WORK PLAN

TERMINATION OF
OPERATION AND MAINTENANCE
COLLECTION AND TREATMENT SYSTEM

NYSDEC SITE NO. 9-15-066, OPERABLE UNIT 2
CHEEKTOWAGA, NEW YORK

PREPARED BY

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1.0 INTRODUCTION

This Work Plan is for the progressive termination of the operation and maintenance (O&M) of the collection and treatment system installed as part of Operable Unit 2 of the Remedial Program at New York State Department of Environmental Conservation (NYSDEC) Site No. 9-15-066 in Cheektowaga, New York (the "Site"). CBS Corporation (CBS), with the assistance of Conestoga-Rovers & Associates, has prepared this Work Plan on behalf of the Respondents to the Order on Consent and Settlement Agreement, Index No. B9-0381-91-8 (the "Order") and in accordance with recent meeting discussions with NYSDEC. Under an agreement among the Respondents, CBS is managing the Remedial Program under the Order.

The collection and treatment system was designed to address groundwater in the central and southern portion of the Site. Figure 1 is a Site plan showing the location of this system and Site groundwater monitoring wells.

The planned termination of the collection and treatment system follows completion of remedial construction for both Operable Units 1 and 2 and six years of system O&M. The Respondents have concluded that termination of the ongoing activities is warranted based on the data collected during the O&M completed to date that provide a clear understanding of Site hydrogeology, groundwater interaction with the former storm sewer system, potential contaminant migration pathways, and potential human health and environmental exposures.

1.1 BACKGROUND

NYSDEC defined the requirements for the Remedial Program at the Site in Records of Decision (RODs) issued in March 1995 and December 1995 for Operable Units 1 and 2,

respectively. Operable Unit 1 addressed source control through excavation and on-site thermal treatment and the removal of impacted sediments from U-Crest Ditch. Operable Unit 2, which addressed groundwater remediation, called for active collection and treatment of groundwater in the central and southern portion of the Site and Site-wide groundwater monitoring. CBS completed the Operable Unit 1 remedial action and the remedial construction component of Operable Unit 2 in 2000. NYSDEC confirmed successful completion of remedial construction in accordance with the Order via letter dated June 27, 2002.

As source control actions were being completed, CBS began O&M of the installed remedial systems and the Site-wide groundwater monitoring. Since initiating O&M, nearly 30 million gallons of water have been recovered from the former Site storm sewers that now function as a collection system and the collected water has been treated through the on-site treatment system. Over this same time period, 15 synoptic groundwater monitoring events have been conducted.

1.2 ORGANIZATION OF WORK PLAN

Following this introductory section, Sections 2 and 3 describe the basis for the remedial systems that have been installed and are currently operating at the Site. Section 2 presents an overview of the Site hydrogeology, and Section 3 describes the remedial design. Section 4 summarizes what has been learned over the past six years of system O&M and how these findings have changed the Site conceptual model upon which the remedial systems were originally designed. Recognizing these changes, Section 5 describes the components of and the step-by-step processes for terminating system O&M. Section 6 presents the schedule for the described termination activities.

2.0 SITE HYDROGEOLOGY

2.1 SITE GEOLOGY

As described in the Remedial Investigation (RI) report (Dunn Engineering Company, September 1994), the Site is underlain with glacial till consisting predominantly of a clayey silt matrix with varying quantities of embedded fine to coarse sands, gravel, and rock fragments. The till ranges in thickness from about 30 to 50 feet and uniformly overlies bedrock at the Site. The RI also identified fill materials, typically 5 to 6 feet in thickness, overlying the till in portions of the Site. Since completion of the RI, the Niagara Frontier Transportation Authority (NFTA) has conducted significant Site redevelopment as part of the airport expansion. These Site redevelopment activities have resulted in fill thicknesses of 20± feet in some areas of the Site. Even with this additional fill placement, however, the fill remains discontinuous and does not extend to off-site areas. The gradation of the fill is highly variable, ranging from clayey soils to crushed concrete rubble.

Bedrock underlies the glacial till. The uppermost bedrock is comprised of light gray cherty limestone that was identified in the RI as the Moorehouse Limestone member of the Onondaga Limestone formation. The RI reported encountering limestone in on-site borings at depths ranging from 29 to 57 feet below the ground surface (ft-bgs).

2.2 GROUNDWATER HYDROLOGY

Groundwater is found in the unconsolidated materials at the Site, with typical depths to groundwater ranging from 5 to 15 ft-bgs. The variability in depth relates primarily to the thickness of fill materials.

In the central and southern portion of the Site, the hydraulic gradient is from northeast to southwest and ranges from about 0.02 to 0.05 feet per foot (ft/ft). Figure 2 shows a generalized potentiometric surface map for groundwater in the unconsolidated materials. Multiple rounds of groundwater elevation measurements over the O&M period have shown that the groundwater flow direction and hydraulic gradient are relatively consistent throughout the year and do not exhibit significant seasonal fluctuations.

The very low hydraulic conductivity of the glacial till and the discontinuity of the overlying fill greatly limit potential lateral groundwater flow within the unconsolidated materials at the Site. The RI reported an average (i.e., geometric mean) hydraulic conductivity of the till of 2.34 x 10^{-6} centimeter per second (cm/sec), which, in combination with the observed hydraulic gradient, would result in a calculated groundwater (Darcian) flow velocity less than 1 foot per year (ft/yr). This value is calculated as follows:

$$V = \frac{Ki}{\eta} \times \left(1.04 \times 10^{6}\right)$$

Where,

V = groundwater flow velocity, ft/yr;
K = hydraulic conductivity, cm/sec;
i = hydraulic gradient, ft/ft; and
η = effective porosity, dimensionless.

The factor of 1.04 x 10^{6} is the units conversion between cm/sec and ft/yr. Using Site data, the groundwater velocity calculation is as follows.

$$V = \frac{\left(2.34 \times 10^{-6}\right) \times \left(0.035\right)}{\left(0.15\right)} \times \left(1.04 \times 10^{6}\right) = 0.57 \ {}^{\text{ft}}\!/_{\text{yr}}$$

An effective porosity of 0.15 is estimated based on the observed gradation of the till (McWorter and Sunada, 1977). The RI similarly reported a maximum groundwater flow velocity in the southern portion of the Site of 0.47 ft/yr.

At the calculated groundwater flow velocity of 0.57 ft/yr, the natural flux of groundwater across southern portion of Site is about 700 gallons per day (gpd), which is calculated as follows:

$$Q = V \times t \times W \times \left(0.0205\right)$$

Where,

Q = total flow (flux) of groundwater across the Site, gpd;
t = saturated thickness, feet; and

W = width of contributory flow area, feet.

The saturated thickness is estimated to be 30 feet, based on an average depth to bedrock of 40 ft-bgs and a typical depth to groundwater of 30 ft-bgs. The width of the contributory flow area, measured perpendicular to flow, is estimated to be on the order of 2,000 feet (see Figure 1). The factor of 0.0205 is the conversion from cubic feet per year to gpd.

$$Q = (0.57) \times (30) \times (2000) \times (0.0205) = 701 \text{ gpd}$$

This total flow across the Site of 701 gpd equates to less than 0.5 gallon per minute (gpm).

These calculations show that, from a practical perspective, there is essentially no lateral groundwater flow through the glacial till. This condition was plainly observed at the excavation of Area I during Site remediation where the excavation extended more than 20 feet below the groundwater table and was open for several weeks, yet the groundwater inflow was so low that no construction dewatering was needed to operate within this large excavation.

Localized groundwater flow can occur in the discontinuous sand lenses within the clayey matrix of the till, but such sand lenses do not provide advective transport of Site-related contaminants over appreciable distances. The only operative flow paths for groundwater flow and contaminant transport are man-made preferential pathways along subsurface utility lines, such as the former plant storm sewers now being employed as the collection network.

3.0 REMEDIAL PROGRAM DESIGN

This section reviews the design of Operable Unit 2 and the Site conceptual model upon which the design was based. Comparing that design to the actual O&M experience forms an important basis for determining that termination of O&M of these Operable Unit 2 systems is appropriate.

3.1 CONCEPTUAL SITE MODEL

NYSDEC developed the remedial action plan for Operable Unit 2 assuming that the plant storm sewer system acted as a drainage gallery for shallow groundwater. By this model, where the sewers were situated below the groundwater table, impacted groundwater at the Site drained to nearby storm sewers. As described in the *Proposed Remedial Action Plan* (NYSDEC, August 1995):

> "The primary reason for lack of off-site migration of contaminated groundwater in the southern portion of the site … is believed to be the influence of the storm sewer system. The sewer system is acting as a groundwater interceptor, receiving groundwater via infiltration due to its position relative to the water table. The sewer system is capturing and controlling the contaminated groundwater before it migrates off-site."

The inference was that operation of the sewer system as a groundwater collection network was needed for hydraulic control of groundwater and associated advective transport of contaminants.

3.2 REMEDIATION GOALS AND REMEDIAL ACTION OBJECTIVES

In the December 1995 ROD, NYSDEC set forth the following remediation goals for Operable Unit No. 2:

- Minimize the off-site migration of Site-related constituents to off-site areas to the south and southwest along Genesee Street;
- Prevent human exposure to impacted on-site groundwater; and
- Protect surface water quality in U-Crest Ditch from Site-related constituents in the discharge from Site storm sewers.

To meet these remediation goals, NYSDEC established the Remedial Action Objectives (RAOs) for Site groundwater listed in Table 1.

3.3 REMEDIAL COMPONENTS

3.3.1 Groundwater Monitoring

In accordance with the approved *Final Remedial Action Plan* (IT Corporation, September, 1999), CBS installed six groundwater monitoring wells (i.e., MW-30, MW-31, MW-32, MW-33, MW-34, and MW-34D) to complement three pre-existing wells (i.e., MW-2, MW-5, MW-28) to monitor groundwater quality and to assess progress in achieving the specified RAOs. All of the monitoring wells, except well MW-32, monitor groundwater in the central and southern portion of the Site, i.e., within that portion of the Site for which the groundwater collection and treatment system was designed and installed. Well MW-32 monitors groundwater at the extreme northern end of the Site, remote from the zone of influence of the groundwater collection and treatment system.

