EXPLANATION OF SIGNIFICANT DIFFERENCES

GEDDES BROOK/NINEMILE CREEK SITE

Operable Unit
of the Onondaga Lake Bottom Subsite
Onondaga Lake Superfund Site

Town of Geddes / Onondaga County / Site No. 734030 Operable Unit 1 / September 2013

1.0 INTRODUCTION

If, after the selection of a final remedial action plan, a change is made to a component of the action that differs in any significant respect from the final plan, Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, (CERCLA) and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) require the publishing of an Explanation of Significant Differences (ESD) which sets forth the reasons such changes were made.

In April 2009, the New York State Department of Environmental Conservation (NYSDEC) and U.S. Environmental Protection Agency (USEPA) issued a Record of Decision (ROD) that documented the selection of a remedy for a portion of the Geddes Brook/Ninemile Creek site which included the channel sediments, surface water and floodplain soils/sediments of lower Geddes Brook downstream from the discharge point of the West Flume and lower Ninemile Creek from approximately 600 feet (ft) upstream of the discharge point of Geddes Brook to just downstream of the I-690 overpass near the Wastebeds 1 through 8 site (see Figure 1).

The remedy for a 240-ft long stretch of a portion of the Ninemile Creek channel and adjoining banks in the vicinity of the State Fair Boulevard bridge, CSX railroad bridge, I-695 overpass abutment, and Onondaga County sewage force main includes the removal of channel sediment to allow for the installation of an isolation cap and habitat layer, and the removal of soil overlying structural stone on the adjoining banks and backfill/restoration with approximately one ft of vegetated habitat layer (see Figure 2). As part of the remedial design, an evaluation of construction implementability and safety was conducted. The evaluation considered as-built information on the bridges and utilities, supplemental sediment characterization data, and other information collected during the design phase. Based on this evaluation, it was determined that sediment excavation in this area posed physical hazards (worker safety and structural stability) because of its proximity to utility conduits and bridge supports as well as low clearances under bridges. In addition, supplemental sediment characterization data gathered during the remedial design indicate that the concentrations of contaminants in channel sediments and stream bank soils in this area are generally below sediment and soil criteria as well as the remedial goals established for the site as described in Section 4.1. Because of the noted physical hazards in

combination with the low levels of contaminants in this area, the remedy in this area will be modified as follows--there will be no channel removal or backfilling. Material will only be removed from a portion of the bank and floodplain that is accessible. The excavated areas will be backfilled and revegetated as discussed in the remedial design.

This ESD presents the modification to the remedy and its basis.

This ESD will become part of the Administrative Record related to the above-noted ROD for this site. The information here is a summary of what can be found in greater detail in documents that have been placed in the following repositories:

Onondaga County Public Library
Syracuse Branch at the Galleries
447 South Salina Street
Syracuse, NY 13202
Telephone: 315-435-1900

NYSDEC, Syracuse Office
615 Erie Boulevard West
Syracuse, NY 13204
Telephone: 315-426-7400

Atlantic States Legal Foundation
658 West Onondaga Street
Syracuse, NY 13204
Telephone: 315-475-1170
Please call for an appointment.

Solvay Public Library
615 Woods Road
Solvay, NY 13209
Telephone: 315-468-2441

NYSDEC, Central Office
625 Broadway
Albany, NY 12233
Telephone: 518-402-9676

Information related to the site can also be viewed electronically on the NYSDEC web site at http://www.dec.ny.gov/chemical/37558.html.

2.0 SITE DESCRIPTION AND ORIGINAL REMEDY

Ninemile Creek and its tributary, Geddes Brook, collectively referred to as the Geddes Brook/Ninemile Creek site, are located northwest of the City of Syracuse in the Town of Geddes, Onondaga County, New York. Ninemile Creek, a primary tributary of Onondaga Lake, originates at Otisco Lake, approximately 16 miles southwest of Onondaga Lake. Geddes Brook originates in the town of Camillus and flows approximately 3.3 miles to its confluence with Ninemile Creek. As shown on Figure 1, Ninemile Creek has been organized into two operable units (OUs) and three reaches – Reach AB, Reach BC, and Reach CD. Reaches CD and BC comprise OU-1; Reach AB comprises OU-2. The area subject to this ESD is in Reach BC (OU-1).

