WORK PLAN - REVISION 1

CLOSURE OF GROUNDWATER COLLECTION AND TREATMENT SYSTEM

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

PREPARED BY

CBS CORPORATION
PITTSBURGH, PENNSYLVANIA

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1.0 INTRODUCTION

CBS Corporation[1] has prepared this Work Plan for closure of the groundwater collection and treatment system installed and operated 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"). As required by the NYSDEC 1995 Operable Unit 2 Record of Decision (ROD), the collection and treatment system addressed groundwater in the central and southern portion of the Site using former plant storm sewers for subsurface collection and conveyance. Figure 1 is a Site plan showing the location of this collection system and associated Site groundwater monitoring wells. Beginning in 1999, CBS managed the Remedial Program at the Site, including the operation, maintenance, and monitoring of the groundwater collection and treatment system, as one of the Respondents to an Order on Consent and Settlement Agreement, Index No. B9-0381-91-8 (the "Order") entered with NYSDEC.

This Work Plan describes the sequence and methods that will be employed in closing the collection and treatment system, the plan for post-closure monitoring, and the schedule of planned activities. This Work Plan also outlines the environmental restrictive covenants that will be placed on the affected portion of the Site by the Niagara Frontier Transportation Authority (NFTA) as the property owner and a Respondent under the Order.

CBS presented the rationale for closing the Site groundwater collection and treatment system in the report *Termination of Operation, Maintenance, and Monitoring Activities* submitted to NYSDEC on September 7, 2012 and reviewed with NYSDEC in the meeting of September 12, 2012. As described in that report, the remediation goals and Remedial Action Objectives

[1] CBS Corporation is the successor by corporate name change to Viacom Inc., which, in turn was the successor to Westinghouse Electric Corporation. For simplicity in this report, references to recent (1999 and later) actions undertaken by "CBS" include actions by its predecessors.

(RAOs) for volatile organic compounds (VOCs) and metals in groundwater have been met throughout the portion of the Site influenced by the collection and treatment system and all potential environmental benefits have been achieved. Closure of the system is the prudent and responsible action at this time and is consistent with NYSDEC technical guidance (NYSDEC, 2010), the NYSDEC 1995 ROD for Operable Unit 2, and the requirements of the Order.

This Work Plan was originally submitted to NYSDEC on October 10, 2012. NYSDEC reviewed the Work Plan and provided comments via its correspondence to CBS dated November 27, 2012. CBS evaluated the NYSDEC comments and concerns, and, as appropriate, responses to comments are reflected in this Revision 1 to the Work Plan.

2.0 PLANS AND PROCEDURES FOR SYSTEM CLOSURE

This section describes the step-by-step approach to closing the Operable Unit 2 groundwater collection and treatment system at the Site.

2.1 COLLECTION SYSTEM CLOSURE SEQUENCE

The collection system will be closed sequentially starting with the 001 segment and then proceeding, in turn, to the 002 and 003 segments. The work is planned to be completed in one construction contractor mobilization and in an uninterrupted, step-wise manner.

2.1.1 001 SEGMENT

The 001 segment of the collection system was partially closed in 2009 in accordance with the approved Revised Work Plan submitted by CBS to NYSDEC in November 2008. This partial closure involved the permanent plugging of manholes MH-001-02 and MH-001-06 located midway along the 001 segment profile (Figure 1). Plugging of these manholes was designed to split the 001 segment of the collection system, separating the upper portions where water levels were relatively deep below grade from the lower portions where water levels were near or at the ground surface. Closure involved both filling the manholes and plugging permeable pipe bedding materials around the outside of the manholes. Also, in accordance with the Work Plan, an additional groundwater monitoring well, MW-35, was installed just downstream of the pumping sump for the 001 segment of the collection system (*i.e.*, CSMH-001 or "Sump 001").[2] CBS submitted the report on this closure to NYSDEC in September 2009.

Figure 2 provides an overview of the work requirements to complete the closure of the 001 segment. These work activities will first involve the permanent plugging of manholes and

[2] The terminal manholes are referred to as CSMH-001, CSMH-002, and CSMH-003, respectively, for the three segments of the collection system from east to west at the Site (Figure 1). In some reports and drawings, these pumping stations are referred to Sumps 001, 002, and 003, respectively.

associated piping at MH-001-09, MH-001-10, and MH-001-13,[3] all of which are located upstream of previously closed manhole MH-001-06 (Figure 2). At each location, the manhole will first be inspected to assess the thickness of accumulated sediment. Sediments will either be evacuated from the manhole using a vacuum truck or dislodged using a high pressure water jet where the sediment layer is thin. If evacuated, the collected sediment will be delivered to the groundwater treatment plant area for dewatering and staging prior to off-site disposal. Sediment handling procedures are described in Section 2.2.1. If water jetted, the loosened sediment will eventually resettle within the pipe network. These three manholes will then be permanently sealed using the procedures described in Section 2.2.2.

While these upstream manholes are being closed, water levels will be pumped down in CSMH-001 to dewater the piping system below previously closed manhole MH-001-02. The pumped water will be conveyed through existing piping to the groundwater treatment system for treatment and discharge. Once the manholes and piping are dewatered to the extent practicable, the manholes will be inspected to assess the thickness of accumulated sediment. Sediments will be evacuated from the manhole either using a high pressure water jet or a vacuum truck with subsequent delivery to the treatment plant area for dewatering and staging prior to off-site disposal (Section 2.2.1). Following sediment removal/displacement, the sump pump will be pulled from CSMH-001, and the electrical service to this location will be disconnected and permanently locked out at the treatment building. The conveyance line from CSMH-001 will be capped or plugged at both the sump and treatment building. Manholes and associated piping at CSMH-001, MH-001-01, and MH-001-14 will then be permanently sealed using the procedures described in Sections 2.2.2 and 2.2.3 (Figure 2).

2.1.2 002 SEGMENT

After completing the work on the 001 segment, work will shift to the 002 segment of the collection system. Figure 3 summarizes the work tasks for closing the 002 segment.

[3] Despite multiple attempts to locate it, manhole MH-001-03 could not be found following NFTA's completion of runway extension work in this portion of the Site, and this manhole is assumed to be buried beneath a taxiway. As a result, manhole MH-001-03 is not addressed in this Work Plan.

For the 002 segment, the closure sequence will be to begin at manholes at the uppermost portion of the system and work downstream. The treatment system will remain in operation throughout the process to provide for treatment and discharge of the water draining from the open pipes as it regularly does. It is noted that it is not the intent, nor is it necessary to completely dewater the segment to complete the closure activities. The following closure sequence is planned: MH-002-13, MH-002-12, MH-002-10, MH-002-15, MH-002-09, MH-002-07, MH-002-06, MH-002-03, MH-002-02, and MH-002-01.[4] Sediment accumulations will be displaced or removed (Section 2.2.1), and manholes and associated piping will then be permanently sealed using the procedures described in Sections 2.2.2 and 2.2.3 (Figure 3).

