NATURAL DRAINAGE RESTORATION PROJECT WORK PLAN

Former AltX Facility

201 Spring Street

Watervliet, NY

Prepared for:
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Environmental Engineer 2
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Prepared by:

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August 2007

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ATTCHMENTS:

1.0 INTRODUCTION

At the request of AltX/Salem Tube, Inc., Earth Tech, Inc. has prepared this work plan for the natural drainage restoration project at the former AltX Specialty Steel Corporation facility located at 201 Spring Street, City of Watervliet, Albany County, NY (the "Site"). A site location map is included as **Figure 1**.

This Work Plan specifies the methods and procedures to be used to restore the natural flow of surface water drainage pathway located around the outside western and southern edge of areas of known or suspected contamination.

1.1 HISTORY

The Site is a listed New York State Inactive Hazardous Waste Disposal Site (Site No. 4-01-003) The Former Al Tech Main Plant Area (MPA) and Waste Management Area (WMA) together occupy approximately 99 acres in the southeast side of the Town of Colonie near the border with the City of Watervliet. The property is bordered by residential property on the north and west side, and by commercial/industrial property on the east side. A cemetery abuts the Site on the south side.

The MPA encompasses approximately 68 acres and consists of a number of large buildings. Various steel-producing activities took place at the site since approximately 1910. The plant is now largely in-active. The WMA totals approximately 31 acres located north and west the MPA. The WMA has been closed, is monitored by NYSDEC, and is outside the area of concern for this project.

PCBs have been detected sporadically in the subsurface of the southern most portion of the MPA. PCB contamination has also been detected above applicable standards in groundwater in that area. An investigation was performed to determine the extent of the PCBs and whether contamination is leaving the site. No process that involved the use of PCBs has been documented at the facility. It is suspected the PCBs originated from damaged transformers on the site. Seven PCB-contaminated transformers were removed and disposed of in March 2006 from the site.

As a result of scrap-steel reclaimation activities performed in the spring of 2005 in the southern portion of the MPA, natural site drainage features were disrupted such that storm water flow that was previously diverted around the site by a drainage swale has pooled and opened new drainage swales across areas of known or suspected contamination. Since that time, numerous secondary drainage swales, areas of pooled water, and emerging wetland-like vegetation have established themselves in the southwest portion of the MPA.

1.2 PROJECT PURPOSE

The purpose of the project is restore the previously existing natural drainage swale. This should eliminate surface water flow across the southern portion of the MPA induced by the changes to the previously existing natural drainage network.

2.0 SCOPE OF WORK

The work would be divided into three primary phases.

Phase I: Planning Phase
Phase II: Implementation Phase
Phase III: Certification and Reporting Phase

The following sections detail subtasks required to complete each phase of the work.

2.1 PHASE I

The planning/scoping phase of the project consists of the numerous site visits, historical document review, data and map retrieval and review, US Army Corps Notification, and discussions with NYSDEC necessary to complete this plan. It is essentially complete upon NYSDEC approval of this Work Plan.

Based on our understanding the planning phase will produce one deliverable to NYSDEC, this document. A site-specific Safe Work Plan (SWP) will be prepared and available on site for review during the field work.

No Quality Assurance Project Plans will be required for the project due to the non-intrusive nature of the work and limited number of environmental samples to be collected during the project. QA/QC will be performed as necessary in general accordance with the generic QAPP submitted for SSC DO-00436.

A Joint Application for Permit under Nationwide Permit 3 was submitted to the US Army Corp of Engineers. NWP3 is applicable because the purpose of the project is to restore a natural previously existing upland drainage feature that was inadvertently disrupted by site activities.

No detailed design documents are required for this project. No hydraulic analysis will be conducted to demonstrate the efficacy of the conceptual plans included in this Work Plan or evaluate the final "as-builts" with respect to the capacity of restored drainage to accommodate flood level precipitation events.

2.2 PHASE II

The Implementation Phase consists of the following activities:

- Base Survey
- Site Preparation
- Sampling
- Construction and Oversight
- Post-construction Survey

The following sections detail the methods and procedures to be used to conduct each of the listed activities.