The Geddes Brook/Ninemile Creek site is an operable unit of the Onondaga Lake Bottom Subsite of the Onondaga Lake National Priorities List site. The selected remedy for OU-1 of Ninemile Creek is outlined in a ROD issued on April 29, 2009.

The following is a summary of the remedy for the Reach BC channel and banks included in the OU-1 ROD:

- Remove an average of three ft of contaminated sediment from the Reach BC channel, where required, to allow for the installation of an isolation cap and suitable habitat layer. Place a chemical isolation layer (part of the isolation cap) and a habitat layer (minimum two ft thick) within the entire Reach BC channel area. Sufficient removals would be conducted prior to installation of the isolation cap to allow for passage of flood flows under existing infrastructure and ensure no adverse increases in water elevations and extent of flooding in accordance with applicable requirements, and to provide sufficient water depth for fish passage and canoe access.
- Remove all floodplain soil/sediment overlying structural stone between the Ninemile Creek waterline and break in elevation at the top of the bank along the entire length of Reach BC. Restore removal area with approximately one ft of vegetated habitat layer, on top of the structural stone, along the entire length of Reach BC, from the water line to the top of the bank.

3.0 CURRENT STATUS

Construction of the remedy by Honeywell at the Geddes Brook/Ninemile Creek Site was initiated in 2011 and is substantially complete for Geddes Brook and Ninemile Creek Reach CD. Construction on the upper portion of Reach BC began during the Spring of 2013.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

4.1 New Information

The 240-ft long stretch of the Ninemile Creek channel noted above includes portions of the creek under the State Fair Boulevard and CSX bridges. Some of the soils and sediments in this area are not accessible because of the proximity of the CSX railroad tracks and associated embankment, the State Fair Boulevard bridge over Ninemile Creek and associated embankments, and a bridge abutment for the on-ramp to I-695 South. The State Fair Boulevard and CSX bridges are within approximately seven ft of the water surface at mean elevation. As a result, compact excavation equipment, as well as conventional excavation equipment, would have insufficient clearance beneath these bridges. Dredging/excavation of channel sediment and placement of an isolation cap/habitat layer in this area would create an undue risk of damaging these structures and would create a worker safety hazard. Also, excavation of the river bank sediments and soils which overlie structural stone in close proximity to these structures could create a structural stability hazard. In addition, supplemental sediment characterization data gathered during the remedial design indicate that the concentrations of mercury and other Chemical Parameters of Interest (CPOIs) found in channel sediments and stream bank materials in this area are relatively low in comparison to other areas of the site.

A total of 43 sediment and soil samples (not including duplicates) from within the 240-ft long stretch were collected at depths up to ten ft prior to and during the remedial design. The analytical results for the affected area (see Figure 3) indicate that the mercury concentrations in all channel sediment samples did not exceed the NYSDEC Severe Effect Level (SEL) of 1.3 milligrams per kilogram

(mg/kg) and seven of the 18 sediment samples exceeded the Low Effect Level (LEL) of 0.15 mg/kg. In addition, the concentrations of other CPOIs in channel sediment within the 240-ft section were below the NYSDEC sediment screening criteria values presented in the ROD. Floodplain soil concentrations for mercury within the 240-ft section were generally low except for three locations on the west bank between the State Fair Boulevard and CSX bridges where mercury was detected up to 7 mg/kg. These areas will be remediated under the modified remedy. All contaminants other than mercury in floodplain soil were below their respective targets except for two sample locations on the east bank near the State Fair Boulevard and CSX bridges where the SEL for lead of 110 mg/kg was exceeded. These anomalous detections of lead may be because of anthropogenic sources (*e.g.,* the historic use of leaded gasoline) that are unrelated to former Honeywell operations.

4.2 Comparison of Changes with Original Remedy

As presented in the OU-1 ROD, the original remedy for this 240-ft long stretch of the channel and adjoining banks called for the removal of channel sediment to allow for the installation of an isolation cap and two-ft habitat layer. The original remedy for this area also included the removal of soil overlying structural stone on the adjoining banks followed by restoration with approximately one ft of vegetated habitat layer.