Once manhole MH-002-01 is closed, the sump pump will be pulled from CSMH-002 and the electrical service to this location will be disconnected and permanently locked out at the treatment building. The conveyance line from CSMH-002 will be capped or plugged both at the sump and at the treatment building. Manhole CSMH-002 and its inlet piping will then be permanently sealed using the procedures described in Sections 2.2.2 and 2.2.3.

2.1.3 003 SEGMENT

Closure of the 003 segment of the system will be initiated following the closure of the 002 segment. Figure 4 summarizes the work tasks for closing the 003 segment.

Work on the 003 segment will begin with sediment displacement/removal using the procedures described in Section 2.2.1. Work will then proceed with the permanent plugging of manholes MH-003-07 and MH-003-03 and associated piping using the procedures described in Section 2.2.2. Work will then shift to manhole MH-003-01. This manhole will be sealed using the methods described in Sections 2.2.2 and 2.2.3, and the piping downstream of manholes MH-003-02 and MH-003-04 will then be partially filled with grout using the methods described in Section 2.2.4. Once filling of these lines is completed, manholes MH-003-02, MH-003-04, and the Access Manhole will be sealed using the procedures described in Sections 2.2.2 and 2.2.3. The treatment system will remain in

[4] Despite multiple attempts to locate it, manhole MH-002-05 could not be found following NFTA's completion of parking lot and road construction in this portion of the Site, and this manhole is assumed to be buried. As a result, manhole MH-002-05 is not addressed in this Work Plan.

operation throughout the 003 closure process to the extent practicable to provide for treatment and discharge of displaced water. Again, it is not the intent, nor is it necessary, to completely dewater the segment to complete the closure activities.

After all of the upstream manholes on the 003 segment are closed, the sump pump will be pulled from CSMH-003 and the electrical service to this location will be disconnected and permanently locked out at the treatment building. The conveyance line from CSMH-003 will be capped or plugged both at the sump and at the treatment building. Manhole CSMH-003 and its inlet piping will then be permanently sealed using the procedures described in Sections 2.2.2 and 2.2.3.

2.2 COLLECTION SYSTEM CLOSURE METHODS

2.2.1 SEDIMENT REMOVAL

Solids are present in some manholes and associated piping, although according to a recent survey, their thickness is minimal.[5] Site experience, including past pipe and manhole cleaning activities, indicate the sediments present in the collection system are predominantly calcium carbonate and magnesium carbonate precipitate formed by mixing waters of elevated pH and high hardness. Some solids originated as wash-in from unsealed connections to surface water (*e.g.*, roof leader, downspouts, and other surface drains). Overall, the sediments are very fine-grained and exhibit a low specific gravity. Their very low permeability is demonstrated by blinding particulate filters in water treatment.

Except where present in such quantities and depths that they may interfere with the physical introduction of materials used to plug manholes and piping, such solids will not affect the ability to effectively close manholes and piping. Because of their fine-grained texture and low specific gravity, these solids would be expected to readily mix with the introduced materials used in plugging. These solids are chemically compatible with the proposed plugging materials. While the strength of the plugging materials could be reduced somewhat

[5] At 11 of 12 accessible manholes on the 002 and 003 segments of the collection system, sediment thicknesses were measured at 0 to 3 inches and averaged less than 1.5 inches. The only exception was Manhole CSMH-002 (Sump 002) where sediments were found to be 18 inches thick. Measurements were not collected at manholes on the 001 segment due to restricted access.

by the presence of solids due to physical mixing and dilution, high strength is not needed to achieve the intended purpose of plugging the manholes and the potential reduction in strength is of no significant consequence to the effectiveness of the closure.

Where sediment accumulations in manholes are appreciable (with 12 inches taken as a nominal value for purposes of initial assessment), such sediments will first be removed or displaced from affected manholes using one of two methods. Sediments will be addressed according to the extent that the manholes are in a dewatered state as a result of the normal operation of the pumping system, or wherever it is reasonably practical to further dewater the piping system. The water will be diverted to the groundwater treatment plant. If sediment is to be removed from manholes, it will be accomplished using a vacuum truck. Once the truck is filled (typical capacity of 2,000 to 3,000 gallons), the truck will deliver its load of wet sediments to the area of the groundwater treatment plant. Multiple dewatering boxes will be staged in this area to receive the wet sediments, which will be off-loaded from the vacuum truck into one or more of the boxes. The boxes are constructed using road-worthy roll-off containers with watertight rear door gaskets and are designed to allow gravity drainage of water from the sludge through a screen and filter medium into a separate chamber. As the sediments dewater, the filtrate will then be pumped to the treatment system. Once the sludge is dewatered sufficiently, the roll-off will be covered and transported, using a licensed waste hauler, to a permitted off-site Subtitle D landfill. The dewatering box will then be returned to the Site, refitted with new filter fabric, and reused.

If there is minimal loose sediment present (as the recent survey results suggest), it would be more practical to simply dislodge the loose sediment with a high pressure water jet. The loosened sediment would be directed into the pipes entering the manhole where it would eventually drop out of suspension. Such jetting would be performed immediately prior to placement of the concrete plugs to minimize the amount of sediment that would resettle on the pipe opening and manhole bottoms before the concrete occupies the space. The minimal amount of sediment that resettles on the base would readily be infused into the concrete mix, thereby ensuring a tight seal.

2.2.2 MANHOLE AND ASSOCIATED PIPE PLUGGING

All 23 remaining manholes in the collection system[6] and the immediately adjacent sections of associated piping will be permanently sealed by filling the manholes with Portland cement concrete to a level at least two feet above the highest crown elevation of the associated manhole piping. Figure 5 provides a conceptual design detail.

The concrete will placed using a pumper truck that provides for introduction of the concrete into the bottom of the manhole through a flexible hose and tremie pipe. The concrete mix will be specified with a 1- to 2-inch slump and contain one percent of an accelerating admixture (*e.g.*, Pozzutec 20) to speed the rate of hardening. It is estimated that, on average, approximately 10 cubic yards of concrete will need to be placed in each manhole, resulting in a total placed quantity estimated at 230 cubic yards of Portland cement concrete.

Manholes will be "topped off" above the concrete to just below the manhole cover level using a controlled low-strength material (CLSM or "flowable fill") and the manhole covers will be replaced. Surface treatment consistent with surrounding use (*e.g.*, asphalt pavement, concrete pavement, or grass cover) will be the responsibility of NFTA.

