**Study Area Characterization Work Plan Addendum Number 1**
**Additional Field Investigation Activities**

| | |
|---|---|
| **Site Name and Location:** | Study Area, Corning, NY |
| **Order on Consent and Administrative Settlement:** | NYSDEC Project ID 851046 |
| **Corning Incorporated Project Coordinator:** | Mike Ford |
| **NYSDEC Project Coordinator:** | Gregory B. MacLean |
| **Date:** | October 24, 2014 |

## Introduction

Weston Solutions, Inc. (WESTON®), on behalf of Corning Incorporated (Corning) proposes additional field investigation activities within the Study Area. The additional activities are based on preliminary, un-validated analytical data collected during field investigation activities performed between July 17, 2014 and August 12, 2014 under the Approved Study Area Characterization Work Plan dated June 2014 (Work Plan) that was Attachment B to the Order on Consent and Administrative Settlement between the New York State Department of Environmental Conservation (NYSDEC) and Corning.

The Study Area is bounded by Pyrex Street on the west, E. Pulteney Street on the north, Post Creek on the east and the Chemung River on the south. The purpose of the additional field investigation activities is to further assess the nature and extent of fill material containing ash, brick, and glass pieces encountered within the Study Area, consistent with the approved Work Plan.

Sampling activities will be performed using the methods and procedures described in Section 4.2 and Appendix D (Standard Operating Procedures) of the approved Work Plan. Samples will be analyzed for the constituents discussed below using the methodologies described in Section 4.2.6 and Appendix C (Quality Assurance Project Plan) of the approved Work Plan.

The following is a description of the additional characterization activities proposed for each subarea, which, upon NYSDEC approval, would be performed as a supplemental scope of work pursuant to Section III.B.1 of the Order on Consent and Administrative Settlement.

## Corning Christian Academy Property

Preliminary, un-validated analytical data indicate an arsenic concentration of 34 milligrams per kilogram (mg/kg) at 2 to 24 inches below ground surface (in bgs) at sample location CCASS005. In order to determine the extent of arsenic in the shallow soils, additional samples will be collected on an approximate 10 foot by 10 foot grid around sample location CCASS005, at the locations shown on Figure 1 attached. The

samples will be collected using a Geoprobe to approximately 2 feet below ground surface (ft bgs) or deeper as needed to reach native material, using methods described in Section 4.2.3 and Appendix D (Standard Operating Procedures) of the approved Work Plan.

Soil samples will be collected of the surface soils (0 to 2 in bgs) and shallow soils (2 in bgs to 2 ft bgs). If the sampling is extended beyond 2 ft bgs to reach native material, one sample will be collected from the zone of observed non-native material below 2 ft bgs, and one sample will be collected of the native material at depth. All samples will be analyzed for the constituents of potential concern (COPCs) as defined in the Work Plan (i.e., lead, cadmium and arsenic). Where ash, brick, or glass pieces are observed in the soils, samples will be analyzed for Target Analyte List (TAL) metals plus mercury, Toxicity Characteristic Leaching Procedure (TCLP) Resource Conservation Recovery Act (RCRA) metals, and Target Compound List (TCL) semi-volatile organic compounds (SVOCs) as listed in Table 4-3 of the Work Plan. Analysis for volatile organic compounds (VOCs) will also be conducted for samples where hand-held photoionization detector (PID) readings are above five (5) parts per million (ppm) above background levels.

## Residential Area at the Eastern End of Corning Boulevard

Based on preliminary, un-validated analytical data for soil samples collected in the Residential Area at the Eastern End of Corning Boulevard, ten (10) additional soil borings are proposed to be installed to assess the nature and extent of fill material encountered within this subarea. The locations of the proposed additional soil borings in the Residential Area at the Eastern End of Corning Boulevard are shown on Figure 2 attached and described below.

- Two (2) soil borings will be installed along the northern parcel boundary of residential property RES194 to determine the horizontal extent of fill material to the north.
- One (1) soil boring will be installed along the western parcel boundary of residential property RES194 to determine the horizontal extent of fill material to the west.
- One (1) soil boring will be installed south of soil boring RES216SB002 to further assess the nature of fill material in the vicinity of this soil boring. The nature of the ash layer at 2 to 4 ft bgs in the vicinity of soil boring RES216SB002 will be further assessed and confirmed by collecting an additional sample from the proposed additional soil boring.
- Three (3) soil borings will be installed along the north side of Corning Boulevard within the City of Corning right-of-way to determine the horizontal extent of fill material to the west.