The modified remedy for this limited area consists of:

- No channel sediment removals and associated backfills in the 240 ft stretch of Reach BC.
- Clearing the banks along the entire 240-ft reach of non native vegetation since this can be done with conventional means without introducing extraordinary structural or worker hazards.
- Implementing area-specific soil/sediment removal for banks/floodplains (see Figure 4), consisting of:
    - No removal of floodplain soil/sediment on the east bank, between the State Fair Boulevard and CSX bridges because of access limitations discussed above and the fact that CPOI concentrations are relatively low, as discussed in the previous section.
    - For the west and east bank floodplain soil/sediment, downstream of the CSX bridge, and on the west bank between the State Fair Boulevard and CSX bridges, soil/sediment overlying structural stone will be removed in three areas of elevated mercury concentrations, in a manner consistent with other Reach BC areas with structural stone. This excavation will take into consideration existing infrastructure (*e.g.,* bridge abutment associated with the on-ramp to I-695 south, sewer lines), such that materials within approximately five to ten ft of these structures will not be disturbed in order to avoid potential adverse structural impacts. Areas where soil removal will occur above structural stone will be restored, in general, through placing joint plantings in between adjacent stones. However, there may be areas with very gentle slopes, where up to 12 inches of topsoil (as determined in consultation with NYSDEC) will be placed over the structural stone prior to the installation of the plants.
- Planting the banks along the entire 240-ft reach with native vegetation consistent with the site restoration plan.

Channel sediment and floodplain soil/sediment within OU-1 but outside of the limited 240 ft area discussed above will be addressed in accordance with the OU-1 ROD. Construction of the remedy for

the upper part of Reach BC, which is not addressed by this ESD, began during May of 2013. The design associated with the modification portion of the remedy will be approved following the issuance of this ESD. Construction of the modified remedy will begin shortly thereafter.

A summary of the concentrations of mercury and *o*ther CPOIs from sampling locations (at all depths) in the channel and floodplain (as shown on Figure 3) within this 240-ft stretch that would not be removed is provided below.

Chemical	Units	Remedial Goals	Channel Sediment		Floodplain Soil	
			Average	Maximum	Average	Maximum
Mercury	mg/kg	0.15 - 1.3	0.3	1.3	1.0	1.7
Benzo(a)pyrene	ug/kg*	1,300	31	78	344	520
Hexachlorobenzene	ug/kg	117,000	105	310	99	285
PCBs	ug/kg	405	29	88	29	78
Arsenic	mg/kg	33	5.2	8.9	4.3	5.9
Lead	mg/kg	110	18	45	176	466
Total PAHs	ug/kg	35,000	290	896	3,721	5,725
Phenol	ug/kg	530	159	325	253	280

*micrograms per kilogram

It should be noted that data from three stations on the west bank are in an area that will be removed between the State Fair Boulevard and CSX bridges (sample locations FN-6-1, FN-6-2, and NMFP-T-09-5R) and therefore are not included in the above summary. For non-detectable concentrations, average values in the table above are based on the detection limits.

For channel sediments in this 240-ft stretch, average and maximum concentrations for the CPOIs other than mercury are less than the remedial goals noted in the ROD. For floodplain soils in this 240-ft stretch not planned for removal, average and maximum concentrations for the CPOIs other than mercury and lead, are less than the remedial goals noted in the ROD. For lead, as discussed above in Section 4.1, the exceedances are likely because of anthropogenic sources unrelated to former Honeywell operations.

Although some locations not planned for removal in this 240-ft stretch have mercury concentrations that exceed the lowest remedial goal identified in the ROD (0.15 mg/kg), the remedy, as modified, will continue to be protective as discussed below.

The selected remedy, as modified, will continue to attain the 0.8 mg/kg site-specific bioaccumulation-based sediment quality value (BSQV) for mercury in channel sediments for protection of wildlife consumption of fish as well as the 0.6 mg/kg site-specific BSQV for mercury in floodplain soils for protection of wildlife consumption of terrestrial invertebrates. As discussed in the ROD, the bioaccumulation-based targets are applied on an area-weighted basis (i.e., by reach rather than point-to-point) since animals, such as fish, that bioaccumulate mercury and other bioaccumulative contaminants are not limited to a specific location of the site. Although the BSQVs are applied over a larger area (*e.g.*, all of Reach BC) based on a surface-weighted average concentration (SWAC), the average concentration of mercury in the channel surface sediments not being remediated in this 240-ft stretch (0.6 mg/kg) is less than the BSQV of 0.8 mg/kg for protection of wildlife consumption of

fish. Incorporating the placement of clean material throughout the remainder of the Reach BC channel (approximately 2,200 ft) with mercury concentrations in backfill less than 0.15 mg/kg (as discussed in the ROD), the post-remediation SWAC in channel sediments of Reach BC will be considerably less than 0.6 mg/kg. For the floodplain areas, the post-remediation SWAC in Reach BC, inclusive of the area not being remediated in portions of this 240-ft stretch, will also be considerably less than the BSQV of 0.6 mg/kg in floodplain soils for protection of wildlife consumption of terrestrial invertebrates.