Six wells (i.e., MW-2, MW-5, MW-28, MW-30, MW-31, and MW-34) monitor shallow groundwater along the downgradient Site perimeter (Figure 1). The results from these monitoring wells are specifically determinant of whether the Site conditions meet the first of the NYSDEC-defined remediation goals for this Site (Section 3.2), i.e., "minimize the off-site migration of Site-related constituents to off-site areas to the south and southwest along Genesee Street." Well MW-33 monitors groundwater upgradient of the area of the collection system, and MW-34D is a bedrock well that forms a couplet with shallow well MW-34 along the downgradient Site boundary.

3.3.2 Collection and Treatment System

Consistent with the conceptual Site model developed by NYSDEC, CBS modified the plant storm sewer system to provide for groundwater collection in the central and southern portion of the Site. Points of storm water inflow (e.g., roof leaders, catch basins) were sealed in an effort to isolate the piping network from surface water. Some of this work was conducted by NFTA contractors. Sewer lines that resided above the water table were likewise plugged, and holes were drilled in the bottom of selected submerged manholes to enhance infiltration.

After these modifications, the terminal manhole of each leg of the collection system was converted into a wet well (sump) for pumping the collected water to the treatment system through newly installed conveyance (pressure) lines. In late 2001 and early 2002, the collection pipe network was cleaned, inspected, and repaired to improve hydraulic performance and eliminate identified locations of surface water inflow.

The treatment system was initially designed with the following unit processes:

- Flow equalization;
- Sanitization, using an ultraviolet light;
- Suspended solids removal through the use of disposable bag filters; and
- Activated carbon adsorption for dissolved organics removal.

Discharge from the treatment system is to U-Crest Ditch.

Before construction of the treatment plant was completed, however, it became apparent that the demolition materials used as backfill during NFTA's Site redevelopment activities were causing elevated pH in the system influent. In response, pH adjustment (i.e., acidification) was added to the treatment system to control the effluent pH.

Since system startup in 2000, other system modifications have been made in an effort to improve operations. Such modifications include the addition of the following:

- Separate flow equalization tank to separate flow equalization from pH adjustment;
- Mixer on pH adjustment tank for improved control of acid addition; and
- Increased size of first carbon adsorber to improve system hydraulics.

Other, trial modifications (e.g., polymer addition to improve solids removal in equalization tank) were attempted but found not to be workable.

Also, between June and November 2001, a temporary treatment system was operated at the Site to support the collection piping dewatering needed for cleaning, inspection, and repair. The temporary system included unit processes of acidification, filtration, and activated carbon adsorption.

4.0 O&M EXPERIENCE

Over the past six years, CBS has operated and maintained the groundwater collection and treatment system and has routinely collected groundwater samples from the monitoring wells. The O&M experience and the data generated during the O&M period are the principal bases for this system termination Work Plan.

4.1 GROUNDWATER MONITORING RESULTS

Table 2 provides a summary of the results of the 15 rounds of groundwater monitoring completed at the Site for the eight wells located in the central and southern portion of the Site, i.e., within the portion of the Site where the collection system is operative. The monitoring period began with the initial sampling conducted as remedial construction was being completed (May 2000) and has continued through June 2006. In accordance with the approved *Final Remedial Action Plan* (IT Corporation, September, 1999), groundwater monitoring has been conducted on a semi-annual basis, except in 2001 when, at the request of NYSDEC, quarterly monitoring was performed. The data from the 15 rounds of groundwater monitoring for these wells show that the groundwater quality in the central and southern portion of the Site generally meets the RAOs specified in the Operable Unit No. 2 ROD.

4.1.1 Volatile Organic Compounds

Volatile organic compound (VOC) concentrations in all seven wells near and along the boundary at the southern and southwestern limit of the Site (i.e., wells MW-2, MW-5, MW-28, MW-30, MW-31, MW-34, and MW-34D) have achieved the corresponding RAOs for VOCs in each of the past 12 rounds of groundwater sampling and, in total, 14 of the 15 rounds of groundwater monitoring. The only exception for these seven wells was the detection of 7.1 micrograms per liter (µg/L) of trichloroethylene (TCE) at well MW-5 in the March 29, 2001 sample, compared to the RAO for TCE of 5 µg/L.

A 1,1,1-trichloroethane (1,1,1-TCA) concentration of 35 µg/L was reported from the December 1, 2000 sample at well MW-33, which is located on the upgradient (northeastern) limit of the portion of the Site within the expected zone of influence of the collection system.

No 1,1,1-TCA has been detected in any of the 13 rounds of groundwater sampling conducted at well MW-33 since December 2000, or in any other well in the central and southern portion of the Site at any other time. Also, in the December 2005 sampling, cis-1,2-dichloroethylene (cis-1,2-DCE), TCE, and vinyl chloride concentrations of 23, 16, and 1.5 µg/L, respectively, were reported at well MW-33, but the latest round of sampling (June 2006) showed no detectable concentrations of any of these VOCs. These later data provide further evidence of the hypothesis previously identified to NYSDEC that the December 2005 concentrations were the result of cross-contamination of sampling equipment. During the December 2005 monitoring event, well MW-33 was sampled immediately after well MW-32. The cis-1,2-DCE, TCE, and vinyl chloride concentrations subsequently reported at well MW-33, at which none of these VOCs had been detected in the past, were each found to equal 2 percent of the corresponding concentration at well MW-32. The conclusion is that groundwater at MW-33, located upgradient of the area of the collection system, has not been impacted by the target VOCs at the Site.

4.1.2 Metals

In addition to VOCs, NYSDEC established RAOs for two metals: cadmium and lead. In the 15 rounds of groundwater monitoring, no exceedances of the RAO for cadmium (5 µg/L) have been observed at any time in any well.

Sporadic exceedances of the RAO for lead were observed in samples collected during the June 2004 and June 2005 monitoring events. In the June 2004 sampling, 44.5 and 35 µg/L of lead, respectively, were reported for wells MW-5 and MW-28. In the June 2005 sampling, reported lead levels were 35.1, 36.8, 27.5, and 38.2 µg/L, respectively, at wells MW-5, MW-28, MW-30, and MW-31. One lead detection (36.5 µg/L at MW-28) was observed in the most recent (June 2006) sampling. These detections were primarily in two discrete sampling rounds, and, with one exception, the other 13 rounds have shown no elevated lead levels. Also, well MW-2, located within 100 feet of well MW-28 and screened at a similar elevation has shown no lead concentrations above 4.1 µg/L.

Given the sporadic occurrence and lack of consistency across the Site, it is suspected that these lead detections are related to sampling or laboratory procedures. The exact source of the lead is not known.

4.2 SYSTEM INFLUENT

4.2.1 Flows

Since system startup in August 2000 through the end of June 2006, 28.1 million gallons of water have been collected, treated, and discharged to U-Crest Ditch by the systems operating at the Site. This volume equates to an average flow rate of 13,100 gpd (9.1 gpm) over the 2,140 days of this operating period. The actual flow is nearly 20 times the 701 gpd predicted as the Site-wide flux of groundwater through the glacial till (Section 2.2); or, from another perspective, the groundwater that flows across the Site in the uppermost water-bearing zone comprises about five percent of the water collected and treated at the Site.

The actual sources of water being collected and treated are fugitive surface water sources and shallow, perched water found within the discontinuous pockets of more-permeable fill. Neither of these sources has the potential for advective transport of Site-related contaminants to off-site areas, except to the extent that they contribute water to man-made preferential flow paths.

4.2.2 Influent Quality

Table 3 provides a summary of data collected for the influent to the groundwater treatment system. These data include eight samples collected at system startup over the timeframe of August through October 2000 and quarterly sampling thereafter. Except for the sample collected in June 2001 and May 2006, influent samples have been collected as a composite of the water contributed by the three individual sumps.

In contrast to groundwater in the central and southern portion of the Site, the influent to the treatment system contains elevated concentrations of TCE and cis-1,2-DCE. The data presented in Table 3 show an initial 10-fold reduction in TCE concentrations in the system influent after completing startup in the fall of 2000, but, since that time, there is no clear

downward trend. In fact, comparison of the data from the June 2001 to the May 2006 sampling of individual sumps shows no significant differences, even though 18 million gallons of water were collected and treated over that interval.

Changes in TCE Concentrations

Location[1]	TCE Concentration (µg/L)	
	June 2001	May 2006
Sump 001	62	59
Sump 002	296	164
Sump 003	2,200	2,000

Moreover, the concentrations of TCE being observed at Sump 003 remain higher than those historically observed at the Site during the discharge monitoring under the State Pollutant Discharge Elimination System (SPDES) program. The current levels are higher than those typically exhibited in the SPDES sampling conducted in the late 1980s and in the 1990s under base flow (no rainfall runoff) conditions.

Also of note in the system influent are the low concentrations of lead. The 24 system influent samples for which lead was analyzed have shown lead concentrations ranging from "not detected" (reporting limits vary) to a maximum of 8.7 µg/L.

4.3 MANHOLE SAMPLING

On May 7 and 8, 2006, CBS collected samples from 22 manhole and sump locations throughout the collection network to assess whether water chemistry varied significantly throughout the collection network and if such variations (or lack of variation) could provide further insights into subsurface flow and potential contaminant transport phenomena. Table 4 presents the concentration data from this sampling for inorganic constituents, and Table 5 presents the concentration data for organic constituents. The data are also summarized for each of the three sections of the recovery system in Figures 3 through 5.

[1] In some project documents and drawings, the three collection sumps, i.e., Sump 001, Sump 002, and Sump 003, are referenced using the prefix "CSMH-" (collection system manhole) and are labeled CSMH-001, CSMH-002, and CSMH-003.

A review of these manhole sampling results shows that VOC concentrations are present throughout the storm sewer collection system, with higher concentrations associated with the western portion of the collection system that drains to Sump 003. The lowest concentrations are associated with the eastern portion of the collection system that drains to Sump 001. Elevated cadmium and lead concentrations are manifest at only a few locations, with most manhole samples showing no detectable concentrations of these metals.

There is no correlation between VOC and metals concentrations in manholes versus those in adjacent or nearby groundwater monitoring wells. As shown in Figure 1, there are three locations where groundwater monitoring wells are located in close proximity (i.e., less than 100 feet horizontally) to a manhole or sump locations.