- Two (2) soil borings will be installed along the eastern parcel boundary of residential property RES203 to determine the horizontal extent of fill material to the east.
- One (1) soil boring will be installed east of the eastern end Corning Boulevard within the City of Corning right-of-way to determine the horizontal extent of fill material to the east.

The soil borings will be advanced via Geoprobe to native material using methods described in Section 4.2.3 and Appendix D (Standard Operating Procedures) of the approved Work Plan.

Samples will be collected from the soil borings using a 2-inch diameter, 4-foot-long, macrocore sampler in accordance with Section 4.3.4.2 of the approved Work Plan. All samples will be analyzed for TAL metals plus mercury, TCLP RCRA metals, and TCL SVOCs as listed in Table 4-3 of the approved Work Plan. Analysis for VOCs will also be conducted for samples where hand-held PID readings are above five (5) ppm above background levels.

**Residential Area – Soil Boring ROWSB001**

Based on preliminary, un-validated analytical data for soil samples collected from soil boring ROWSB001 in the Residential Area four (4) additional soil borings are proposed to be installed in the City of Corning right-of-way to assess the horizontal extent of fill material encountered within the vicinity of this soil boring. The locations of the proposed additional soil borings in the Residential Area are shown on Figure 3 attached and described below.

- Two (2) soil borings will be installed in the median strip along Houghton Circle, one approximately 50 feet northwest and one approximately 50 feet southeast of the location of soil boring ROWSB001.
- Two (2) soil borings will be installed, one on either side of the roadway, within the City of Corning right-of-way, northeast and southwest of the location of soil boring ROWSB001.

The soil borings will be advanced via Geoprobe to approximately 15 ft bgs or deeper as needed to reach native material using methods described in Section 4.2.3 and Appendix D (Standard Operating Procedures) of the approved Work Plan.

If fill material containing ash, brick, and glass pieces are encountered during the soil borings, up to nine (9) additional soil borings will be installed, within the City of Corning right-of-way, at the locations shown on Figure 3 attached to determine the horizontal extent of the fill material.

Samples will be collected from the soil borings using a 2-inch diameter, 4-foot-long, macrocore sampler in accordance with Section 4.3.5.2 of the approved Work Plan. All samples will be analyzed for TAL metals plus mercury, TCLP RCRA metals, and TCL SVOCs as listed in Table 4-3 of the approved Work Plan. Analysis for VOCs will also be conducted for samples where hand-held PID readings are above five (5) ppm above background levels.

## Residential Area – Soil Boring ROWSB008

Preliminary, un-validated analytical data indicate an arsenic concentration of 91 mg/kg at 0 to 2 ft bgs at sample location ROWSB008. In order to determine the extent of arsenic in the shallow soils, additional samples will be collected at three (3) locations at approximately five (5) to ten (10) feet distances from the location of soil boring ROWSB008 at the locations shown on Figure 3 attached. The samples will be collected using a Geoprobe to approximately 2 ft bgs or deeper as needed to reach native material, using methods described in Section 4.2.3 and Appendix D (Standard Operating Procedures) of the approved Work Plan.

Soil samples will be collected of the surface soils (0 to 2 in bgs) and shallow soils (2 in bgs to 2 ft bgs). If the sampling is extended beyond 2 ft bgs to reach native material, one sample will be collected from the zone of observed non-native material below 2 ft bgs, and one sample will be collected of the native material at depth. All samples will be analyzed for the COPCs as defined in the Work Plan (i.e., lead, cadmium and arsenic). Where ash, brick, or glass pieces are observed in the soils, samples will be analyzed for TAL metals plus mercury, TCLP RCRA metals, and TCL SVOCs as listed in Table 4-3 of the Work Plan. Analysis for VOCs will also be conducted for samples where hand-held PID readings are above five (5) ppm above background levels.

