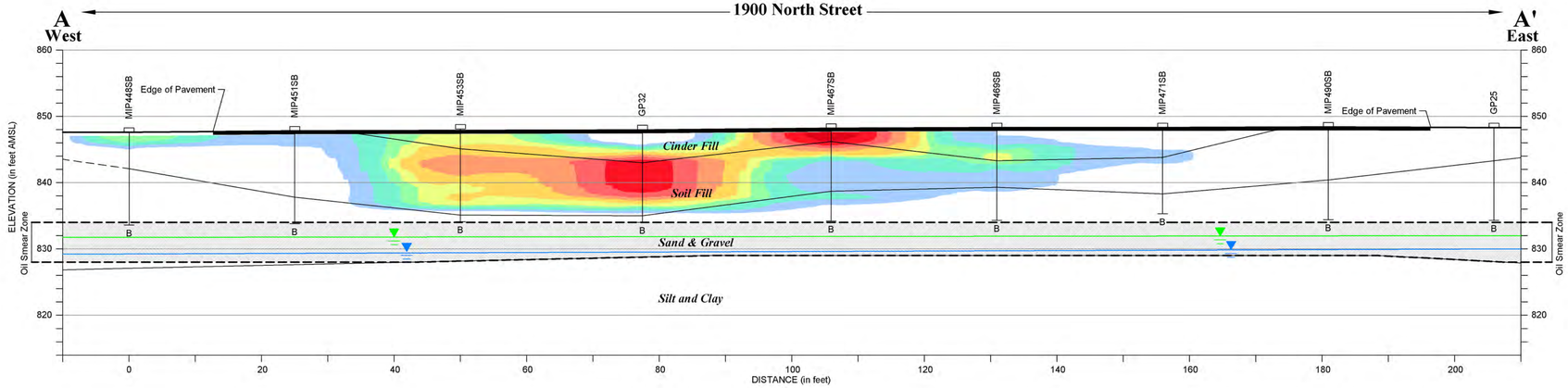
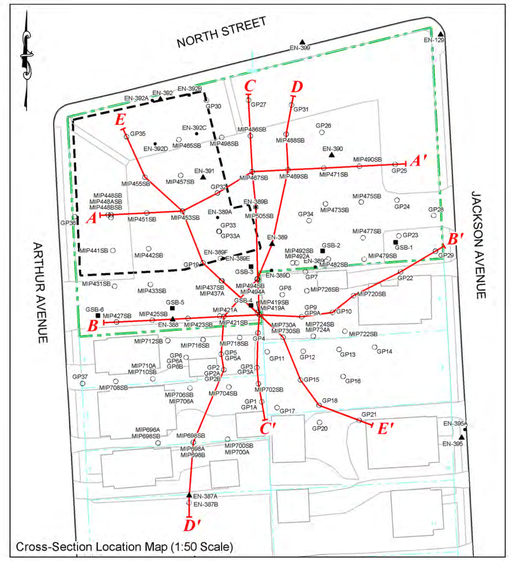
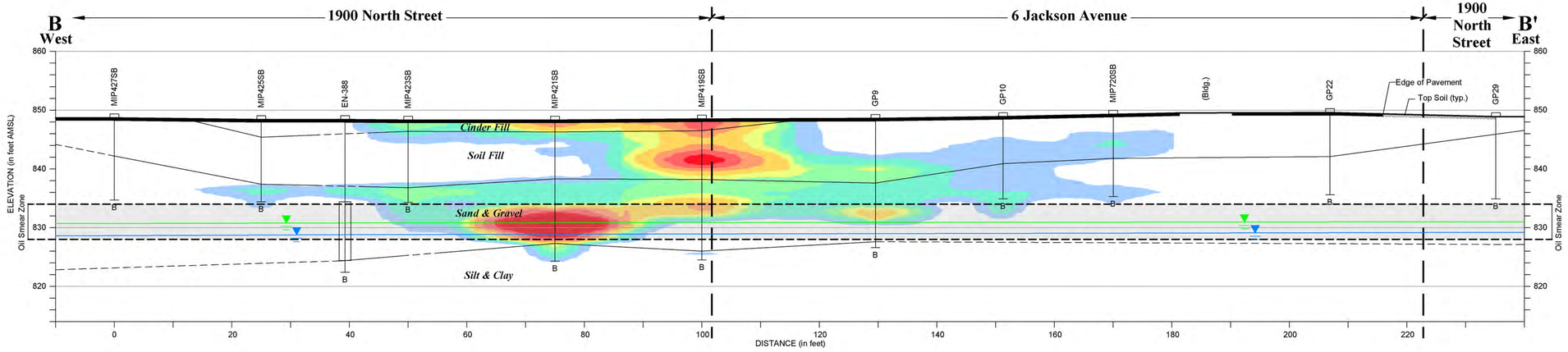