2.2.3 PLUGGING OF PIPE BEDDING AT SELECTED MANHOLES

At selected manhole locations, especially manholes located in the downstream portions of the collection system, cement-bentonite grout will be injected to plug the pipe bedding to provide a barrier to migration of groundwater along the exterior of the piping adjacent to the selected manholes. Such grouting is planned for the following locations:

- 001 Segment – Manholes MH-001-01 and CSMH-001;
- 002 Segment - Manholes MH-002-09, MH-002-06, MH-002-02, MH-002-01, and CSMH-002; and
- 003 Segment - Manholes MH-003-04, MH-003-02, MH-003-01, and CSMH-003.

To ensure the best bedding seal possible and minimize complications with water handling, it is planned to seal around the pipes associated with these manholes rather than at the manhole

[6] This total excludes MH-001-03 and MH-002-05.

locations themselves. The native soils in the area are clayey in nature and therefore of low permeability. At the time the drainage system was installed, the excavations around the manholes would have been fairly extensive in order to install the manholes and the placement of bedding may have been irregular. However, the excavation for the pipe installation would have been relatively precise, with the expectation that less of the clayey soils would have been disturbed and the bedding would have been placed in a more consistent pattern. Consequently, grouting the bedding around the pipes has a higher probability of success in creating a good bedding seal than grouting at the manholes.

To seal the bedding around the pipes, the cement-bentonite grout will be injected into boreholes that have been drilled along both sides of the pipe approximately 15 feet upstream and downstream from the selected manhole. The boreholes will be installed as close as possible to the exterior of the pipe using sight lines provided of the pipes between adjacent manhole locations. The boreholes will be drilled to a depth of one foot below the elevation of the pipe invert. The grout will be injected under pressure through the opening in the end of the drill rod from a Geoprobe® rig. The rods will be initially retracted about 6 inches to allow pumping of the cement-bentonite grout through the drill rods and into the previously drilled opening and into the bedding. As the drill rod is being extracted, additional grout will be added to continue to plug the bedding to the extent possible.

The cement-bentonite grout will be mixed on-site and injected under pressure through a pressure-tight connection at the top of the drill rods. The grout mix is designed with the following composition:

- 45 percent Portland cement;
- 53 percent water; and
- 2 percent bentonite.

On a practical basis, the grout will be mixed in the field using three 94-pound bags of Portland cement and 15 pounds of bentonite in 40 gallons of water. As many batches as necessary will be mixed to complete the grouting at each pipe segment. To improve grout take into the boreholes, the first batch of grout at each location will be mixed slightly leaner (less viscous) to allow better penetration into any available permeable material. Subsequent batches will be mixed to a heavier consistency to plug the larger remaining void space in the

permeable material. If necessary, the bentonite-cement grout will be mixed in smaller batches to better accommodate the batch thicknesses and grout take into the bedding, as field conditions dictate.

2.2.4 PIPE FILLING

Historical data have shown that VOC concentrations are one to two orders of magnitude higher in the water encountered in portions of the 003 segment than elsewhere within the collection system. Accordingly, as added protection to reduce the potential water contact with bedding materials, the piping in the lower potion of the 003 segment will be partially filled with CLSM (flowable fill) to a minimum depth equal to one-half of the pipe diameter. It is recognized that the grout will seek a level surface when filling a sloped pipe. In some locations, it is anticipated that the lower reaches of the pipe will need to be filled 100 percent full in order for the upper reaches to be 50 percent full.

Pipe sections to be filled are the following:

- MH-003-02 to MH-003-01: 280 feet;
- MH-003-03 to MH-003-01: 120 feet;
- MH-003-04 to MH-003-01: 190 feet; and
- MH-003-01 to CSMH-0003: 40 feet.

A high-fluidity, low-strength CLSM will be pumped into the upstream manhole and allowed to flow to a temporary stop in the downstream manhole.

2.3 TREATMENT SYSTEM CLOSURE

After completing the closure of the 003 segment and processing all water generated in closure of the collection system, the equipment in the treatment plant will be emptied, cleaned, and disconnected. Salvageable equipment will be removed to an off-site location pending its sale or other off-site use. The carbon removed from the three adsorbers will be sent for reactivation and use elsewhere. Non-salvageable equipment and materials, including solids collected from the process vessels and unused treatment chemicals, will be removed for off-site disposal. After emptying and cleaning, the building will be turned over to NFTA for its use.

3.0 POST-CLOSURE MONITORING PLAN

As requested by NYSDEC, monitoring and inspection will be conducted subsequent to the closure activity to assess the effects of the closure on groundwater and surface water quality and to identify any newly manifested discharges to surface water.

Two years of quarterly post-shutdown groundwater and surface water monitoring will be conducted to ensure Site conditions are not adversely affected by the collection and treatment system shutdown. The data from this post-shutdown monitoring will be reported as it is developed to NYSDEC.

3.1 GROUNDWATER MONITORING

Groundwater monitoring will be conducted quarterly during the months of March, June, September, and December (or, if weather conditions do not permit such sampling, as soon thereafter as weather conditions permit) at wells MW-2, MW-5, MW-28, MW-30, MW-31, MW-34, MW-34D, and MW-35 for two years following the completion of closure activities. Monitoring will also be conducted at well MW-33 as an upgradient or background location.

In each of the post-closure monitoring rounds, groundwater levels will be recorded at all monitoring wells and at selected manholes associated with the former collection system. These data will be compared to prior water level data and used to develop potentiometric surface maps and evaluate Site-wide and localized groundwater flow patterns. Potential impacts to Site groundwater and sewer systems will be evaluated and recommendations for changes in the monitoring program or other actions will be made, as appropriate.

Sampling of all wells will be conducted using low-flow techniques wherever possible,[7] and analytical parameters and methods will be the same as currently employed in routine Site groundwater monitoring. Results of this groundwater monitoring will be compared to the

[7] Because of very slow recharge rates, at times low-flow sampling has not been possible in some Site monitoring wells. In any well sampling for which low-flow methods prove infeasible, the well will be sampled using a disposable bailer. If the sample collected by bailer is highly turbid (and sufficient sample volume is available), a portion of the sample will be field filtered (0.45 micron filter) and the sample analyzed for both total and dissolved cadmium and lead.

RAOs specified in the ROD (Table 1). Attainment of these RAOs throughout this two-year monitoring period will complete post-remedial groundwater monitoring.

If any RAO exceedances occur, NYSDEC will be consulted and additional monitoring and evaluations will be conducted as needed. The response would, of course, depend on the specific constituents and the degree, location, and persistence of exceedances.

3.2 SURFACE WATER MONITORING

Coincident with the quarterly groundwater monitoring, surface water monitoring will be conducted for two years at discharges from the NFTA storm sewer system that collects surface water from those portions of the airport property where the collection and treatment system has been operating. Figure 6 shows these storm sewers and the proposed discharge monitoring locations associated with the 001 and 002 segments of the collection system. These locations represent the furthest downstream points that are accessible for sampling and do not receive significant flows from other portions of the airport property or from Genesee Street. Prior to closure of the 003 segment, NFTA utility maps will be examined and a field inspection conducted to identify two or three surface water sampling locations downstream of the 003 segment of the collection system. These two or three points will be added to the NFTA storm sewer sampling network.