## Schedule

The additional characterization activities described herein will be performed following receipt of approval from the NYSDEC of Addendum Number 1 to the approved Work Plan. The anticipated project schedule is provided in Figure 4, attached

John Sontag, Jr.
Senior Project Manager

CCASS001
CCASB001
CCASS002
CCASS003
CCASS004
CCASS005
CCASS007
CCASS006
CCASS008
CCASB002
CCASS009
CCASS016
CCASS015
CCASS011
CCASS013
CCASS012
CCASS019
CCASS014
CCASS017
CCASS018
CCASS010


Legend

- Corning Christian Academy Property
- Parcels
- Grid (100x100 ft)
- School Addition
- Parking Lot
- Verify Existing Cover
- Surface Soil Sampling Locations
- Soil Borings
- Additional Surface/Shallow Soil Sampling Locations

*NOTES:*
*Base Imagery: ESRI, DigitalGlobe, GeoEye*
*Mapping Service, 2011*
*Coordinate System: NAD 1983 State Plane*
*New York Central Feet*
*Datum: NAD83. Units: Feet*

Study Area
Corning NY

N

0 75 150 Feet

0 10 20 30 Meters

Figure 1
Sample Locations
Corning Christian Academy Property

Document Name: Sample_locations_Update_A2.MXD

11/4/2014



Legend

- Residential Area at the Eastern End of Corning Boulevard
- Parcels
- Area of Potential Historic Disturbance
- Surface Soil Sampling Locations
- Soil Borings and Surface Soil Samples
- Additional Soil Borings

*NOTES:*
*Base Imagery: ESRI, DigitalGlobe, GeoEye Mapping Service, 2011*
*Coordinate System: NAD 1983 State Plane New York Central Feet*
*Datum: NAD83. Units: Feet*