Monitoring Wells Located Proximal to Sumps or Manholes

Sump or Manhole	Monitoring Well	Horizontal Distance (feet)
Sump 002	MW-31	87
Sump 003	MW-5	44
MH-001-14	MW-34	43
	MW-34D	64

Table 6 compares VOC and metals concentrations data from the water collected at these manholes and sumps to those in groundwater at nearby monitoring wells. As shown in Table 6, there is no correlation between VOC or metals concentrations observed in manholes or sumps and those observed at nearby groundwater monitoring wells.

4.4 REVISED SITE CONCEPTUAL MODEL

The understanding of Site conditions has grown significantly based on the knowledge and data gleaned from system O&M over the past six years. This expanded Site knowledge allows for a redefinition of the conceptual Site model as compared to that developed from the RI data and used as a basis for remedial design.

First, groundwater in the central and southern portion of the Site (i.e., the portion of the Site where the collection system is operative) is not contaminated by Site-related VOCs or metals.

This situation, which is evident from the 15 rounds of groundwater monitoring, results from the very low mobility of constituents in groundwater and the fact that the extensive soil remediation efforts eliminated the sources of RAO constituents in groundwater. Because of the low potential for constituent transport in groundwater, source removal effectively "mined" out the impacted groundwater at the Site.

Second, under the hydrogeologic conditions at the Site, contaminant migration is effectively limited to man-made preferential pathways, such as those associated with underground utility lines. The water that is being collected in the collection system is not groundwater associated with the uppermost continuous water-bearing zone. Instead, this water is comprised of fugitive surface water inflows and, where hydraulically connected to the collection systems via man-made pathways (e.g., along manhole risers), perched groundwater found in the discontinuous pockets of more-permeable fill placed at the Site.

Third, the results of the above-described investigations suggest that the VOCs detected in the system influent are not the result of contaminated Site groundwater draining into these former sewer pipes, but rather are being leached from the bedding and fill materials immediately surrounding the underground pipes. The collection system does not collect contaminated groundwater; the groundwater is clean. The influent to the treatment system becomes contaminated by flowing through storm sewer pipes that serve as the collection system.

Finally, as evidenced by the data from couplets of manholes/sumps and nearby monitoring wells, the contaminants associated with bedding materials are not migrating outward into groundwater.

4.5 CONCLUSIONS

Based on the expanded understanding of Site hydrogeologic conditions and the potential for subsurface contaminant transport, it is apparent that continuing operation of the collection and treatment system will not affect groundwater quality. Groundwater is now clean and has been since the startup of the collection and treatment system in 2000. In the meantime, the condition of the waters entering the treatment system has not improved since October 2000

because the contamination of these waters occurs through contact with contaminated bedding and pipe materials.

Continuing collection and treatment system operations increases potential human exposure to impacted on-site water and expends resources with no benefit. Closing off the collection system would, in contrast, achieve the following:

- Reduce the generation of contaminated water;
- Eliminate the need for worker contact with such water as part of continuing O&M activities; and
- Conserve natural resources (e.g., electrical power).

Also, because lateral groundwater flow is limited to preferential man-made pathways, continuing operation of the collection system increases the potential for off-site migration of Site-related constituents. Properly closing this system would permanently eliminate the pathways by which Site-related constituents could reach off-site groundwater or could impact surface water quality in U-Crest Ditch.

5.0 TERMINATION OF ACTIVE GROUNDWATER COLLECTION AND TREATMENT

This section describes the step-by-step approach to terminating the O&M of the collection and treatment system at the Site.

5.1 RESTRICTIVE COVENANTS

On February 4, 1999, the Respondents filed a "Declaration of Covenants and Restrictions" with the Clerk of Erie County, New York, to give notice to all parties who may acquire interest in the Site in the future of the actions specified in the Order. To supplement that deed notice, and as an initial step in the termination process, the Respondents will place covenants on the Site property and groundwater that impart the following environmental restrictions:

- The property shall remain in industrial or commercial use and shall not be used for residential development;
- No groundwater wells or other structures shall be installed on the property for the purpose of extracting groundwater for any potential consumptive use; and
- No surface water cisterns or other surface water collection devices or structures designed for the provision of water for consumptive use shall be installed at the Site.

These institutional controls are specifically focused on ensuring that the second of the ROD-specified remediation goals (i.e., prevent human exposure to impacted on-site groundwater) (Section 3.2) continues to be achieved at the Site. NFTA will draft the environmental restrictive covenants and provide CBS and NYSDEC a copy of the restrictions for review and NYSDEC approval prior to implementation.

5.2 SYSTEM CLOSURE

CBS proposes a step-by-step shutdown of the groundwater collection and treatment system. These steps are described in the following sections.

5.2.1 Step 1 Closure

Step 1 in the system termination involves closure of the portion of the collection network piping that drains to Sump 001. In this phase of the work, the sump pump will be pulled from Sump 001, and the electrical service to this location will be disconnected and permanently locked out. The conveyance line from Sump 001 will be capped both at the sump and at the treatment building.

Four manholes associated with the 001 system will be closed (Figure 3):

- Sump 001;
- MH-001-01
- MH-001-02; and
- MH-001-14.

Figure 6 shows a detail for manholes closure. As shown in Figure 6, manhole closure involves filling the interior of the manhole to above the highest pipe crown with Portland cement concrete. This concrete fill would flow out a short distance into the pipes that connect to the manhole. In addition to filling the interior, grouting will be conducted around the outside of the two furthest downstream manholes (i.e, Sump 001, MH-001-01) to ensure that the bedding material and other fill immediately surrounding the pipe and manhole are filled. This grouting will be accomplished by drilling grout holes along the outside of the manhole and pumping a cement-bentonite grout into the bedding material and any other more-permeable fill materials around the piping that connects to the manhole.

The pump at Sump 002 will be turned off when the work on the 001 segment is initiated. The pump at Sump 003 will remain operational and continue to conveyance water to the treatment plant for treatment and discharge.

5.2.2 Step 2 Closure

Not less than 30 days after turning off the pump at Sump 002, closure of the 002 portion of the system will be initiated. During this 30-day period, water levels will be measured weekly at several 002 system manholes to make certain that water levels within the collection piping network remain static.

Once confirmed that water levels are static, closure of the 002 segment will begin. The sump pump will be pulled from Sump 002, and the electrical service to this location will be disconnected and permanently locked out. The conveyance line from Sump 002 will be capped both at the sump and at the treatment building.

Manhole closure techniques on the 002 portion of the collection system will the same as those applied for the 001 segment. The following sumps and manholes will be closed on the 002 segment (Figure 4):

- Sump 002;
- MH-002-01;
- MH-002-03; and
- MH-002-06.

The interior of these manholes will be filled with concrete to a level above the highest pipe crown, as described above. The two most downstream manholes, Sump 002 and MH-002-01, will also be externally grouted to seal off the pipe bedding and any other permeable fill materials around the pipes that enter these manholes.

The pump at Sump 003 will be turned off when the work on the 002 segment is initiated.

5.2.3 Step 3 Closure

Not less than 30 days after turning off the pump at Sump 003, closure of the 003 portion of the system will be initiated. During this 30-day period, water levels will be measured weekly at several 003 system manholes to make certain that water levels within the collection piping network remain static.

Once confirmed that water levels are static, closure of the 003 segment will begin. The sump pump will be pulled from Sump 003, and the electrical service to this location will be disconnected and permanently locked out. The conveyance line from Sump 003 will be capped both at the sump and at the treatment building.

Closure techniques will the same as those applied for the 001 and 002 segments. Manholes to be closed in this portion of the collection piping network are the following (Figure 5):

- Sump 003;
- MH-003-01;
- Access manhole;
- MH-003-03; and
- MH-003-04.

All of these manholes will be filled with concrete to above the highest pipe crown. External grouting, as described above, will be conducted at Sump 003, Manhole 003-01, and the Access Manhole (located between MH-03-001 and MH-003-04).

After completing the closure of the 003 line, the equipment in the treatment plant will be emptied, cleaned, and disconnected. Salvageable equipment will either be removed to an off-site location or left on-site pending its sale or other off-site use. Non-salvageable equipment and materials, including solids collected from the process vessels, will be removed for off-site disposal. The carbon removed from the three adsorbers will be sent for reactivation and use elsewhere.

5.3 POST-SHUTDOWN GROUNDWATER MONITORING

CBS will conduct four quarters of post-shutdown groundwater monitoring to ensure groundwater conditions are not affected by the groundwater collection and treatment system shutdown. Monitoring procedures and analytes will be the same as the current, on-going groundwater monitoring program. The data from this post-shutdown monitoring will be reported quarterly to NYSDEC.

5.4 FINAL TERMINATION NOTICE

Following the four rounds of quarterly post-shutdown sampling, and assuming that constituent concentrations in groundwater are not affected by the shutdown, CBS will provide NYSDEC a final termination notice that provides the proof of filing of the land use restrictions with the recorder of deeds and summarizes the four quarters of post-shutdown groundwater monitoring.

6.0 SCHEDULE

Figure 7 presents the schedule for implementing this Work Plan for terminating operations of the collection and treatment system at the Site. The critical path for the termination schedule calls for approximately 10 week of project planning, design, and contracting and 10 weeks for implementation of the three-step closure program. The four quarters of groundwater monitoring will be initiated as soon as Step 1 of the closure program is completed. By this schedule, the final termination notice will be filed with NYSDEC approximately 16 months after submittal of the Work Plan.

The schedule for the closure implementation tasks is weather-dependent, as the field work cannot be conducted during periods of severe cold or significant snow cover. Weather-related delays could extend the schedule shown in Figure 7 by several months. In addition, the project schedule makes certain assumptions regarding NYSDEC review and approval times. Changes in these timeframes would also directly affect the schedule.