Surface water samples will be collected and analyzed for the following parameters:

pH	cis-1,2-dichloroethylene
Total suspended solids	Methylene chloride
Cadmium	Tetrachloroethylene
Chromium	Toluene
Lead	Trichloroethylene
1,2-dichlorobenzene	Vinyl chloride

Laboratory analyses of VOCs will be by U.S. Environmental Protection Agency SW-846 Method 8260C. The results of all VOC analytes in surface water determined by this method will be reported.

Flows will be estimated at the time of each sample collection, and other pertinent observations regarding the discharges (*e.g.*, sheen, precipitate, other solids) will be recorded. The timing of the sampling will coincide with monitoring of the treatment system effluent.

Results will be compared to the baseline sampling data collected in 2008 and 2009 as part of the partial closure of the 001 system (Table 2). If VOC and metals concentrations decrease or remain consistent with the 2008/2009 data, this two-year monitoring period will complete post-remedial surface water monitoring. If VOC or metals concentrations show a statistically significant increase or upward trend, NYSDEC would be consulted.

3.3 INSPECTIONS

In addition to the groundwater and surface water monitoring, the ground surface in the area of the former collection systems will be inspected on a quarterly basis for signs of surface seeps or discharges. If any such surface seeps or discharges are encountered, NYSDEC would be consulted.

3.4 FINAL TERMINATION NOTICE

Following the eight rounds of quarterly post-shutdown groundwater and surface water monitoring, and assuming that constituent concentrations in groundwater or surface water discharges are not significantly adversely affected by the shutdown, NYSDEC will be provided a final termination notice that summarizes the post-shutdown groundwater and surface water monitoring. At that same time or before, NFTA will provide NYSDEC the proof of filing of the land use restrictions with the Erie County Recorder of Deeds. NYSDEC will provide the Respondents with written confirmation that no further action is required at the Site.

4.0 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 part of the closure process, NFTA, as the property owner and as it has previously committed to the NYSDEC to do so, 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.

The restrictive covenants will also include a requirement to perform vapor intrusion investigations for any building proposed for construction within the area from which groundwater is currently being recovered, and, if necessary, preventative mitigation would need to be implemented where sources of VOCs may adversely impact indoor air quality in any such buildings.

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) continue to be achieved at the Site. As the property owner, it is the responsibility of NFTA to work with NYSDEC to develop and implement the necessary environmental restrictive covenants. NFTA will provide a complete draft of the restrictive covenants and required appendices to NYSDEC. NYSDEC has requested this submittal be made within 60 days of approval of this Work Plan.

5.0 SCHEDULE

Figure 7 presents the schedule for implementing this Work Plan for closure of the collection and treatment system at the Site. The schedule provides for 30 work days (6 weeks) for NYSDEC review and approval of this Work Plan. Contractor procurement, for which the schedule also allows 30 work days, would be initiated following NYSDEC review and approval.

On this basis, the system closure could begin in late February 2014. The schedule for the closure implementation tasks is highly weather-dependent, however, as the field work cannot be conducted during periods of severe cold or significant snow cover. Accordingly, a 6½ week (33 work day) tolling period is assumed to move the field work start date until mid-April 2014. As shown in Figure 7, system closure is expected to require approximately seven weeks following contractor mobilization with completion at the end of May 2014. The work is planned to be completed in one construction contractor mobilization.

The first round of quarterly groundwater and surface water monitoring would be conducted within 30 days of closure (*i.e.*, June 2014). On that basis, quarterly groundwater and surface water monitoring would be completed in March 2016 and the final termination notice would be filed with NYSDEC in the summer of 2016.

The project schedule assumes NFTA cooperation regarding Site access, work plan implementation, and completion of the restrictive covenants.

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TABLES

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

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

Table 2
Results of NFTA Storm Sewer Sampling

Sample Location	Sample Date	Estimated Flow (gpm)	pH (s.u.)	Total Suspended Solids (mg/L)	Constituent Concentration (ug/L)									
					1,2-dichlorobenzene	cis-1,2-dichloroethylene	Methylene Chloride	Toluene	Tetrachloroethylene	Trichloroethylene	Vinyl chloride	Cadmium	Chromium	Lead
001 System														
NFTA Storm Sewer (MH-1A)	12/18/08	15	NA	NA	1.0 U	1.0 U	1.0 U	**0.21 J**	**0.71 J**	1.0 U	NA	NA	NA	NA
	04/16/09	14	**7.7**	**2.8 B**	1.0 U	1.0 U	1.0 U	**0.20 J**	**0.94 J**	1.0 U	1.0 U	**1.3 B**	**3.0 B**	**6.1**
NFTA Storm Sewer (MH-1B)	04/16/09	14	**7.9**	4.0 U	1.0 U	1.0 U	1.0 U	**0.26 J**	1.0 U	**0.23 J**	1.0 U	**1.3 B**	5.0 U	3.0 U
NFTA Storm Sewer (MH-1C)	04/16/09	S	**8.0**	**11.2**	1.0 U	1.0 U	1.0 U	**0.20 J**	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	3.0 U
002 System														
NFTA Storm Sewer (MH-2A)	12/18/08	22	NA	NA	1.0 U	**30**	1.0 U	1.0 U	**0.88 J**	**42**	NA	NA	NA	NA
	04/16/09	7.0	**8.0**	4.0 U	1.0 U	**20**	1.0 U	1.0 U	1.0 U	**49**	1.0 U	5.0 U	5.0 U	3.0 U
NFTA Storm Sewer (MH-2B)	12/18/08	14	NA	NA	1.0 U	**36**	1.0 U	**0.36 J**	**15**	**75**	NA	NA	NA	NA
	04/16/09	7.8	**11.6**	4.0 U	1.0 U	**52**	1.0 U	**0.39 J**	**19**	**150**	1.0 U	5.0 U	**5.3**	**4.8**
NFTA Storm Sewer (MH-2C)	04/16/09	0.1	**9.2**	**110**	1.0 U	**12**	1.0 U	1.0 U	**5.4**	**34**	1.0 U	5.0 U	**3.2 B**	3.0 U
NFTA Storm Sewer (MH-2D)	04/16/09	S	**8.7**	**687**	1.0 U	**20**	1.0 U	**0.15 J**	1.0 U	**71**	1.0 U	**0.52 B**	**29**	**52**
003 System														
NFTA Storm Sewer (MH-3)	12/18/08	5.0	NA	NA	2.5 U	**37**	3 U	3 U	**1.2 J**	**160**	NA	NA	NA	NA
	04/16/09	5.0	**10.1**	**9.6**	12 U	**63**	12 U	12 U	12 U	**450**	12 U	5.0 U	**11.5**	3.0 U

Table 2
Results of NFTA Storm Sewer Sampling

Notes:

1. *For manhole locations, see Figure 6.*
2. *"NA" indicates not available.*
3. *"S" indicates water present, but no discernible flow.*
4. *Data Legend*:

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

   Organic Data Qualifiers:

   U - not detected at indicated reporting limit (RL).