N

0 75 150 Feet

0 10 20 30 Meters

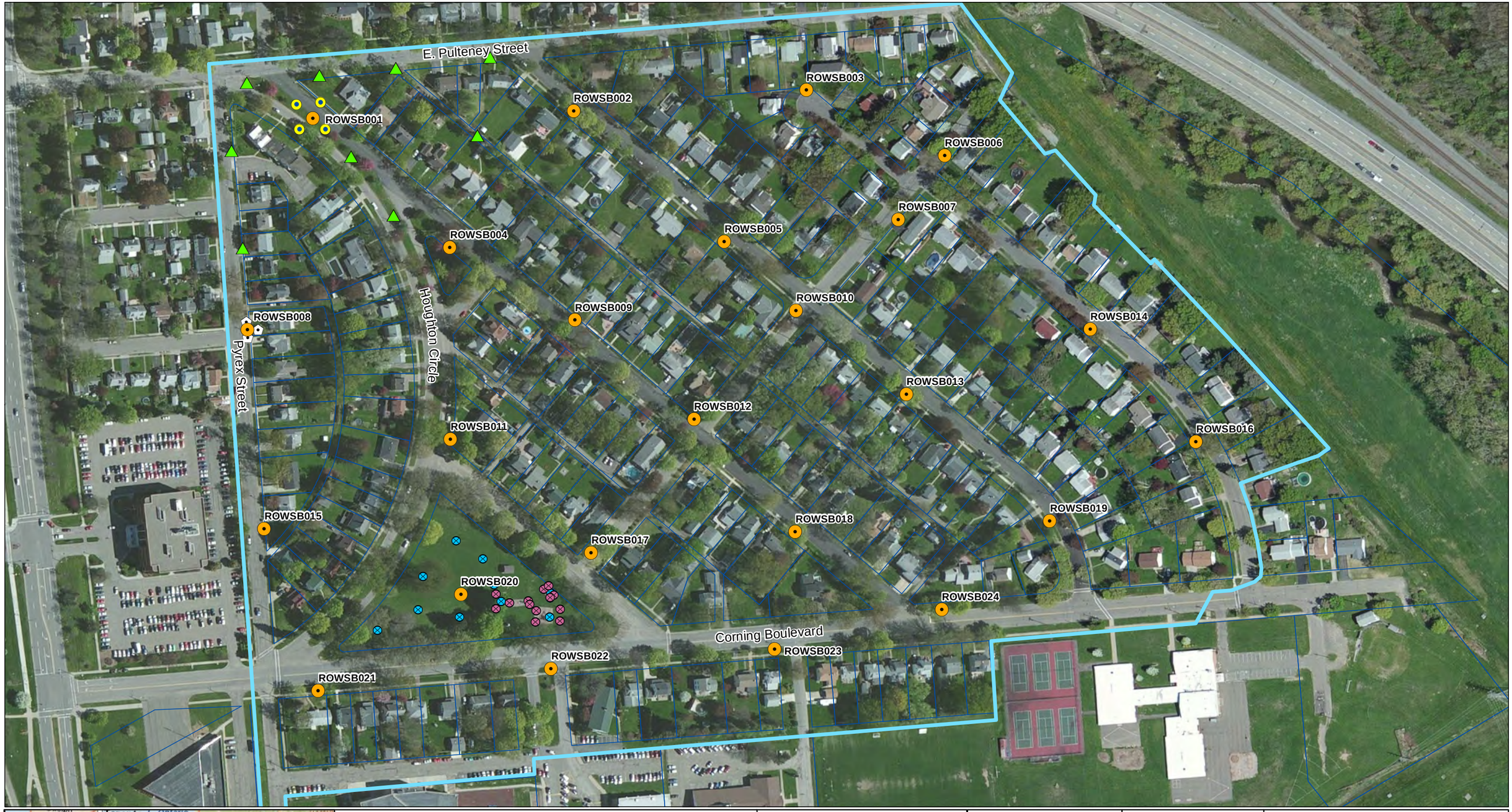
Study Area
Corning NY

WESTON SOLUTIONS

Figure 2
Sample Locations
Residential Area at the
Eastern End of Corning Boulevard

Document Name: Sample_locations_Update_A5.MXD

11/4/2014





Legend

- Residential Area
- Parcels
- Verify Existing Cover
- Surface Soil Sampling Locations
- Soil Borings
- Additional Surface/Shallow Soil Sampling Locations
- Additional Soil Borings
- Potential Additional Soil Borings

*NOTES:*
*Base Imagery: ESRI, DigitalGlobe, GeoEye Mapping Service, 2011*
*Coordinate System: NAD 1983 State Plane New York Central Feet*
*Datum: NAD83. Units: Feet*

Study Area
Corning NY

N

0 200 400 Feet

0 40 80 120 Meters

Figure 3
Sample Locations
Residential Area

Document Name: Sample_locations_Update_A6.MXD

11/4/2014

## CHARACTERIZATION WORK PLAN ADDENDUM No. 1 SCHEDULE (Updated 10/17/2014)[1]

| TASK | EVENT | WEEKS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Corning Christian Academy | Obtain Written Access Consent & Clearances | | | | | | | | | | | | | | | | | | | | |
| | Soil Boring & Surface Soil Sampling | | | | | | | | | | | | | | | | | | | | |
| | Sample Analysis & Validation | | | | | | | | | | | | | | | | | | | | |
| | Data Report for Corning Christian Academy property[2] | | | | | | | | | | | | | | | | | | | | |
| Residential Area at the East End of Corning Blvd | Obtain Written Access Consent & Clearances | | | | | | | | | | | | | | | | | | | | |
| | Soil Boring & Surface Soil Sampling | | | | | | | | | | | | | | | | | | | | |
| | Sample Analysis & Validation | | | | | | | | | | | | | | | | | | | | |
| | Data reports to Property Owners[2] | | | | | | | | | | | | | | | | | | | | |
| Residential Area | Obtain Written Access Consent (City of Corning) & Clearances | | | | | | | | | | | | | | | | | | | | |
| | Soil Boring & Surface Soil Sampling | | | | | | | | | | | | | | | | | | | | |
| | ROW Soil Boring Sample Analysis & Validation | | | | | | | | | | | | | | | | | | | | |
| | Data Report to City of Corning[2] | | | | | | | | | | | | | | | | | | | | |

**Notes:**

**1 -Schedule is predicated upon obtaining written access consent from property owners**

**2 - Assumed 2 weeks for NYSDEC review of submittals.**

**Figure 4**
**Schedule**

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation, Region 8**
6274 East Avon-Lima Road, Avon, New York 14414-9519
**Phone: (**585) 226-5353 • **Fax: (**585) 226-8139
**Website:** www.dec.ny.gov

Joe Martens
Commissioner

October 27, 2014

Michael Ford, P.E.
Corning Incorporated
HP-ME-03-83
Corning, New York 14831

**RE: Study Area Characterization Work Plan Addendum Number 1 - Additional Field Investigation Activities; and Groundwater Wells proposal**
**Study Area, Project No. 851046**
**Corning (C), Steuben (Co)**

Dear Mr. Ford:

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has reviewed the *Study Area Characterization Work Plan Addendum Number 1 - Additional Field Investigation Activities* and the *Groundwater Wells* proposal, both of which are dated October 24, 2014. These documents are hereby approved with the following stipulations:

1.) While we understand there are no plans during this phase of work for additional soil borings in the Study Area beyond those already proposed, additional soil borings may be required to characterize the extent of fill containing ash, brick, and glass as a subsequent phase of work should this fill be identified in perimeter soil borings that have been proposed. To the extent that access is available to install any additional borings for this purpose, should the need become apparent based on field observations, such work should be considered during this phase.