REFERENCES

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TABLES

Table 1
Remedial Action Objectives for Site Groundwater
NYSDEC Site No. 9-15-066[1]

Constituent	Remedial Action Objective in Groundwater (µg/L)
1,2-dichloroethylene (total)	5
Toluene	5
1,1,1-Trichloroethane	5
Trichloroethylene	5
Vinyl chloride	5
Cadmium	5
Lead	25

[1] *NYSDEC, December 2005.*

Table 2
Summary of Groundwater Monitoring Data
Wells in Central and Southern Portion of Site
NYSDEC Site No. 9-15-066

Well Number	Date of Sampling	Constituent Concentration (ug/L)						
		cis-1,2-dichloroethylene	Toluene	1,1,1-trichloroethane	Trichloroethylene	Vinyl Chloride	Cadmium	Lead
Remedial Action Objective		5	5	5	5	5	5	25
MW-2	05/04/00	5 U	5 U	5 U	5 U	**1.6 J**	**1.3**	**3.0 B**
	11/30/00	5 U	5 U	5 U	5 U	5 U	1.0 U	10 U
	03/29/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	10 U	10 U	10 U	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	0.25 U	0.79 U
	12/13/01	10 U	10 U	10 U	10 U	10 U	0.44 U	0.82 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	0.17 U	2.03 U
	12/31/02	NA	10 U	10 U	10 U	10 U	0.29 U	**2.0 B**
	06/17/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/15/04	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	12/17/04	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/22/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**4.1**
	12/15/05	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/13/06	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.4 B**
MW-5	05/11/00	5 U	5 U	5 U	**5.0**	5 U	0.70 U	**18.0**
	11/30/00	NA	5 U	5 U	5 U	5 U	1.0 U	10 U
	03/29/01	10 U	10 U	10 U	**7.1 J**	10 U	**1.1**	**14.3**
	06/21/01	10 U	10 U	10 U	**4.1 J**	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	**1.5 J**	10 U	**1.2**	**14.7**
	12/13/01	10 U	10 U	10 U	10 U	10 U	0.44 U	1.6 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	**0.29 B**	3.20 U
	12/31/02	10 U	NA	10 U	10 U	10 U	**0.57 B**	**5.0**
	06/17/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	**6.1**
	06/30/04	1 U	1 U	1 U	1 U	1 U	**1.0 B**	**44.5**
	12/17/04	1 U	1 U	1 U	1 U	1 U	**0.43 B**	**17.2**
	06/22/05	1 U	1 U	1 U	**1.1 J**	1 U	**0.23 B**	**35.1**
	12/14/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**9.4**
	06/13/06	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U

Table 2
Summary of Groundwater Monitoring Data
Wells in Central and Southern Portion of Site
NYSDEC Site No. 9-15-066

Well Number	Date of Sampling	Constituent Concentration (ug/L)						
		cis-1,2-dichloroethylene	Toluene	1,1,1-trichloroethane	Trichloroethylene	Vinyl Chloride	Cadmium	Lead
Remedial Action Objective		5	5	5	5	5	5	25
MW-28	05/04/00	5 U	5 U	5 U	5 U	5 U	**1.5**	**3.1 B**
	03/29/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	10 U	10 U	10 U	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	0.25 U	**7.0**
	12/12/01	10 U	10 U	10 U	10 U	10 U	0.44 U	3 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	0.17 U	**8.8**
	12/31/02	10 U	NA	10 U	10 U	10 U	0.29 U	**4.7 B**
	06/17/03	1 U	1 U	1 U	1 U	1 U	5.0 U	**1.4 B**
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/15/04	1 U	1 U	1 U	1 U	1 U	5.0 U	**35.0**
	12/17/04	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/22/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**36.8**
	12/15/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**12.3**
	06/13/06	1 U	1 U	1 U	1 U	1 U	5.0 U	**36.5**
MW-30	05/04/00	5 U	5 U	5 U	5 U	5 U	**3.0**	**11.8**
	11/30/00	NA	5 U	5 U	5 U	5 U	1.0 U	10 U
	03/29/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	10 U	10 U	10 U	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	**0.60 B**	**2.7 B**
	12/13/01	10 U	NA	10 U	10 U	10 U	0.44 U	1.5 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	**0.59 B**	**3.7**
	12/31/02	10 U	10 U	10 U	10 U	10 U	**1.60 B**	**9.4**
	06/18/03	1 U	1 U	1 U	1 U	1 U	**0.47 B**	**4.3**
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/15/04	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	01/05/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.8 B**
	06/22/05	1 U	1 U	1 U	1 U	1 U	**2.4 B**	**27.5**
	12/14/05	1 U	1 U	1 U	1 U	1 U	**0.90 B**	**5.9**
	06/13/06	1 U	1 U	1 U	1 U	1 U	**1.9 B**	**14.7**

Table 2
Summary of Groundwater Monitoring Data
Wells in Central and Southern Portion of Site
NYSDEC Site No. 9-15-066

Well Number	Date of Sampling	Constituent Concentration (ug/L)						
		cis-1,2-dichloroethylene	Toluene	1,1,1-trichloroethane	Trichloroethylene	Vinyl Chloride	Cadmium	Lead
Remedial Action Objective		5	5	5	5	5	5	25
MW-31	05/09/00	5 U	5 U	5 U	5 U	5 U	0.70 U	3.0 U
	11/30/00	NA	5 U	5 U	5 U	5 U	1.0 U	10 U
	03/29/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	10 U	10 U	10 U	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	**0.27 B**	0.79 U
	12/13/01	10 U	10 U	10 U	10 U	10 U	0.44 U	2.2 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	**0.55 B**	**3.4**
	12/31/02	10 U	NA	10 U	10 U	10 U	0.29 U	**2.9 B**
	06/17/03	1 U	1 U	1 U	1 U	1 U	5.0 U	**8.1**
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	**13.2**
	06/30/04	1 U	1 U	1 U	1 U	1 U	**0.38 B**	**11.0**
	12/17/04	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.0 B**
	06/22/05	1 U	1 U	1 U	1 U	1 U	**1.1 B**	**38.2**
	12/15/05	1 U	1 U	1 U	1 U	1 U	**0.58 B**	**3.9**
	06/13/06	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
MW-33	05/11/00	NA	5 U	**1.3 J**	5 U	5 U	**1.3**	3.0 U
	12/01/00	NA	5 U	**35**	5 U	5 U	1.0 U	10.0 U
	03/28/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	10 U	10 U	10 U	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	0.25 U	0.79 U
	12/13/01	10 U	10 U	10 U	10 U	10 U	0.44 U	0.82 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	0.17 U	2.03 U
	12/31/02	10 U	NA	10 U	10 U	10 U	0.29 U	1.46 U
	06/18/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	12/22/03	1 U	1 U	1 U	1 U	1 U	**1.2 B**	**15.0**
	06/15/04	1 U	1 U	1 U	1 U	1 U	5.0 U	**7.4**
	12/17/04	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.5 B**
	06/22/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**1.9 B**
	12/14/05	**23**	1 U	1 U	**16**	**1.5 J**	5.0 U	3.0 U
	06/13/06	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U

Table 2
Summary of Groundwater Monitoring Data
Wells in Central and Southern Portion of Site
NYSDEC Site No. 9-15-066

Well Number	Date of Sampling	Constituent Concentration (ug/L)						
		cis-1,2-dichloroethylene	Toluene	1,1,1-trichloroethane	Trichloroethylene	Vinyl Chloride	Cadmium	Lead
Remedial Action Objective		5	5	5	5	5	5	25
MW-34	05/06/00	5 U	5 U	10 U	5 U	5 U	**1.2**	**3.8 B**
	11/30/00	5 U	5 U	35 U	5 U	5 U	**2.1**	10.0 U
	03/28/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	10 U	10 U	10 U	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	0.25 U	0.79 U
	12/13/01	10 U	10 U	10 U	10 U	10 U	0.44 U	0.82 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	0.17 U	2.03 U
	12/31/02	10 U	NA	10 U	10 U	10 U	0.29 U	**2.8 B**
	06/18/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.3 B**
	06/15/04	1 U	1 U	1 U	1 U	1 U	**0.29 B**	**4.1**
	01/05/05	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	06/22/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**5.4**
	12/14/05	1 U	1 U	1 U	1 U	1 U	**0.41 B**	**6.5**
	06/13/06	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.7 B**
MW-34D	05/06/00	5 U	5 U	5 U	5 U	5 U	**1.2**	**3.1 B**
	11/30/00	5 U	5 U	5 U	5 U	5 U	1.0 U	10.0 U
	03/28/01	10 U	10 U	10 U	10 U	10 U	0.41 U	2.47 U
	06/21/01	10 U	**2.2 J**	10 U	**1.1 J**	10 U	0.85 U	1.21 U
	09/13/01	10 U	10 U	10 U	10 U	10 U	0.25 U	0.79 U
	12/13/01	10 U	10 U	10 U	10 U	10 U	0.44 U	4.0 U
	03/14/02	10 U	10 U	10 U	10 U	10 U	0.17 U	2.03 U
	12/31/02	10 U	NA	10 U	10 U	10 U	0.29 U	**2.3 B**
	06/18/03	1 U	1 U	1 U	1 U	1 U	5.0 U	3.0 U
	12/22/03	1 U	1 U	1 U	1 U	1 U	5.0 U	**12.8**
	06/15/04	1 U	1 U	1 U	1 U	1 U	5.0 U	**3.9**
	01/05/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**1.7 B**
	06/22/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**9.8**
	12/14/05	1 U	1 U	1 U	1 U	1 U	5.0 U	**2.6 B**
	06/13/06	1 U	1 U	1 U	1 U	1 U	**1.7 B**	3.0 U

Table 2
Summary of Groundwater Monitoring Data
Wells in Central and Southern Portion of Site
NYSDEC Site No. 9-15-066

Data Legend:

"NA" - indicates not analyzed

Detections and estimated values are in ***bold-face*** *type.*

Concentrations above Remedial Action Objectives are highlighted in yellow.

Organic data qualifiers:

U - not detected at indicated minimum detection limit (MDL)

J - estimated concentration above MDL, but below reporting limit (RL)

Inorganic data qualifiers:

U - not detected at indicated RL

B - detected concentration above MDL, but below RL.