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

   Inorganic Data Qualifiers (also apply to total suspended solids):

   U - not detected at indicated RL

   B - detected concentration above MDL, but below RL.

FIGURES

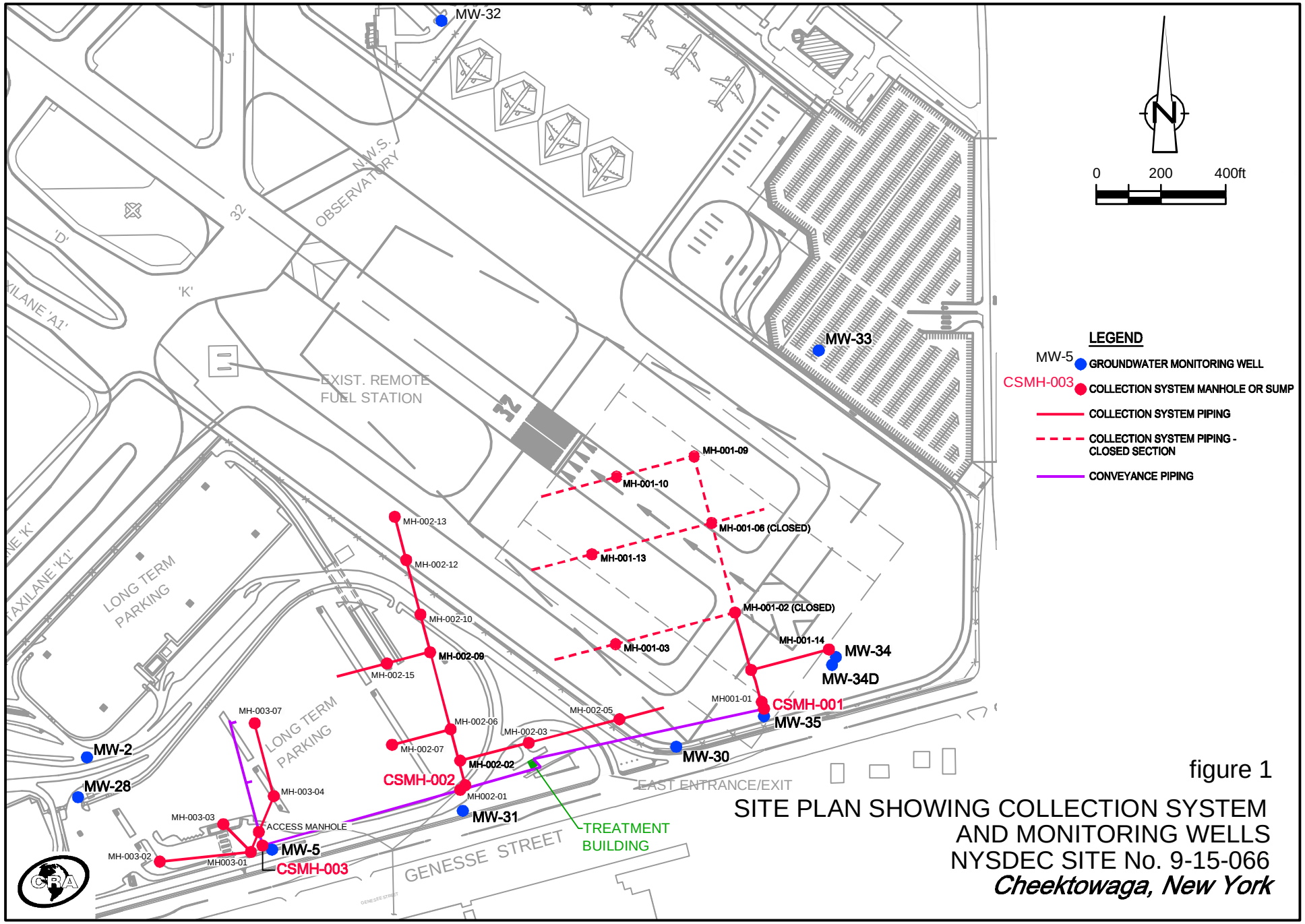
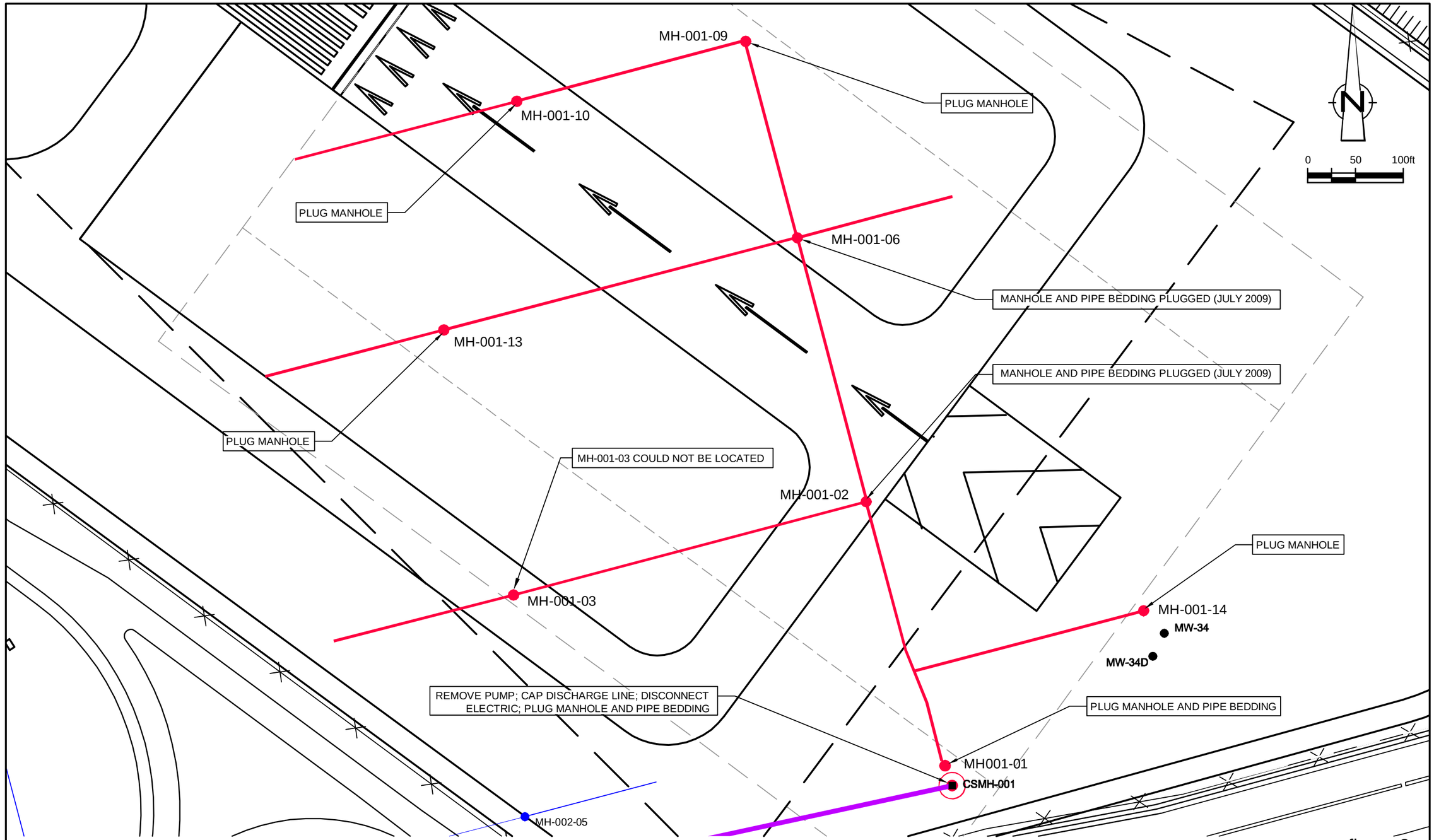