2.) Based on the presence of a substantial amount of glass noted from approximately 18 to 24 inches below grade in a shallow soil boring completed by NYSDEC personnel at the rear of the residential property at 45 Houghton Circle, additional characterization in this area is required. Please provide an additional Addendum to the Study Area Characterization Work Plan for this purpose by November 14, 2014. In particular, a minimum of four additional soil borings are required in adjacent areas of the right-of-way between properties on Pyrex Street and Houghton Circle, and in adjacent areas of the right-of-way along the western side of Houghton Circle. Depending on the findings of this work, in concert with the findings of the currently proposed

work in the northwest portion of the residential area, additional characterization activities in rights-of-way and/or apparently affected residential property may be required.

3.) One or more groundwater monitoring wells will be needed in the northwest portion of Residential Area to evaluate the impact of the fill identified at soil boring ROWSB001. We understand that this work will be proposed as a subsequent phase of work after further characterization of the nature and extent of the fill material in this area is undertaken during the upcoming work.

4.) Corning Incorporated is to coordinate with the Corning-Painted Post School district regarding sampling of the irrigation well on the High School property. The irrigation well should be sampled during the same time frame as the groundwater monitoring wells to be installed on the school property. The construction of the well should be understood and reported. The irrigation well is to be sampled for the expanded list of analytical parameters (i.e., total TAL metals plus mercury, and TCL SVOCs and VOCs).

5.) These documents contain references to "preliminary un-validated analytical results" for soil samples collected in various portions of the Study Area. The validation of all applicable data is now complete and the associated Data Usability Summary Reports have been received and accepted by NYSDEC.

If you should have any questions regarding this letter, please contact me at (585) 226-5356 or greg.maclean@dec.ny.gov.

Sincerely,

Gregory B. MacLean

Gregory B. MacLean, P.E.
Project Manager
Division of Environmental Remediation

ec: R. Schick, NYSDEC
M. Ryan, NYSDEC
B. Conlon, NYSDEC
M. Cruden, NYSDEC
B. Putzig, NYSDEC
M. Doroski, NYSDOH
J. Deming, NYSDOH
Karen Douglas, Corning Incorporated
Jean McCreary, Nixon Peabody
John Sontag, Weston Solutions

CORNING

October 28, 2014

Gregory B. MacLean, P.E.
Project Manager, Division of Environmental Remediation
New York State Department of Environmental Conservation
Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Re: Study Area Characterization Work Plan Addendum #1 - Additional Field Investigation Activities And Groundwater Wells
Study Area, Project No. 851046
Corning (C), Steuben (Co)

Dear Mr. MacLean:

As you are aware, Corning Incorporated ("Corning") has been diligently implementing the Department of Environmental Conservation ("DEC" or "Department")-approved Study Area Characterization Work Plan that was attached as Exhibit B to the Order on Consent and Administrative Settlement that was executed by Corning on June 23, 2014, and by DEC on June 27, 2014. A substantial amount of work has been completed and Corning is pleased to present the results of this work to the community at a public meeting on October 30, 2014. Further, Weston Solutions, Inc. will shortly embark on Phase II of this work, generally consisting of groundwater evaluation and of a second opportunity for homeowners within the Study Area who have not previously submitted access agreements to do so in order to have their residential properties to be sampled.

Based on the initial results and after discussion with DEC, Corning submitted on October 24 to DEC an Addendum 1 to the Study Area Characterization Work Plan ("Addendum 1") proposing certain additional characterization activities within the Study Area, and a Groundwater Wells proposal as provided for under the original Department-approved Study Area Characterization Work Plan. DEC and Corning discussed Addendum 1 and the scope of groundwater assessment on October 20; DEC sent a letter providing comments on October 21; and Corning submitted a revised Addendum 1 and the Groundwater Wells plan on October 24. Corning received late yesterday (October 27, 2014) afternoon DEC's letter about the Addendum and Groundwater Plan. Corning has responded, via separate letter today, to DEC's comments on the Short Term Response Action Plan.

In its letter of October 27, 2014, DEC conditionally approved the implementation of the Addendum 1 and Groundwater Plan work subject to five stipulations. Corning responds as follows:

The second stipulation is problematic because it is based on information that Corning has not had the opportunity to review, i.e., the results of sampling reportedly conducted by the Department. On several occasions Corning has requested to both you and the Department's counsel, Ben Conlon, a copy of the analytical results for all sampling conducted by the Department. To date

these analytical results have not been provided to us. This information is needed prior to proposing additional characterization in this area, if needed. Corning hereby renews its request for a written copy of all analytical results collected within the Study Area by or on behalf of the Department, including boring logs, sampling results, sample collection methods and photographs. Corning requests an extension of the November 14, 2014 proposed timeline for at least three weeks from the date of its receipt of the requested information in order to enable the data to be reviewed and an appropriate work plan to be developed.