2.2.1 Base Survey

A base survey of the existing site conditions would be prepared along the path of proposed drainage restoration pathway. Based on current NYSDEC standards, the existing conditions would be surveyed with sufficient horizontal and topographic controls to produce a 1:600 scale (1 inch = 50 feet) topographic map with 1-foot contour interval. The survey would be limited to 50-feet to either side of the axis of the

proposed drainage path. To the extent practical, the survey would be matched into the existing topographic maps of the area supplied to Earth Tech by NYSDEC. The approximate limits of the area of the survey are included on **Figure 2**.

2.2.2 Site Preparation

Site preparation consists of the installation of erosion controls, construction of a decontamination pad, delineation of work zones, clearing excessive growth from the work areas and drainage pathway, final site preparation and inspection with notice to proceed.

Prior to initiation of the construction phase the site would be prepared in general accordance with the approved Work Plan and SWP. Site preparations include delineation and mark-out of OSHA required work zones, preparation equipment and personnel decontamination pads, installation of anti-erosion barriers (silt-fences), clearing overgrown vegetation, and delineation of temporary staging areas for equipment, building materials, and IDW.

2.2.2.1 Work Zones, Decon and Staging Areas

Essentially, the entire site located beyond the blacktop and concrete and service roads south and west of Building 8 will be designated the exclusion zone. Decontamination will be conducted on the blacktop along the north side of Building 8, staging on the concrete south of and adjacent to Building 8, and the safe zone will be all areas east and north of these areas. The approximate limits of these areas are depicted on **Figure 3.**

2.2.2.2 Silt curtains

Anti-erosion control barriers will be installed to prevent clean-fill and/or disturbed soils from entering the stream during the construction phase. A barrier will be placed along the eastern edge of the former drainage path between the stream and the proposed berm location, at approximately the top of the stream embankment. This barrier will be installed from the point where the property boundary fence crosses the former channel to the point where the drainage enters the existing serviceable culvert.

Another barrier will be installed along the eastern edge of the pooled water body located near the southern property access roadway immediately upstream from the new culvert location. This barrier will be located between the pooled water and the top of the proposed embankment. The approximate locations of the silt-fences are shown on **Figure 3**.

2.2.2.3 Clearing Overgrown Vegetation

In order to allow the natural drainage pathways to quickly reestablish themselves, excessive overgrown vegetation will be removed from the stream channel. Hand-held powered equipment will be used to cut down vegetation along the former drainage path. The entire course of the streambed from the point where it enters the site from the hillside to the west to the point where it exits the site to the south will be cleared of brush and shrub for approximately 3 feet to either side of the central axis of the stream course. Woody plants and debris will not be removed.

2.2.2.4 Final Site Preparation Inspection and Notice to Proceed

Upon completion of site preparation activities, Earth Tech project management and NYSDEC will inspect the site prior to commencement of construction activities. A verbal notice to proceed from NYSDEC (to be followed by written authorization) will suffice to commence construction activity.

2.2.3 Sampling

Environmental media sampling will be conducted before and after the construction phase to demonstrate that impacted soils are not being released from the site. A total of 5 soil and 3 surface water samples will be collected and analyzed for PCBs using USEPA SW-846 testing procedures. The approximate proposed sample locations are depicted on **Figure 3**.

Three soil and one surface water sample will be collected before construction begins. One soil sample will be collected from each end of the proposed drainage culvert to be installed beneath the southern access road and one soil sample will be collected from the north end of the pooled water north and west of the new culvert where the existing culvert discharges to the pool. A surface water sample will be collected from the pooled water. All samples will be collected using hand tools (disposable trowels for the soils and a bottom filling bailer for the water samples). The samples will be shipped by common carrier for overnight delivery to an ELAP certified environmental laboratory. Laboratory analytical services will be provided by CHEMTECH, Mountainside, NJ.

Two soil/sediment samples and two surface water samples will be collected and analyzed for PCBs using USEPA SW-846 methods at the conclusion of the construction phase. A sediment filter trap will be installed at the downgradient end of both the newly installed and previously existing site drainage culverts to accumulate sediments being transported by the stream flow. Immediately following the first significant* precipitation event after construction, Earth Tech will mobilize to the site to retrieve the sediment filters and collect surface water samples from the flow at discharging from the culvert at each location.