figure 1

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

18036-1260(PRES002)GN-WA001 OCT 4/2012



NOTE:
REMOVE APPRECIABLE (>12-INCH) ACCUMULATIONS OF SEDIMENTS FROM MANHOLES BEFORE PLUGGING

figure 2

001 SEGMENT CLOSURE
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

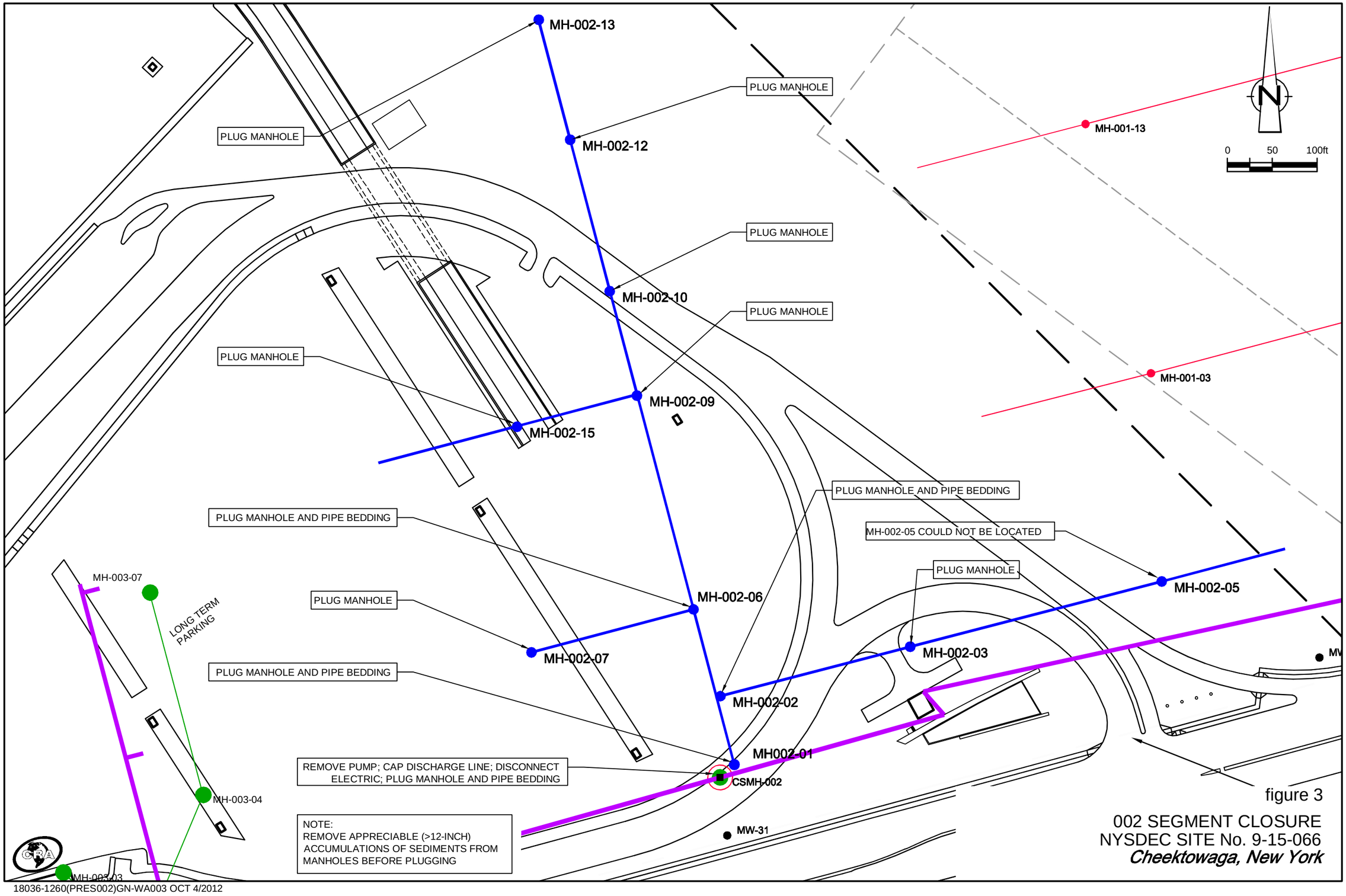


figure 3

002 SEGMENT CLOSURE
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