Table 3
Summary of Treatment System
Influent Monitoring Data

Date of Sampling	Outfall	Constituent Concentration (ug/L)						
		cis-1,2-dichloroethylene	Toluene	1,1,1-trichloroethane	Trichloroethylene	Vinyl Chloride	Cadmium	Lead
08/21/00	Composite	200 U	200 U	200 U	**3,100**	200 U	**1.5**	NA
08/29/00	Composite	200 U	200 U	200 U	**8,500**	200 U	**0.7**	NA
09/06/00	Composite	200 U	200 U	200 U	**4,100**	200 U	0.7 U	NA
09/13/00	Composite	400 U	400 U	400 U	**9,600**	400 U	**1.6**	NA
09/20/00	Composite	**54 J**	100 U	100 U	**2,500**	100 U	0.6 U	NA
09/27/00	Composite	100 U	100 U	100 U	**2,200**	100 U	**0.68 B**	NA
10/04/00	Composite	**60 J**	100 U	100 U	**2,500**	100 U	**0.69 B**	NA
10/10/00	Composite	**23 J**	25 U	25 U	**430**	25 U	0.5 U	NA
03/29/01	Composite	**9.1 J**	10 U	**1.4 J**	**16**	10 U	**1.5**	2.47 U
06/26/01	001	**25**	5 U	**0.9 J**	**37**	5 U	**448**	NA
06/26/01	002	**16**	5 U	**2.3 J**	**280**	5 U	3.0 U	NA
06/26/01	003	**510**	5 U	**4.5 J**	**1,700**	5 U	3.0 U	NA
09/29/01	Comp - Perm	**18**	25 U	**4 J**	**8.3 J**	10 U	0.25 U	**7.4**
09/29/01	Comp - Temp	**14 J**	25 U	25 U	**350**	25 U	0.25 U	**8.7**
12/21/01	Composite	**14**	10 U	10 U	**130**	10 U	**1.7**	4.1 U
03/14/02	Composite	**18**	10 U	10 U	**130**	10 U	**0.29**	**4.5**
10/15/02	Composite	**11.3**	**530**	**9.0**	**990**	**16**	5 U	NA
12/15/02	Composite	**7.3**	**19**	**0.16**	**46**	**1.3**	**8.4**	50 U
03/15/03	Composite	**7.8**	**14**	**1.0**	**29**	NA	**21**	3 U
06/11/03	Composite	**11.0**	**130**	**64**	**570**	25 U	**4.2**	**5.5**
09/09/03	Composite	**8.6**	**290**	25 U	**620**	**15**	**3.0**	**3.5**
12/10/03	Composite	**8.6**	**54**	25 U	**430**	25 U	**2.5**	**3.0**
03/12/04	Composite	**7.7**	**51**	2 U	**3.9**	2 U	**1.4**	**1.6**
06/09/04	Composite	**8.3**	**54**	40 U	**650**	40 U	**1.8**	**6.8**
09/13/04	Composite	**10.3**	**98**	10 U	**250**	10 U	**1.8**	**2.2**
12/13/04	Composite	**140**	**4.4 J**	20 U	**470**	20 U	**0.81 B**	**1.6 B**

Table 3
Summary of Treatment System
Influent Monitoring Data

Date of Sampling	Outfall	Constituent Concentration (ug/L)						
		cis-1,2-dichloroethylene	Toluene	1,1,1-trichloroethane	Trichloroethylene	Vinyl Chloride	Cadmium	Lead
03/23/05	Composite	**46**	15 U	15 U	**250**	15 U	**2.1 B**	1.5 U
06/09/05	Composite	**100**	15 U	15 U	**1,200**	**5.4 J**	**1.2 B**	3.0 U
10/03/05	Composite	**26**	1 U	**2.0**	**8.6**	**11**	5.0 U	3.0 U
12/16/05	Composite	**34**	5 U	5 U	**140**	**3.5 J**	**0.68 B**	3.0 U
03/13/06	Composite	**36**	10 U	10 U	**190**	**2.6 J**	**0.95 B**	**2.0 B**
05/09/06	Composite	**87**	10 U	10 U	**710**	**5.6 J**	**1.2 B**	3.0 U
05/08/06	001	**21**	1 U	1 U	**35**	**3.2**	**1.3 B**	3.0 U
05/08/06	002	**24**	2.5 U	2.5 U	**140**	2.5 U	**5.0 B**	3.0 U
05/08/06	003	**200**	25 U	25 U	**1,800**	25 U	5 U	3.0 U
06/12/06	Composite	**72**	3.3 U	3.3 U	**190**	**4.0 J**	**0.72 B**	3.0 U

Data Legend :

"NA" - indicates not analyzed

Detections and estimated values are in ***bold-face*** *type.*

Organic data qualifiers:

U - not detected at indicated detection limit

J - estimated concentration below reporting limit but above minimum detection limit.

Inorganic data qualifiers:

U - not detected at indicated detection limit

B - detected concentration below contract required detection limit but above instrument detection limit.

Table 4
Summary of Manhole Sampling Data - May 2006
General Chemistry and Metals

Manhole or Sump Number	Concentration									
	pH (s.u.)	Total Suspended Solids (mg/L)	Total Alkalinity (mg/L)	Cadmium (ug/L)	Calcium (mg/L)	Chromium (ug/L)	Iron (ug/L)	Lead (ug/L)	Magnesium (mg/L)	Manganese (ug/L)
001-02	**8.30**	**4.8**	**141**	**2.0 B**	**150**	5 U	**124**	3 U	**28.8**	**409**
001-06	**8.00**	4 U	**120**	**0.55 B**	**101**	5 U	**198**	3 U	**22.9**	**273**
001-09	**7.90**	4 U	**151**	**1.0 B**	**172**	5 U	**208**	3 U	**35.0**	**368**
001-10	**10.80**	4 U	**74.3**	5 U	**119**	**1.6 B**	**38.9 B**	3 U	**1.34 B**	**11.2 B**
001-13	**8.30**	4 U	**139**	5 U	**113**	5 U	**286**	3 U	**24.9**	**534**
001-14	**8.90**	**1,030**	**54.3**	**28.8**	**390**	**3.1 B**	**1,680**	**7.9**	**22.3**	**1,150**
002-02	**9.90**	**12,000**	**104**	**11.9**	**914 J**	**27.1**	**5,310 J**	**58.0**	**120**	**742 J**
002-03	**8.70**	**5,190**	**71.0**	**3.4 B**	**504**	**7.0**	**4,080**	**15.1**	**27.6**	**555**
002-06	**9.20**	4 U	**49.5**	5 U	**59.5 J**	**0.86 B**	100 U	3 U	**13.3**	**4.5 B J**
002-07	**10.40**	**3.6 B**	**29.1**	5 U	**45.1 J**	**1.0 B**	**524 J**	3 U	**4.22 B**	**5.2 B J**
002-09	**9.50**	4 U	**35.3**	5 U	**69.2 J**	5 U	**54.9 B J**	3 U	**12.5**	**6.4 B J**
002-09 (dup)	NA	4 U	NA	NA	NA	NA	NA	NA	NA	NA
002-10	**10.10**	**1,320**	**16.0**	5 U	**85.6**	**0.96 B**	**69.5 B**	3 U	**12.3**	**8.3 B**
002-10 (dup)	NA	NA	**17.6**	NA	NA	NA	NA	NA	NA	NA
002-12	**9.10**	**4.4**	**34.6**	5 U	**66.4**	**1.1 B**	**50.8 B**	3 U	**13.2**	**2.3 B**
002-12 (dup)	**9.20**	**4.4**	**34.9**	NA	NA	NA	NA	NA	NA	NA
002-13	**7.90**	**1,950**	**172**	**2.2 B**	**466**	**25.6**	**21,100**	**59.4**	**69.0**	**1,550**
002-15	**11.50**	**3.6 B**	**122**	5 U	**41.6 J**	**2.0 B**	**84.4 B J**	3 U	**3.48 B**	**0.88 B J**
002-15 (dup)	NA	NA	**126**	NA	NA	NA	NA	NA	NA	NA
003-02	**11.00**	4 U	**79.7**	5 U	**219**	**14.2**	**33.4 B**	3 U	**5.06**	**0.94 B**
003-03	**11.60**	**20.4**	**280**	**1.4 B**	**164**	**12.6**	**521**	**4.4**	**1.01 B**	**16.2**
003-04	**11.20**	4 U	**120**	5 U	**233**	**24.0**	**89.6 B**	3 U	**6.91**	**2.0 B**
003-07	**11.20**	**5.2**	**132**	5 U	**237**	**19.5**	**198**	**2.9 B**	**8.46**	**8.9 B**
Sump 001	**8.30**	4 U	**164**	**1.2 B**	**216 J**	5 U	**198 J**	3 U	**39.8**	**763 J**
Sump 002	**7.90**	**26.4**	**126**	**1.3 B**	**219 J**	**1.2 B**	**427 J**	3 U	**40.8**	**399 J**
Sump 003	**11.40**	**4.0**	**145**	5 U	**235 J**	**16.4**	100 U	3 U	**2.51 B**	**0.49 B J**

Data Legend:
"NA" - indicates not analyzed
*Detections and estimated values are in **bold-face** type.*
Inorganic Data Qualifiers:
U - not detected at indicated reporting limit (RL).
B - estimated concentration above minimum detection limit (MDL), but below reporting limit (RL).
J - analyte detected in method blank.