* “Signifcant” precipitation is a maximum intensity of > 0.2” per hour or a total precipitation of > 0.5” per 24 hour period. Earth Tech may visit the site and determine if the sediment accumulated in the filter and the flow rate of the stream after any “event” is sufficient for sampling.

For scheduling purposes, preliminary sampling will be conducted and the analytical results received prior to completion of the site preparation phase of the work. A summary of the sample results will be made available to NYSDEC during the pre-construction phase site visit. The results of the final sampling event will be submitted to NYSDEC immediately upon receipt before finalizing the Certification Report.

2.2.4 Construction and Oversight

All construction activities will be performed Precision Industrial Maintenance, Inc, Schenectady, NY under the direct technical oversight of Earth Tech. A detailed daily field log and photographic log of construction activities will be recorded in the field for inclusion in the final report. Salem Tube and NYSDEC will be notified immediately of any significant change in condition or circumstances that potentially increase the threat of an environmental release or any delay in the construction schedule. The construction work will progress from upgradient to downgradient commencing with the construction of the berm along the former stream and concluding with the installation of the culvert beneath the southern access roadway. Details for the various construction elements are included in Section 3.

2.2.5 Post-construction Survey

Upon completion of the construction phase, a post-construction topographic survey will be performed for comparison of the pre-construction and pos-construction topography. It is assumed that the post-construction survey will be conducted over an area approximately 25 feet to either side of the axis of the stream (compared to 50 feet for the base survey) and included all of the changed conditions. However, some areas may be larger or smaller based on the actual match line with the base survey.

3.0 CONSTRUCTION DETAILS

Construction activities are divided into three distinct elements:

1. constructing the berm;

2. grading downgradient edge of pooled water; and,

3. installation of drainage culvert beneath southern access road.

Conventional earth moving equipment will be used to perform the construction and include; an excavator, bulldozer, and dump trucks. No intrusive activities will be performed within the footprint of NYSDEC delineated contaminated soils. The culvert is to be installed beyond the assumed designated limits of impacted soils, as will be confirmed by sampling prior to installation. The following sections detail the procedures and materials to be used for the construction elements.

3.1 THE BERM

A natural earthen berm will be constructed along the eastern edge of the former drainage channel located immediately below the old railway yard embankment along the western edge of the MPA. The berm would be constructed of "clean-fill" supplied by a local sand and gravel quarry consisting of a run-of bank sand and gravel or a washed gravel that nominally meets the requirements for NYS DOT Spec Item 304.02.

Commencing at the point where the property boundary fence crosses the former stream bed, material transported in dump trucks will be unloaded and immediately graded into place so that an access road along the top of the former rail yard embankment is advanced adjacent to the previously existing drainage pathway simultaneously creating the berm and facilitating additional delivery of material. This process will be continued for the entire length of the berm from the fence to the point where the former drainage pathway enters the existing downgradient 24" RCP culvert pipe.

Sufficient material will be placed to create an access road for the dump trucks approximately 12 feet wide and 1 foot high at the center. After placement of all material along the length of the berm, the newly created access roadway will be graded so that a nominal 18-inch to 2 foot high by 3-4 foot wide embankment along the western edge of the access road is created and an 8 foot wide access road approximately 6-inhes thick remains for any future inspection and/or maintenance of the berm as may be needed.

The approximate location of the berm is depicted on **Figure 2**.

3.2 GRADING OF POOLED AREA

A small pond approximately 30 feet wide and 100 feet long has been created near the southern most edge of MPA by the excavation of the previously existing drainage culvert. Surface water runoff from the pond has created several drainage swales along the eastern downgradient edge of the pool creating flow paths to the east across the MPA. Abundant native soils remain piled in the area from previous excavation activities to be used as regarding materials.

The entire length of the eastern edge of the pool will be graded using the available natural borrow materials. A smooth sloped natural berm will be created that is nominally 2 feet higher along the eastern downgradient edge than along the western upgradient edge so that in the event of overfill, the pool will

back flood into the existing emerging wetlands along the west side of the pool and no longer flow to the east.

The corrugated steel culvert entering the pool at the northwest end will be repaired so that stream flow is unrestricted. If possible, the culvert will be repaired in place. However, if necessary, a small area around the damaged end of the culvert will be excavated until an undamaged section of pipe is exposed and the pipe saw cut to remove the damaged portion. Any excavated materials would be used to grade the eastern edge of the pool.