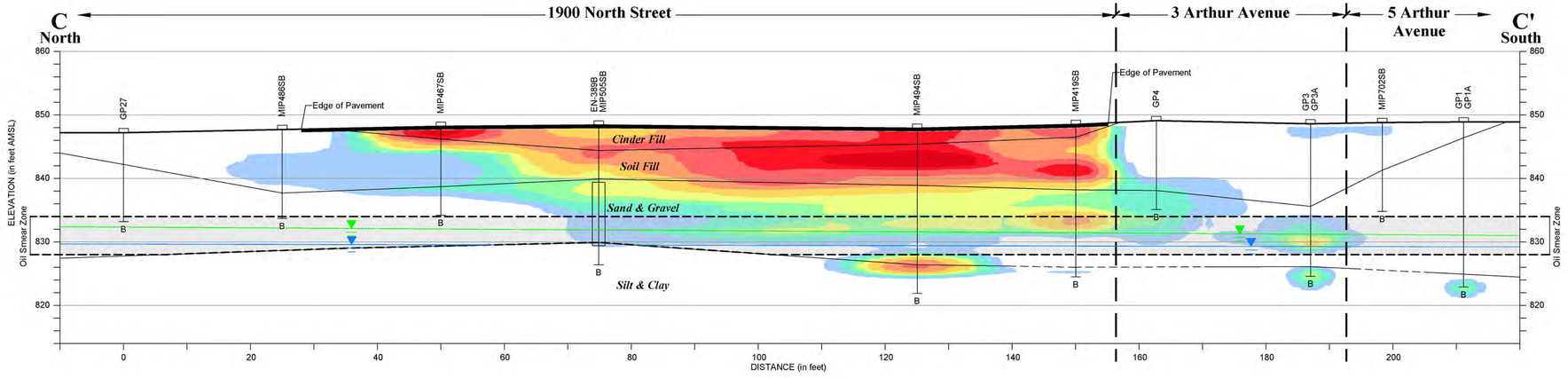
Figure 11 EN-387 Groundwater Quality Trends





Cross-Section Location Map (1:50 Scale)





LEGEND

MIPXXX
B
Geoprobe, Membrane Interface Probe or Monitoring Well (Dotted where Projected)

Well Screening

("B" Indicates Bottom of Screened Interval)

- Water Table (May 2005)
- Water Table (August 2007)

Vertical Scale
0 5 10'

Horizontal Scale
0 5 10'

PCE CONCENTRATION CONTOURS

0 - 560 µg/Kg
560 - 1,100 µg/Kg
1,100 - 2,200 µg/Kg
2,200 - 3,300 µg/Kg
3,300 - 5,000 µg/Kg
5,000 - 10,000 µg/Kg
10,000 - 20,000 µg/Kg
20,000 - 40,000 µg/Kg
40,000 - 80,000 µg/Kg
80,000 - 1,700,000 µg/Kg

Plate 1

Former IBM Endicott Site
Site #704014

Cross-Sections A-A' Through C-C'

DRAWN BY: JB\MBT	DATE: 4/1/08	DRAWING NO.
CHECKED & APPROVED BY: RCW		2007GOU4IDCarcaXS-3

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