Table 5
Summary of Manhole Sampling Data - May 2006
Volatile Organic Compounds

Manhole or Sump Number	Concentration (ug/L)							
	cis-1,2-Dichloroethylene	1,2-Dichlorobenzene	Methylene chloride	Toluene	1,1,1-Trichloroethane	Trichloroethylene	Tetrachloroethylene	Vinyl Chloride
001-02	**7.0**	1 U	2 U	1 U	1 U	**14**	1 U	**1.3**
001-06	**12**	1 U	2 U	1 U	1 U	**17**	1 U	**3.4**
001-09	**26**	1 U	2 U	1 U	1 U	**45**	1 U	**5.1**
001-10	**6.3**	1 U	2 U	1 U	**5.6**	**2.2**	**4.0**	**1.8**
001-13	**89**	2 U	4 U	2 U	2 U	**2.7**	**2.7**	**130**
001-14	**1.2**	1 U	2 U	1 U	1 U	**2.4**	1 U	1 U
002-02	**68**	4 U	8 U	4 U	4 U	**220**	4 U	**5.7**
002-03	**100**	1.7 U	3 U	1.7 U	1.7 U	**65**	1.7 U	**21**
002-06	**42**	1.7 U	3 U	1.7 U	1.7 U	**83**	**1.9**	**6.3**
002-07	**14**	1 U	2 U	1 U	1 U	**23**	**2.7**	**1.3**
002-09	**27**	2 U	4 U	2 U	2 U	**120**	**4.8**	**1.5 J**
002-10	**17**	1 U	2 U	1 U	1 U	**38**	**1.3**	**1.6**
002-12	**15**	1 U	2 U	1 U	1 U	**34**	**1.0**	**1.6**
002-13	**12**	1.7 U	3 U	1.7 U	**76**	**11**	1.7 U	**3.3**
002-15	**37**	1 U	2 U	1 U	1 U	**31**	**5.7**	**1.8**
003-02	**130**	25 U	50 U	25 U	25 U	**1,800**	25 U	25 U
003-03	**19**	2 U	4 U	2 U	2 U	**120**	2 U	**15**
003-04	**240**	33 U	67 U	33 U	33 U	**2,200**	33 U	33 U
003-07	**190**	25 U	50 U	25 U	25 U	**1,600**	25 U	25 U
Sump 001	**21**	1 U	2 U	1 U	1 U	**35**	1 U	**3.2**
Sump 002	**24**	2.5 U	5 U	2.5 U	2.5 U	**140**	2.5 U	2.5 U
Sump 003	**200**	25 U	50 U	25 U	25 U	**1,800**	25 U	25 U

Data Legend:
*Detections and estimated values are in **bold-face** type.*
Orgnaic Data Qualifiers:
U - not detected at indicated reporting limit (RL).
J - estimated concentration above minimum detection limit (MDL), but below reporting limit (RL).

Table 6
Comparison of Groundwater Versus Manhole and Sump Water Chemistry
NYSDEC Site No. 9-15-066

Date	Couplet	Consituent Concentration (ug/L)				
		Cis-1,2-DCE	**TCE**	**Vinyl Chloride**	**Cadmium**	**Lead**
June 2001	Sump 002	**16**	**280**	5 U	3 U	NA
	MW-31	10 U	10 U	10 U	0.85 U	1.21 U
	Sump 003	**510**	**1,700**	5 U	3 U	NA
	MW-5	10 U	**4.1 J**	10 U	0.85 U	1.21 U
May 2006	Sump 002	**24**	**140**	2.5 U	**1.3 B**	3 U
	MW-31	1 U	1 U	1 U	5.0 U	3.0 U
	Sump 003	**200**	**1,800**	25 U	5 U	3 U
	MW-5	1 U	1 U	1 U	5 U	3 U
	MH-001-14	**1.2**	**2.4**	1 U	**28.8**	**7.9**
	MW-34	1 U	1 U	1 U	5.0 U	**2.7 B**
	MH-001-14	**1.2**	**2.4**	1 U	**28.8**	**7.9**
	MW-34A	1 U	1 U	1 U	**1.7 B**	3.0 U

Data Legend:
"NA" - indicates not analyzed
Detections and estimated values are in ***bold-face*** *type.*
Organic data qualifiers:
U - not detected at indicated minimum detection limit (MDL)
J - estimated concentration above MDL, but below reporting limit (RL)
Inorganic data qualifiers:
U - not detected at indicated RL
B - detected concentration above MDL, but below RL.

FIGURES

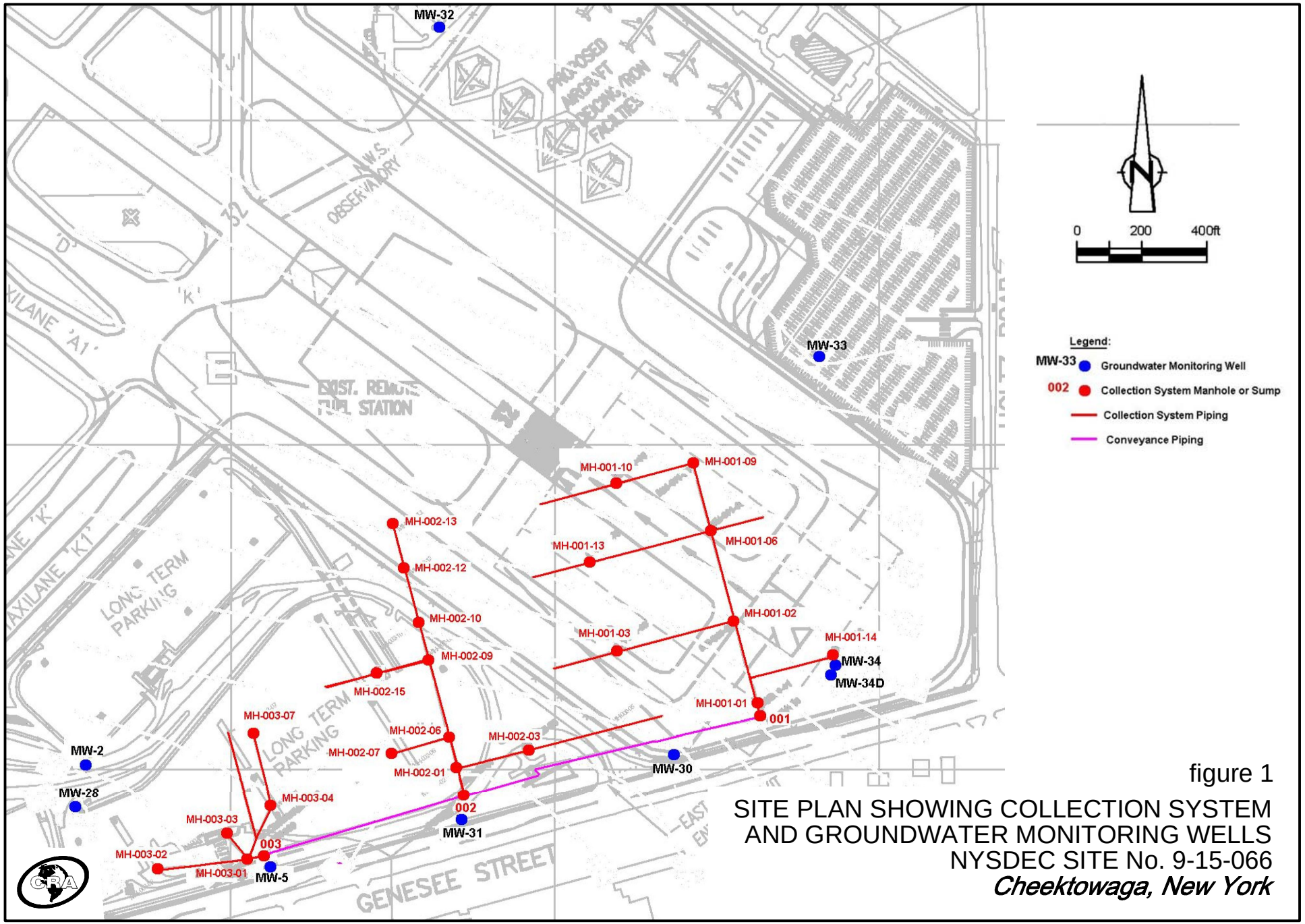

figure 1

SITE PLAN SHOWING COLLECTION SYSTEM AND GROUNDWATER MONITORING WELLS
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

18036-00(002)GN-WA003 JUL 28/2006

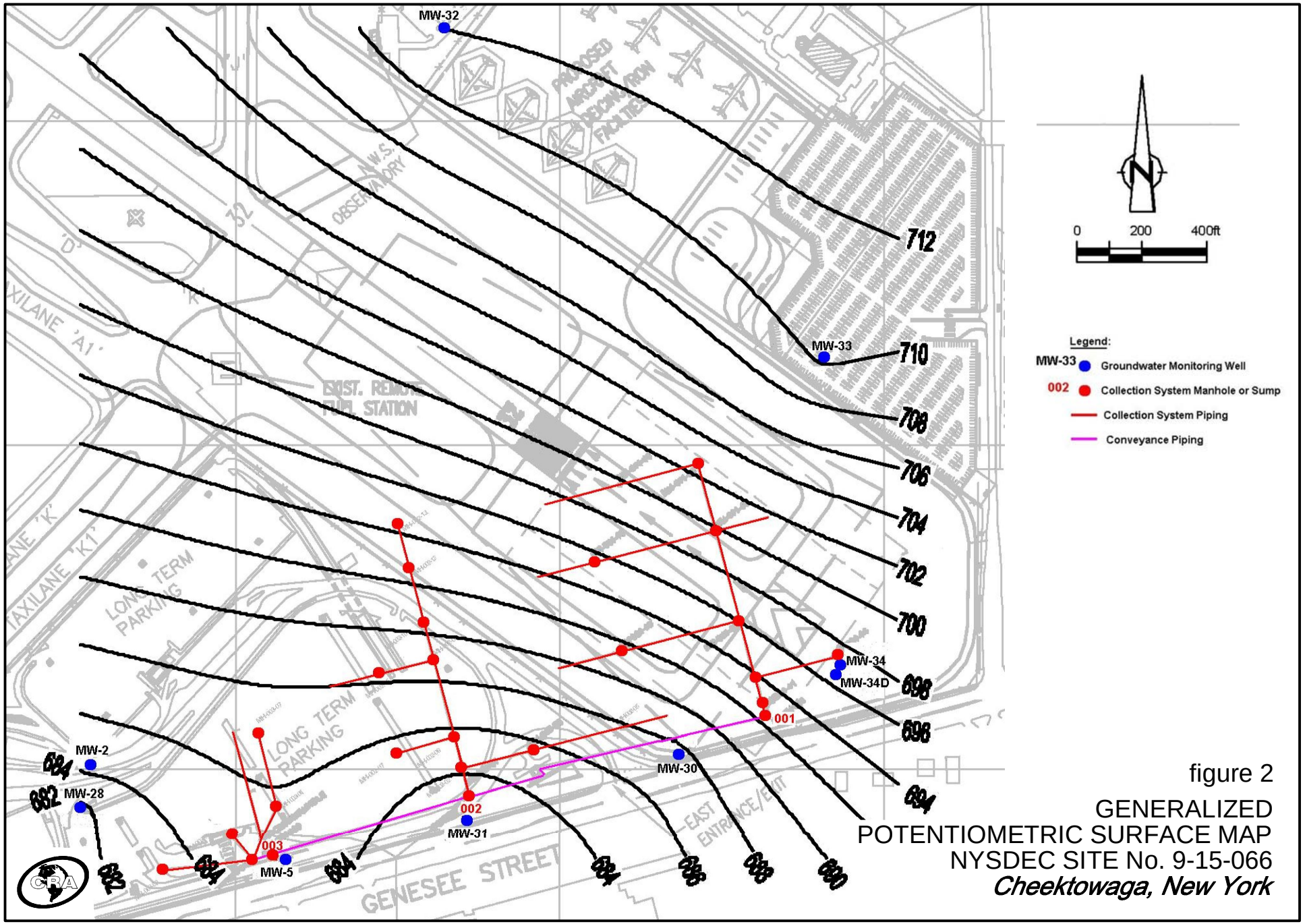

figure 2

GENERALIZED
POTENTIOMETRIC SURFACE MAP
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