The remaining stipulations are acceptable to Corning to the extent that they relate to work within the boundaries of the Study Area as defined in the above-referenced Order on Consent, and subject to Corning receiving permission for access to conduct such work. The Order on Consent signed by Corning and the Department is limited to characterization activities within the Study Area, and until that characterization is completed, the Department's review and any Department-suggested modification to the proposals for additional characterization and groundwater assessment must remain within the limits of the Study Area. Further, the Department's comments must be limited to those necessary "in order to achieve the objectives of the Work Plan as set forth in the Order" pursuant to Appendix A.III.B.2.i of the Order, which defines its scope in Sec. II.1.

Corning strongly urges the Department, subject to the clarifications outlined above, to immediately approve Corning's proposed Addendum 1 and Groundwater Wells plan for the Study Area dated October 24, 2014, so that this work may be jointly presented to the property owners at the public meeting on October 30. We believe being able to conduct this work in the next few weeks is very much in the Department's interest, the interest of the property owners, and the interest of the community at large.

Sincerely,

Michael Ford, P.E.
Sr. Env. Project Engineer

cc – John Sontag - Weston Solutions.

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation, Region 8**
6274 East Avon-Lima Road, Avon, New York 14414-9519
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Joe Martens
Commissioner

October 29, 2014

Michael Ford, P.E.
Corning Incorporated
HP-ME-03-83
Corning, New York 14831

**RE: Study Area Characterization Work Plan Addendum Number 1 - Additional Field Investigation Activities; and Groundwater Wells proposal**
**Study Area, Project No. 851046**
**Corning (C), Steuben (Co)**

Dear Mr. Ford:

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has reviewed the *Study Area Characterization Work Plan Addendum Number 1 - Additional Field Investigation Activities* and the *Groundwater Wells* proposal, both of which are dated October 24, 2014. As noted in the NYSDEC letter dated October 27, 2014, these documents are approved. In response to your letter dated October 28, 2014, Stipulation No. 2 provided in the NYSDEC's October 27, 2014 letter is revised as follows:

- Based on the presence of a substantial amount of glass noted from approximately 18 to 24 inches below grade in a shallow soil boring completed by NYSDEC personnel at the rear of the residential property at 45 Houghton Circle, additional characterization in this area is required. Please provide an additional Addendum to the Study Area Characterization Work Plan for this purpose within three weeks following receipt of the preliminary un-validated data for two soil samples collected by NYSDEC at and adjacent to the 45 Houghton Circle property. Data for additional samples collected by NYSDEC in other portions of the Study Area will follow separately. In particular, a minimum of four additional soil borings are required in adjacent areas of the right-of-way between properties on Pyrex Street and Houghton Circle, and in adjacent areas of the right-of-way along the western side of Houghton Circle. Depending on the findings of this work, in concert with the findings of the currently proposed work in the northwest portion of the residential area, additional characterization activities in rights-of-way and/or apparently affected residential property may be required.

If you should have any questions regarding this letter, please contact me at (585) 226-5356 or greg.maclean@dec.ny.gov.

Sincerely,

Gregory B. MacLean

Gregory B. MacLean, P.E.
Project Manager
Division of Environmental Remediation

ec: R. Schick, NYSDEC
M. Ryan, NYSDEC
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M. Doroski, NYSDOH
J. Deming, NYSDOH
Karen Douglas, Corning Incorporated
Jean McCreary, Nixon Peabody
John Sontag, Weston Solutions

CORNING

October 29, 2014

Gregory B. MacLean, P.E.
Project Manager, Division of Environmental Remediation
New York State Department of Environmental Conservation
Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Re: Study Area Characterization Work Plan Addendum Number 1 – Additional Field Activities and Groundwater Wells Proposal
Study Area, Project No. 851046
Corning (C), Steuben (Co)

Dear Mr. MacLean:

Thank you for considering Corning Incorporated's comment letter of October 28, 2014. This confirms that Corning Incorporated accepts the revised stipulations set forth in your letter dated October 29, 2014 as additions to the final approved Work Plan.

Sincerely,

Michael Ford, P.E.
Sr. Env. Project Engineer

Cc – John Sontag – Weston Solutions