3.3 CULVERT INSTALLATION

A 24" diameter corrugated steel pipe will be installed at the southern end of the pond beneath the existing southern property access road. Commencing at the base of the slope on the downgradient side of the roadway where the former stream channel is located, an excavation approximately six feet deep, 25 feet long, and nominally 4 feet wide would be excavated would be installed across the access roadway.

The culvert pipe would be installed in the open excavation such that the elevation of the invert of the pipe at the upgradient end is approximately 6-inches below the surveyed elevation of the top of the pipe entering the pond. The culvert would be pitched at a maximum slope of 0.01 to prevent excessive downgradient scour. Approximately 1 yard of course gravel (#4 or better) would be placed in the drainage channel at the outfall of the pipe to absorb excess flow energy and prevent excessive scouring. It is assumed that the gravel will be approximately one-foot thick, three feet wide and extend approximately nine feet from the outfall.

In this way, the pond would retain its quality as a sediment trap for any course materials flowing down stream while simultaneously creating a semi-permanent groundwater mound to deflect groundwater migrating from the site back to the east and north (offering some additional measure of additional hydraulic control of any impacted groundwater that may be migrating to the south).

After placement of the culvert, the excavation would be backfilled with the excavated cuttings. After the culvert is buried, materials would be placed in the excavation on top of the pipe in 2 foot lifts and compacted until original grade is restored. Excess cuttings (estimated at approximately 3-4 yards) would be used to grade the roadway across the culvert and fill low spots in the roadway from surface flow cause by the previous pond overflows.

During the installation of the culvert, it may be necessary to temporarily lower the water level in the ponded area. Pumps would be used to draw dawn the water to below the level of the planned invert of the new culvert. Water would be pumped around the area of the excavation and discharged to the drainage swale south of the access road. Once the pipe has been installed and buried, the water level in the pond would be allowed to resume its natural level.

The approximate location of the new and existing culverts are depicted on **Figure 2**.

4.0 CERTIFICATION REPORT

A Certification Report would be prepared and submitted to NYSDEC at the conclusion of construction activities. The report would contain a narrative of the construction, with details concerning any changes or variations from the work plan, copies of the daily field reports, photographic log of construction activities, a site map of the pre and post construction topography, cross sections of the endpoints and center of the bermed area and the newly installed culvert, and a summary of the pre and post excavation laboratory analysis of environmental media.

The report would be certified by a NYS Professional Engineer that the work was substantially completed in general conformance with the work plan.

5.0 PROJECT SCHEDULE

Upon receipt of NYSDEC's written notice of approval of the work plan, Earth Tech personnel would mobilize to the site to collect the pre-construction environmental media samples and conduct the pre-construction survey. Site preparation activities described in Section 2.0 would be scheduled for completion on the same day as the anticipated receipt of the laboratory preliminary results (10 days after submission of the samples).

Assuming the completed site preparation activities are approved by NYSDEC, the construction contractor would be mobilized to the site to begin construction activities. It is assumed that 5 or six days would be necessary to complete the construction. NYSDEC would be notified during the construction phase of the anticipated completion date so that an on-site meeting could be scheduled to inspect the substantial completion of construction.

The final round of sampling would be conducted on the first "significant" precipitation event after completion of construction. The Certification report would be prepared and submitted to NYSDEC within 30 days of receipt of the final round of laboratory analytical results.

The total project schedule from Notice to Proceed to submission of the Certification Report is expected to be approximately 60 business days.