18036-00(002)GN-WA003 JUL 28/2006

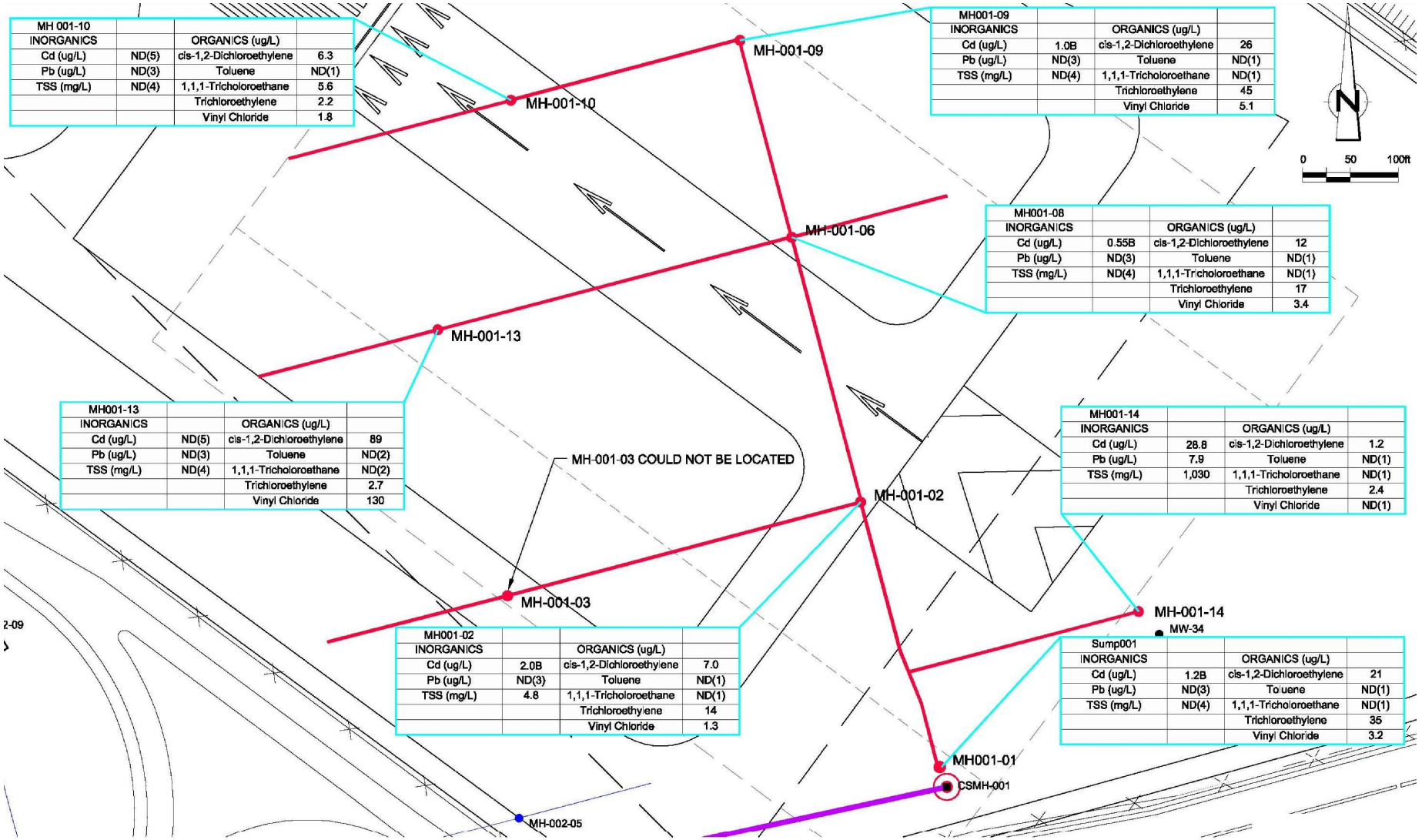

figure 3

SUMMARY OF MANHOLE SAMPLING DATA - 001 SYSTEM
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

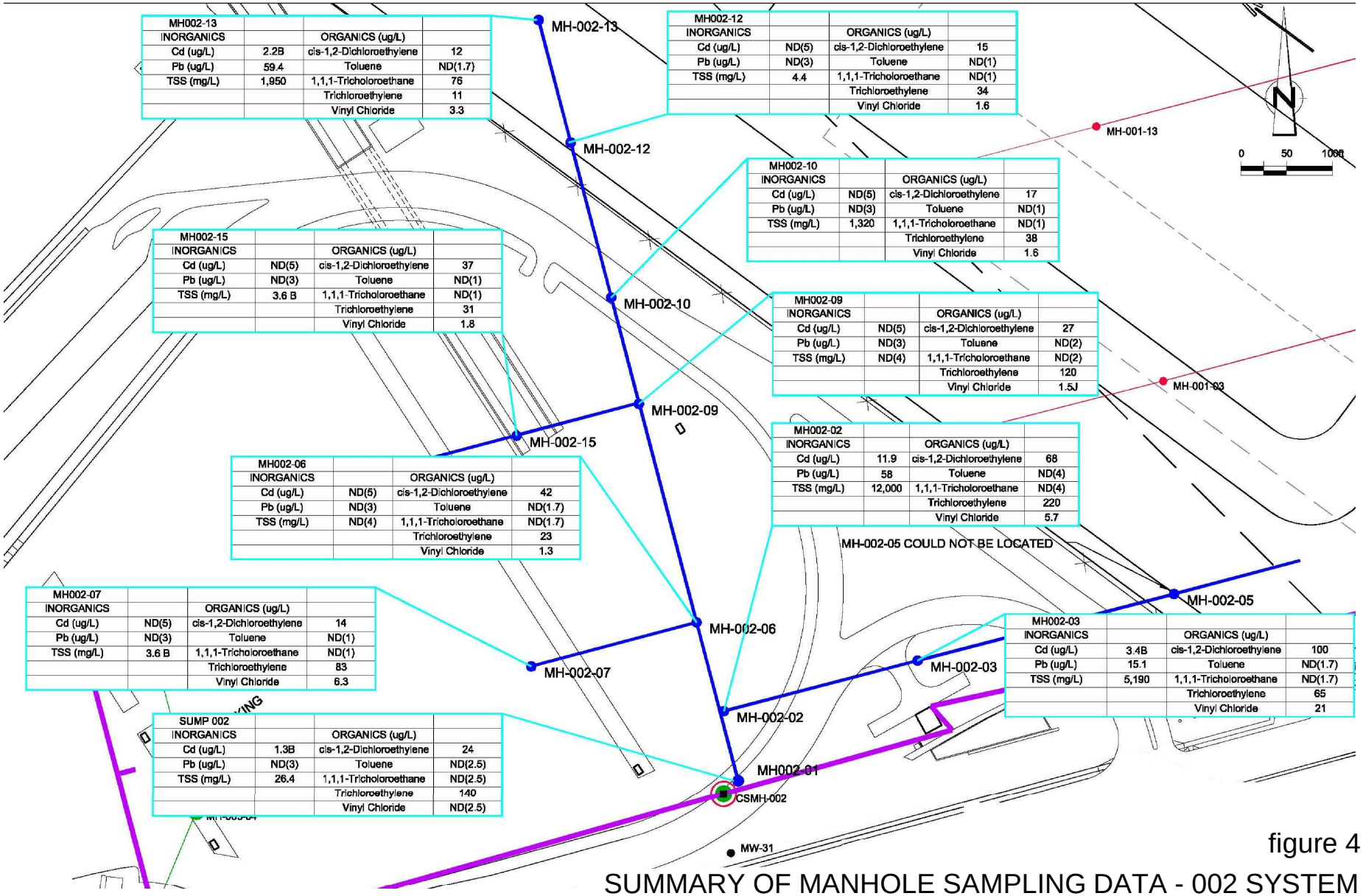

figure 4

SUMMARY OF MANHOLE SAMPLING DATA - 002 SYSTEM
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