18036-1260(PRES002)GN-WA003 OCT 4/2012

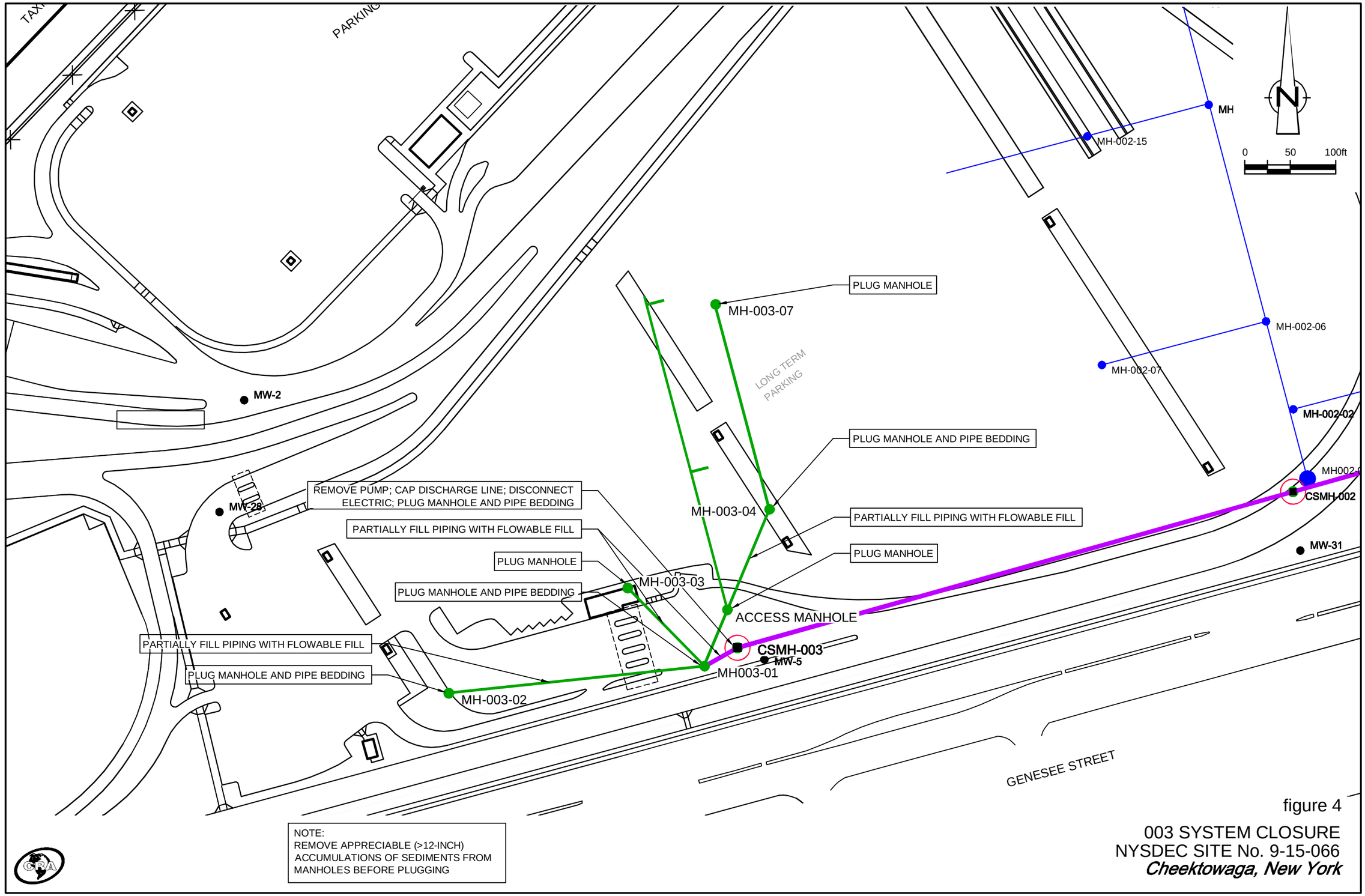
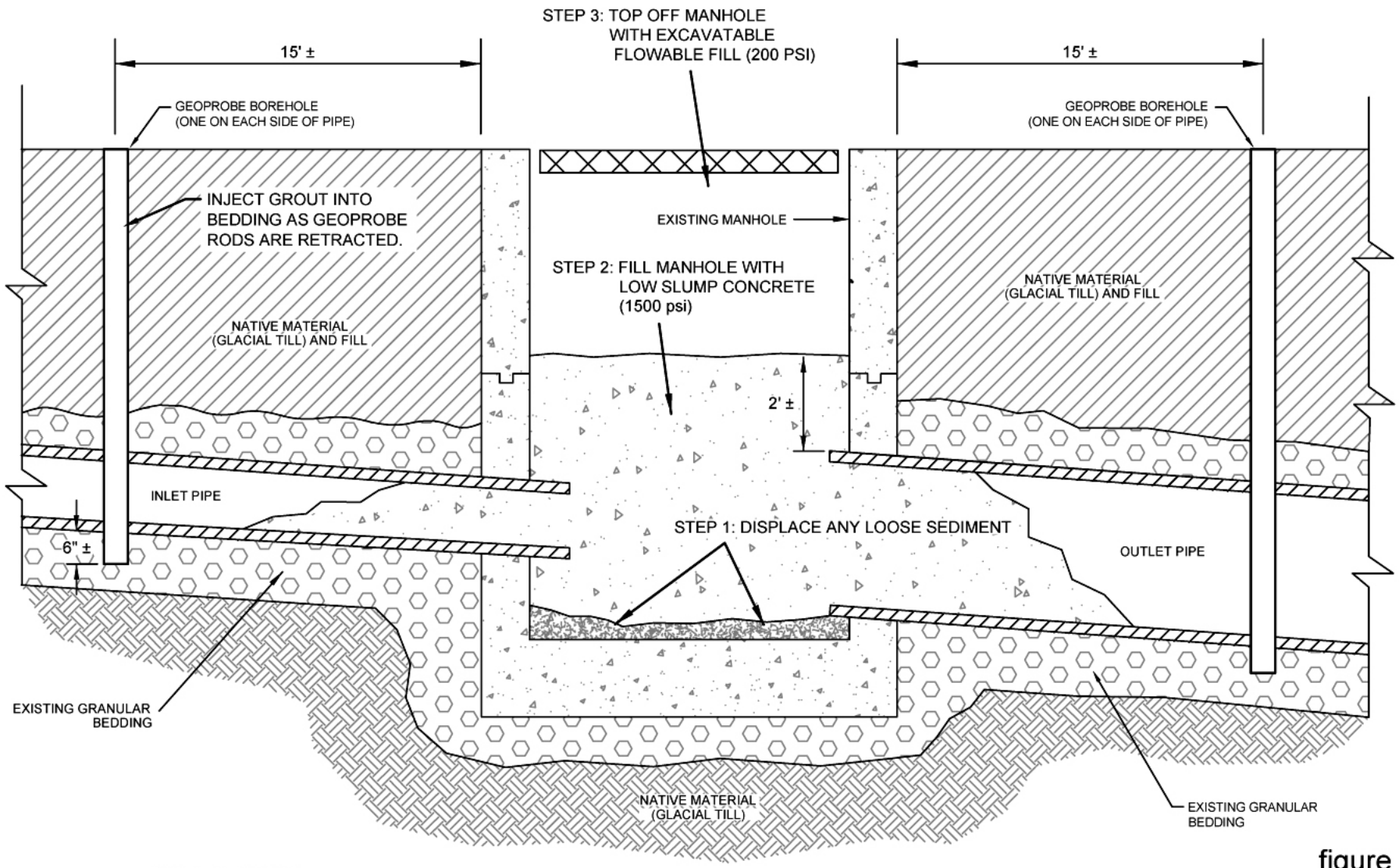


figure 4

003 SYSTEM CLOSURE
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

18036-1260(PRES002)GN-WA004 OCT 4/2012



NOT TO SCALE

figure 5

MANHOLE PLUGGING AND PIPE BEDDING PLUGGING DETAIL
NYSDEC SITE No. 9-15-066
Cheektowaga, New York