FIGURES

Google Maps

Address **201 Spring Street Rd**
Watervliet, NY 12189

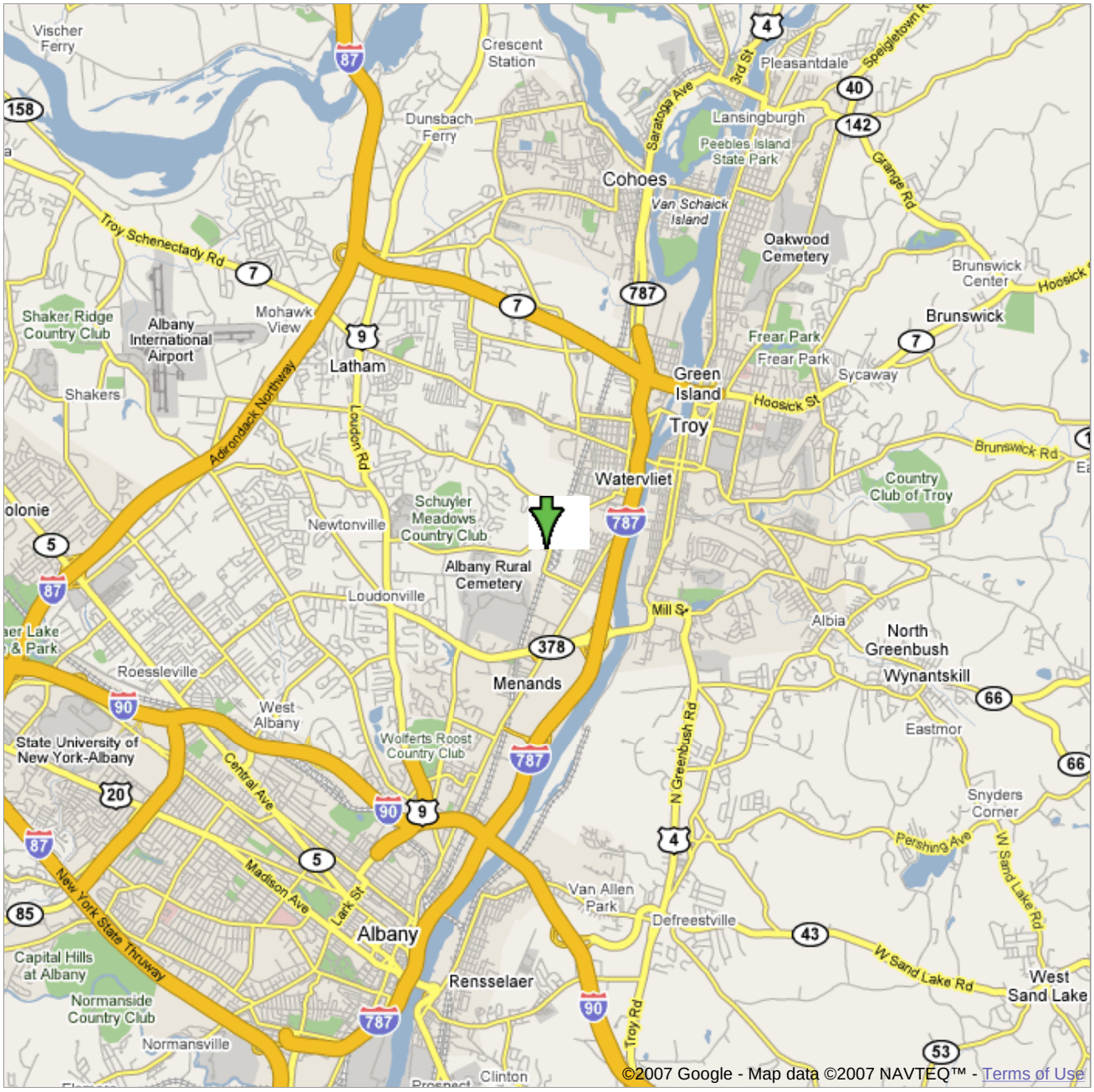

FIGURE 1
Former AltX Site
Watervliet, NY

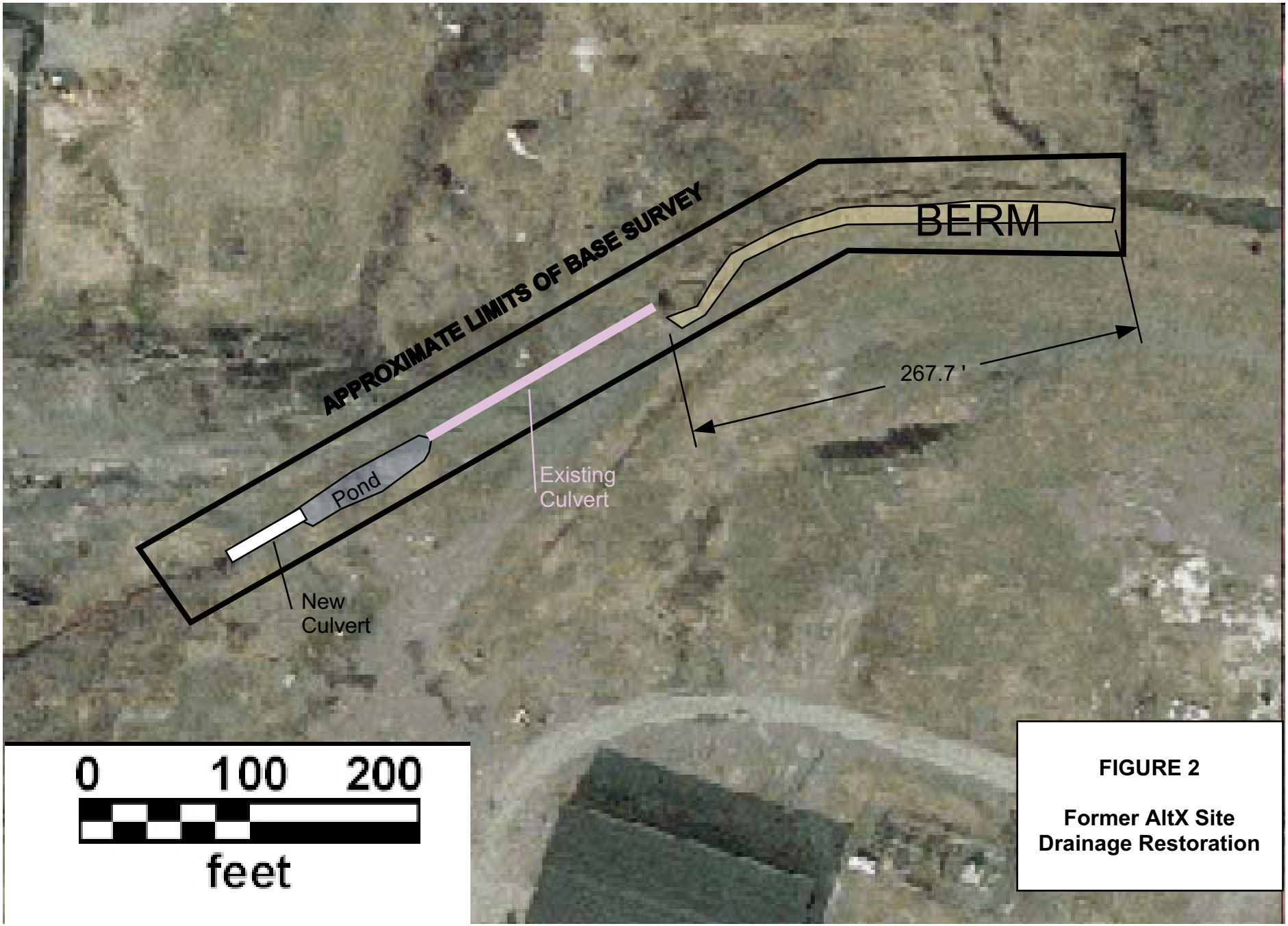

FIGURE 2

Former AltX Site
Drainage Restoration

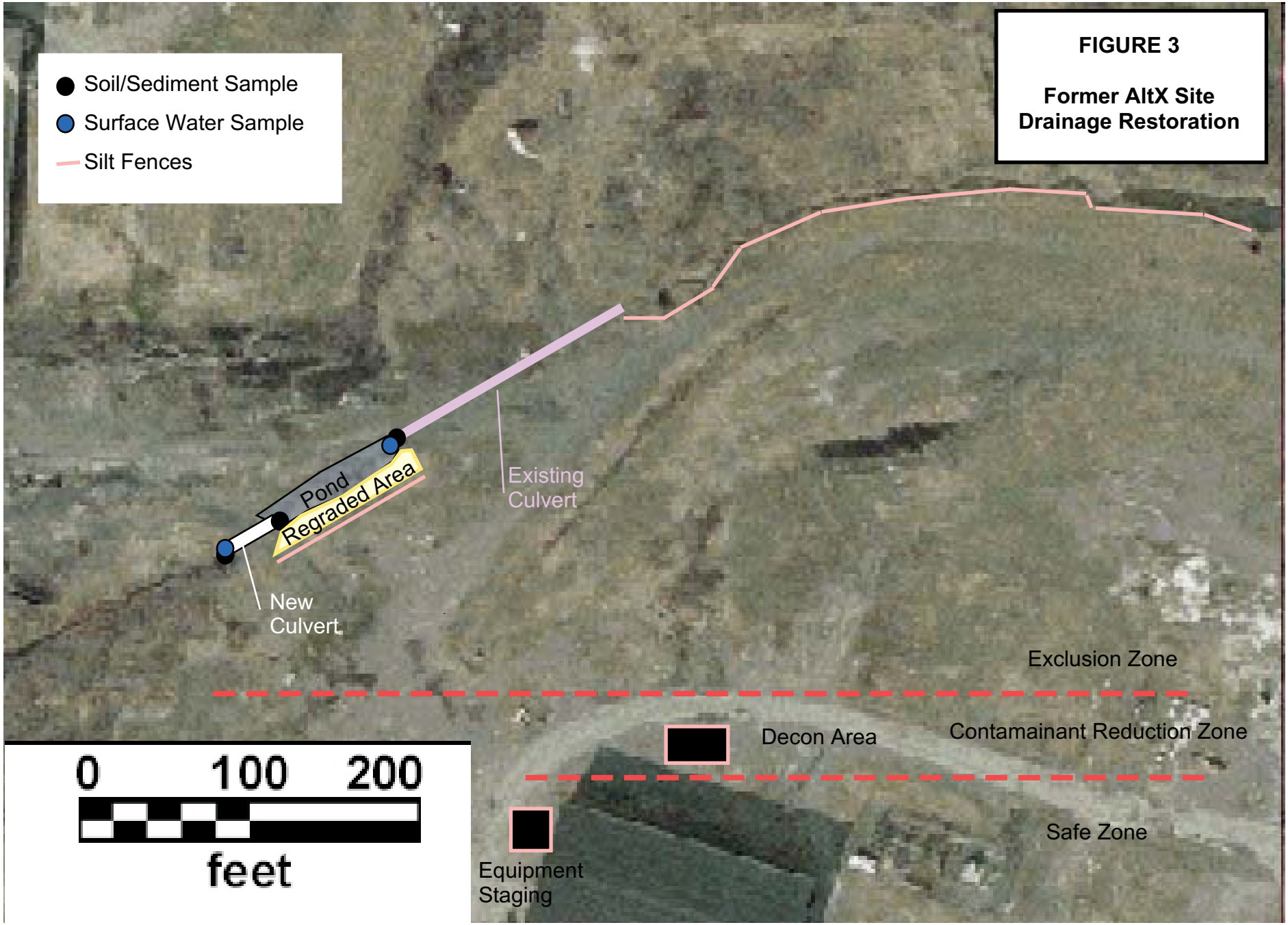
FIGURE 3
Former AltX Site
Drainage Restoration
Soil/Sediment Sample
Surface Water Sample
Silt Fences
Pond
Regraded Area
Existing
Culvert
New
Culvert
Exclusion Zone
Decon Area
Contamainant Reduction Zone
Safe Zone
Equipment
Staging
0
100
200
feet

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B, 12th Floor
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9767 • **FAX:** (518) 402-9773
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

September 7, 2007

Kevin McGrath
Earth Tech, Inc.
40 British American Blvd
Latham, NY 12110

Dear Mr. McGrath:

I have reviewed the letter work plan submitted by Earth Tech to perform site restoration work on the lands leased by Altx, Inc. From RealCo, Inc. The intended purpose of this work is to restore the natural stormwater drainage of the site that was impacted by salvage activities in 2005. The work plan as presented reflects the scope of work previously discussed with Altx, the DEC and Earth Tech. I have just a few questions/comments on the content of the work plan. Once addressed, work may commence as outlined in the work plan.

1. Page 3-1: A reference is made to DEC delineated contaminated soils. Can you clarify whether these are soils that have been previously delineated or if this needs to be accomplished prior to commencing work. Also, is there a figure that can be referenced that indicated the delineation?

2. Page 3-1: Preconstruction samples are referenced. Is the number and quantity the same as those referenced in Figure 3?