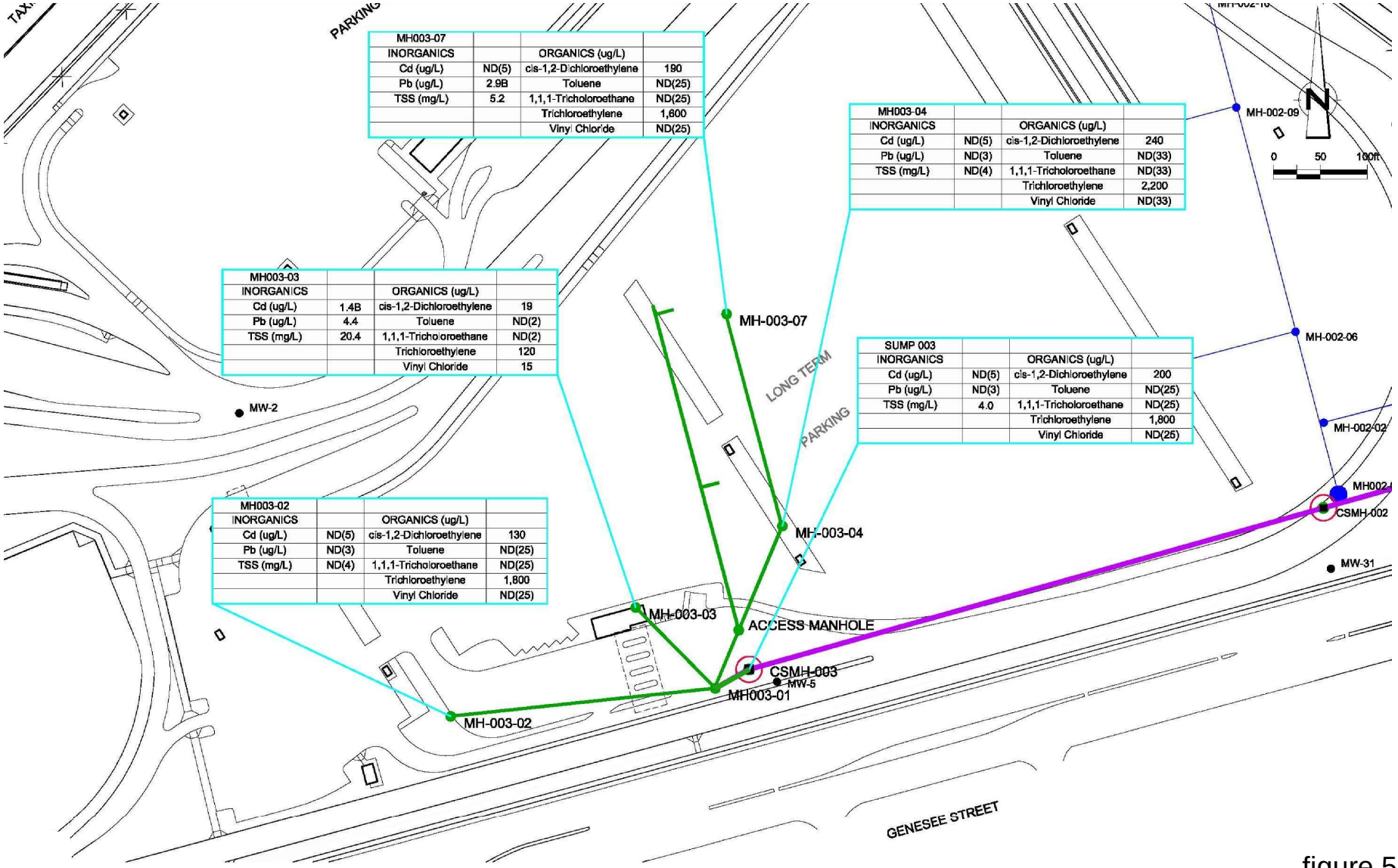

figure 5

SUMMARY OF MANHOLE SAMPLING DATA - 003 SYSTEM
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

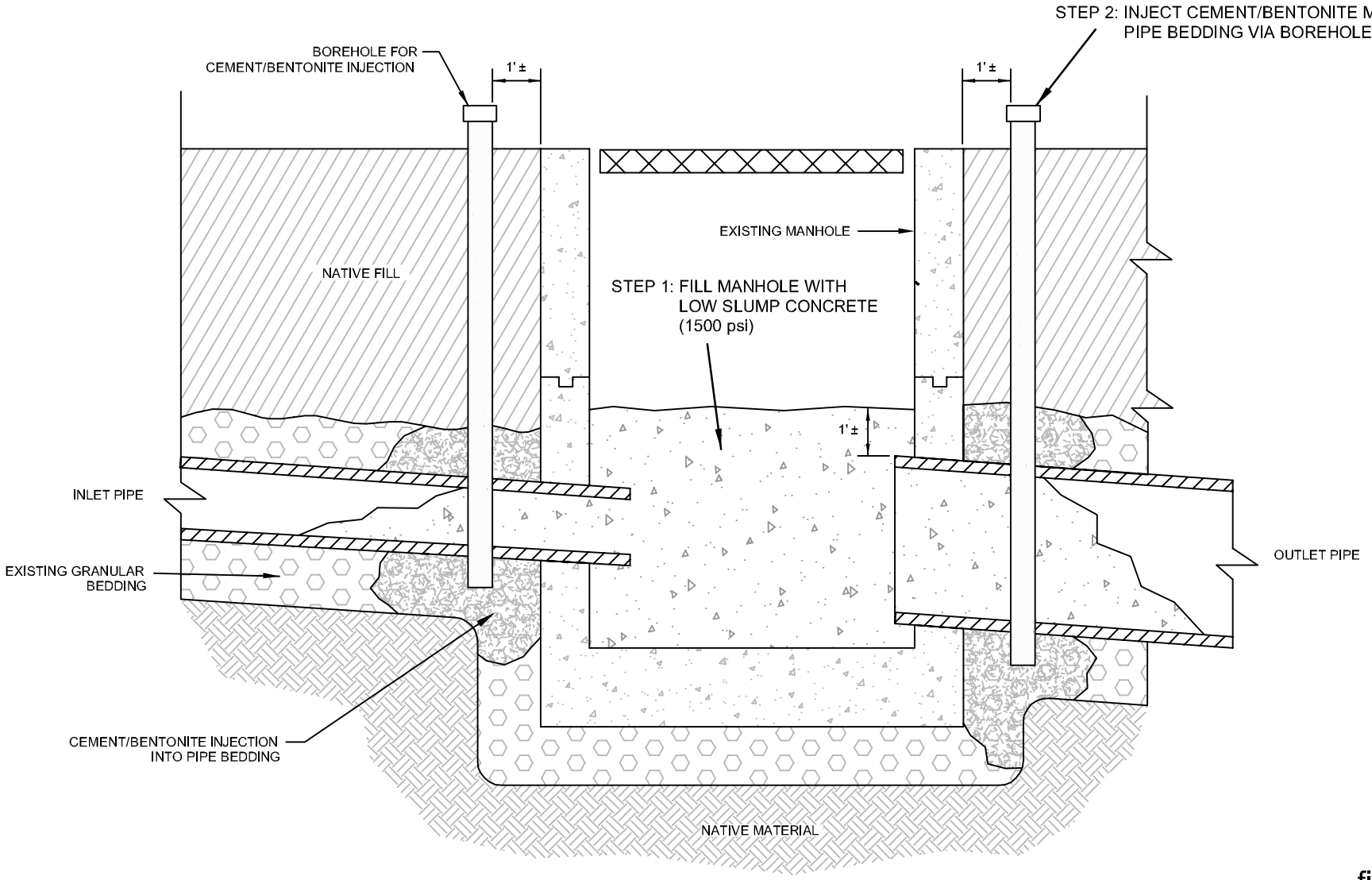

figure 6

STORM SEWER PLUGGING DETAIL
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

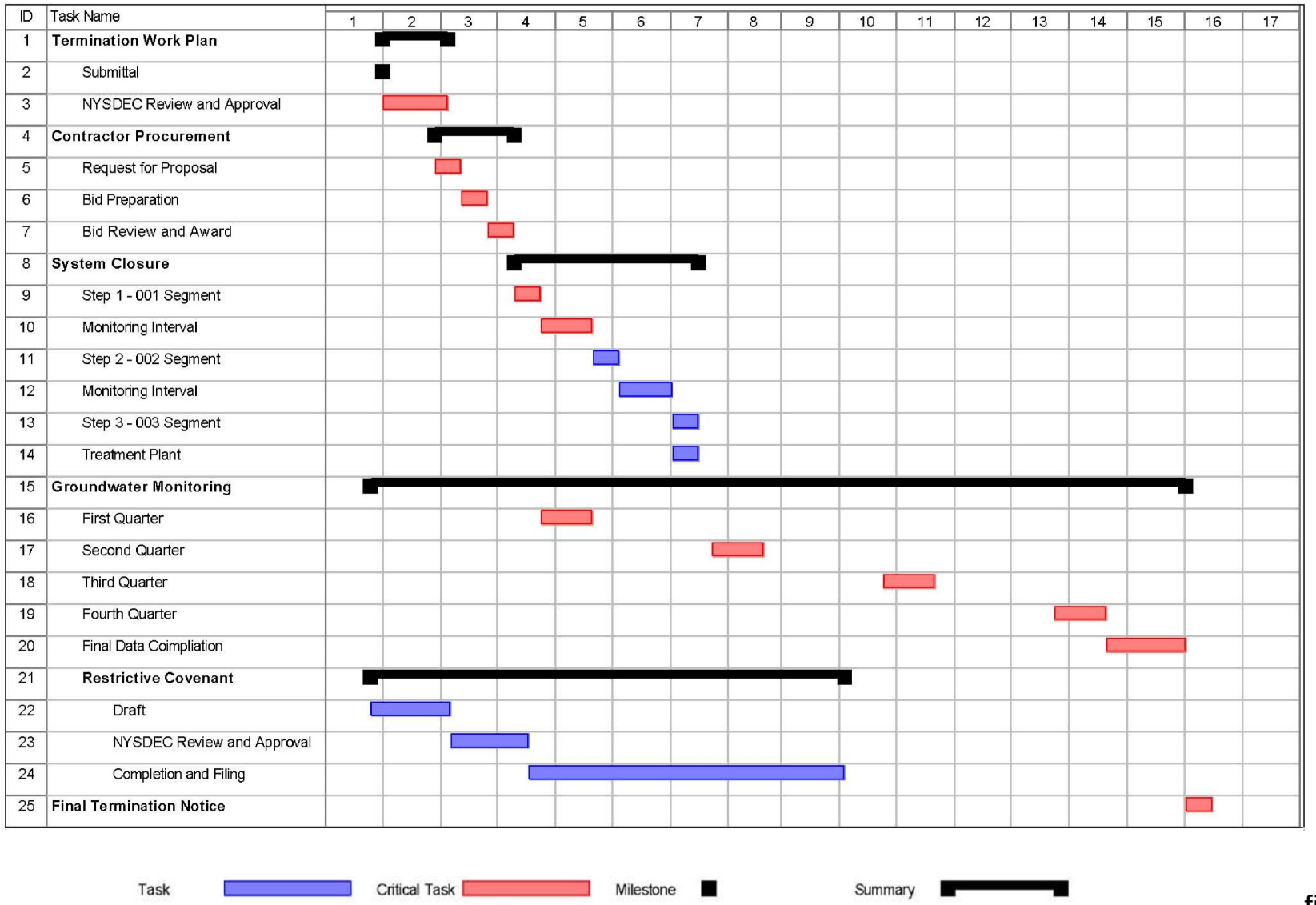

figure 7

COLLECTION AND TREATMENT SYSTEM TERMINATION SCHEDULE
NYSDEC SITE No. 9-15-066
Cheektowaga, New York