LEGEND

CSMH FORCEMAINS
CSMH-001 SYSTEM
CSMH-002 SYSTEM
CSMH-003 SYSTEM
NFTA STORM SEWER
STORM WATER MONITORING LOCATION

MH-001-10
MH-001-06
MH-001-13
MH-001-03 COULD NOT BE LOCATED
MH-001-02
MH-001-03
MH001-01
CSMH-001
MW-30
MH-002-13
MH-002-12
MH-002-10
MH-002-09
MH-002-15
MH-002-05
MH-002-07
MH-002-03
MH-002-02
MH002-01
CSMH-002
MW-31
MH-003-07
MH-003-04
MH-003-03
ACCESS MANHOLE
CSMH-003
MH003-01
MW-5
MH-003-02
MW-2
LONG TERM PARKING
PARKING
EAST ENTRANCE/EXIT
GENESEE STREET
0 50 150ft
42" 001 SAMPLE FROM INLET
24" 24" 002 SAMPLE FROM INLET (2 LOCATIONS)
003 SAMPLE FROM INLET 48"

figure 6

NFTA STORM SEWER MONITORING LOCATIONS
DOWNSTREAM OF 001 AND 002 SEGMENTS
NYSDEC SITE NO. 9-15-066
Cheektowaga, New York

ID	Task Name	Duration
1	**Work Plan and Design**	**60 days**
2	Revised Work Plan Submittal	0 days
3	NYSDEC Review and Approval	30 days
4	Contractor Procurement	30 days
5	**Tolling Period for Winter Weather**	33 days
6	**System Closure**	**17 days**
7	**Mobilization and Setup**	2 days
8	**001 Segment (Upper)**	**2 days**
9	Sediment Removal	1 day
10	Manhole Closure	1 day
11	**001 Segment (Lower)**	**8 days**
12	Sediment Removal	1 day
13	Bed Grouting	2 days
14	Manhole Closure	1 day
15	CSMH-001 Closure	1 day
16	**002 Segment**	**9 days**
17	Sediment Removal	2 days
18	Bed Grouting	2 days
19	Manhole Closure	4 days
20	CSMH-002 Closure	1 day
21	**003 Segment**	**11 days**
22	Sediment Removal	2 days
23	Bed Grouting	2 days
24	Pipe Filling	3 days
25	Manhole Closure	3 days
26	CSMH-003 Closure	1 day
27	**Treatment System Operation**	25 days
28	**Sediment Handling**	25 days
29	**Treatment System Closure**	15 days

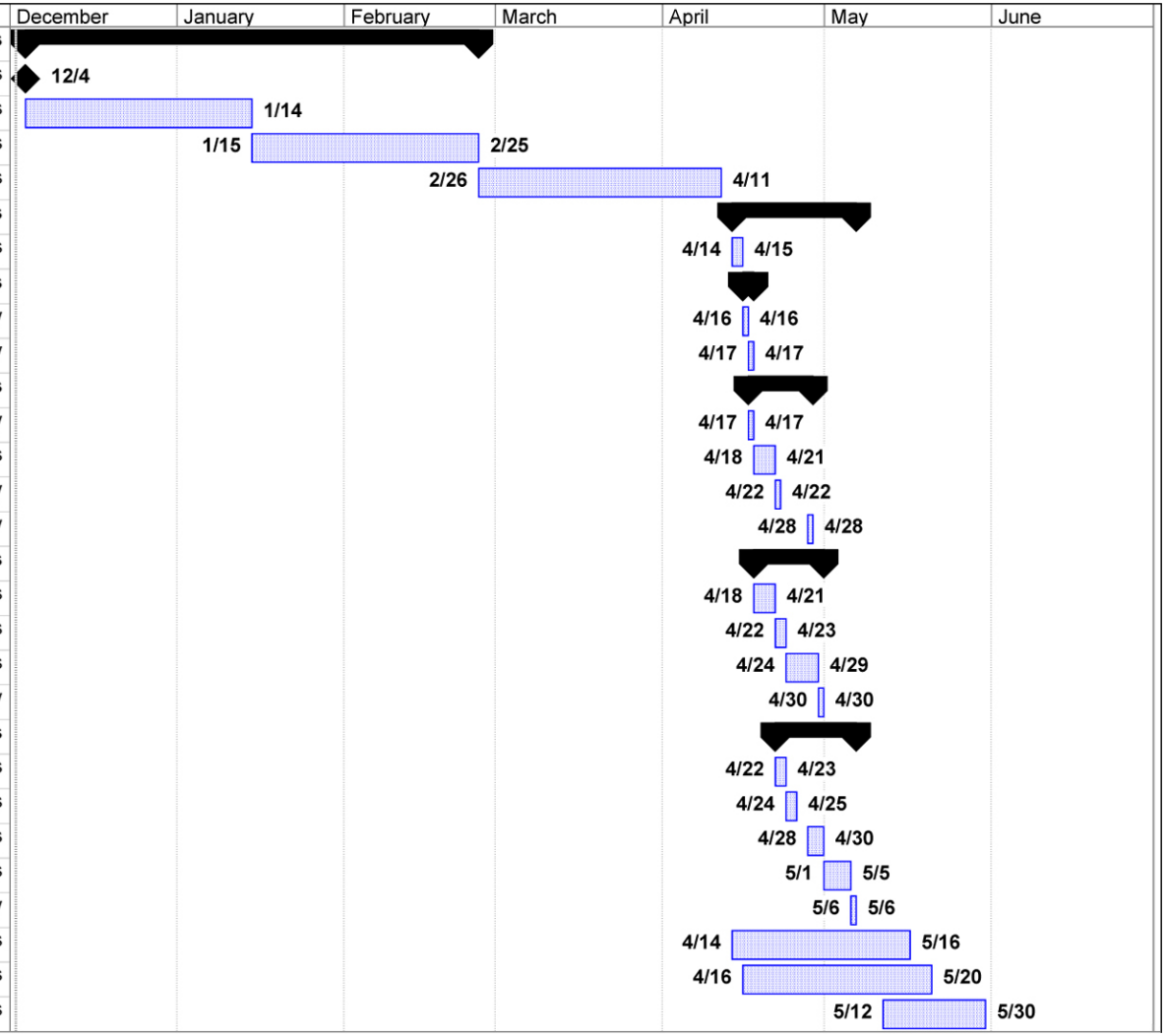


figure 7

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