3. Section 3.1: It was discussed that cobbles or other materials cabable of providing erosion protection (armoring) would be installed in areas of the bank susceptible to erosion such as where the streams enter the property from the hillside. Is it still planned to include this material?

As I mentioned above, once these comments/questions have been clarified, site work may begin. Please call me at (518) 402-9767 should you have any questions regarding this correspondence.

Sincerely,

Ian Beilby, P.E.

ec: M. Komoroske
I. Beilby/file

McGrath, Kevin

From: Ian Beilby [iabeilby@gw.dec.state.ny.us]
Sent: Wednesday, September 12, 2007 10:43 AM
To: McGrath, Kevin
Subject: RE: 201 Spring Street

Kevin,

The responses are adequate. Can you send me a final hardcopy that incorporates those that are necessary and proceed?

- Thanks.

Ian

Please note the change in phone numbers and zip code below.

Ian Beilby, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7016
tel: (518) 402-9767
fax: (518) 402-9773
e-mail: iabeilby@gw.dec.state.ny.us

>>> "McGrath, Kevin" <Kevin.McGrath@earthtech.com> 9/7/2007 9:14 AM >>>

-----Original Message-----
From: Ian Beilby [mailto:iabeilby@gw.dec.state.ny.us]
Sent: Thursday, September 06, 2007 4:29 PM
To: McGrath, Kevin
Subject: Re: 201 Spring Street

Kevin,

I have looked at the WP and have the following (which will also be sent in hard copy tomorrow)

1. Page 3-1: A reference is made to DEC delineated contaminated soils. Can you clarify whether these are soils that have been previously delineated or if this needs to be accomplished prior to commencing work. Also, is there a figure that can be referenced that indicated the delineation?

We are referring to the sample location map provided by NYSDEC.
Comparison of the construction activities to the sample locations "suggests" that no intrusive work will be done in the vicinity of the locations where impacted soils were identified, with the possible exception of culvert beneath the southern access road.

2. Page 3-1: Preconstruction samples are referenced. Is the number and quantity the same as those referenced in Figure 3?

Yes. The figure depicts the locations only. Some of the sample locations are duplicated between the pre and post construction sampling so that the number of dots on the map are actually less than the numeric number of samples.

3. Section 3.1: It was discussed that cobbles or other materials cabable of providing erosion protection (armoring) would be installed in areas of the bank susceptible to erosion such as where the streams enter the property from the hillside. Is it still planned to include this material?

Yes, Sorry, I inadvertently left this blurb out of the WP : "A #4 stone will be placed along the upgradient flank of the berm on top of the 304.2 sand and gravel to prevent erosion. The erosion blanket will be 6"-1 foot thick running from approximately 10 feet upstream of the point where the fist stream enters the site from the hillside to a point approximately 20 feet downstream from the point where the second stream enters (a total linear distance of approximately 50 feet)."

Note that without a hydraulic analysis, we cannot demonstrate that a #4 is sufficient to dissipate all of the energy if an intense flood wave arrives, but based on site observations of erosion features we believe it will be suffice. Inspection of the berm after a year may reveal that a #6 or larger stone is needed. However, that would be considered an O&M activity

I'm out of the office tomorrow and wil be back Monday if you have any questions or want to discuss the project.

Have a nice weekend. We can speak on Monday.

Please note the change in phone numbers and zip code below.

Ian Beilby, P.E.

Environmental Engineer 2

New York State Department of Environmental Conservation

625 Broadway

Albany, NY 12233-7016

tel: (518) 402-9767

fax: (518) 402-9773

e-mail: iabeilby@gw.dec.state.ny.us

>>> "McGrath, Kevin" <Kevin.McGrath@earthtech.com> 9/4/2007 11:12 AM >>>

Gentleman;

Attached is the Work Plan for the drainage restoration at the Former AltX facility in Watervliet. Earth Tech staff are available to perform the base survey and pre-construction sampling as early as Tuesday of next week if the plan is approved. To accelerate the process and attempt to complete the construction before the heavy rains arrive in mid-late September, please call or e-mail any questions, concerns, or comments and I will address them immediately.

Thanks.

You can call me directly at 518-951-2251 (office) or 527-7165 (cell).

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