The selected remedy, as modified, is also anticipated to achieve the fish tissue mercury target concentrations presented in the ROD, ranging from 0.1 mg/kg, which is for protection of ecological receptors, to 0.3 mg/kg, which is based on EPA's methylmercury National Recommended Water Quality criterion for the protection of human health from elevated risks because of consumption of organisms.

Thus, the selected remedy, as modified herein, remains protective of human health and the environment.

5.0 FIVE-YEAR REVIEWS

This ESD modifies a remedy that leaves hazardous substances, pollutants or contaminants above levels that allow for unlimited use and unrestricted exposure. Pursuant to CERCLA Section 121 (c), NYSDEC and USEPA shall review such remedies no less often than every five years after the initiation of remedial action to assure that human health and the environment are protected.

6.0 AFFIRMATION OF STATUTORY DETERMINATIONS

NYSDEC and USEPA believe that the selected remedy, as modified, remains protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective. In addition, the remedy utilizes permanent solutions and alternate treatment technologies to the maximum extent practicable for this site.

The ROD, as modified by this ESD, is protective of human health and environment, and meets the goals originally included in the April 2009 ROD. The New York State Department of Health concurs with this modification.

7.0 PUBLIC PARTICIPATION ACTIVITIES

NYSDEC and USEPA are making this ESD and supporting information available to the public in the Administrative Record for this site. Should there be any questions regarding this ESD, please contact:

Timothy Larson, P.E., Project Manager
New York State Department of
Environmental Conservation
625 Broadway, Albany, NY 12233-7013
Phone: (518) 402-9676
E-Mail: tjlarson@gw.dec.state.ny.us

Project-related health questions should be directed to:

Mark S. Sergott, Project Manager
New York State Department of Health
Empire State Plaza Corning Tower,
Room 1787
Albany, NY 12237
Phone: (518) 402-7860
E-Mail: BEEI@health.state.ny.us

With the publication of this ESD, the public participation requirements set out in §300.435(c)(2)(i) of the NCP have been met.

9/11/2013 Date	DAH for Timothy J. Larson, P.E., Project Manager Section B, Remedial Bureau D
9/11/2013 Date	Donald J. Hesler Donald J. Hesler, Section Chief/RHWRE Section B, Remedial Bureau D
9/11/13 Date	William L. Daigle, P.E., Director Remedial Bureau D
9/12/13 Date	Robert W. Schick, P.E., Director Division of Environmental Remediation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: SEP - 4 2013

SUBJECT: Explanation of Significant Differences for the Geddes Brook/Ninemile Creek Site, Onondaga Lake Superfund Site

FROM: Doug Garbarini, Chief
New York Remediation Branch

TO: Walter E. Mugdan, Director
Emergency and Remedial Response Division

In April 2009, the New York State Department of Environmental Conservation (NYSDEC) and U.S. Environmental Protection Agency (EPA) issued a Record of Decision (ROD) that selected a remedy for channel sediments, surface water and floodplain soils/sediments for part of the Geddes Brook/Ninemile Creek site, an operable unit of the Lake Bottom subsite of the Onondaga Lake site. A portion of the area to be addressed under the remedy includes a 240-foot (ft) long stretch of the Ninemile Creek channel and adjoining banks in the vicinity of railroad and roadway bridges, an overpass abutment for I-695, and an Onondaga County sewage force main. This portion represents less than 1% of the remedial area of the Geddes Brook/Ninemile Creek site.

Under the ROD, the remedy for the portion noted above includes the removal of channel sediment to allow for the installation of an isolation cap and habitat layer and the removal of soil overlying structural stone on the adjoining banks and backfill/restoration with approximately one ft of vegetated habitat layer.

As part of the remedial design, an evaluation of construction implementability and safety was conducted. The evaluation considered as-built information on the bridges and utilities, supplemental sediment characterization data, and other information collected during the design phase. Based on this evaluation, it was determined that sediment excavation in this area posed hazards (worker safety and structural stability) due to its proximity to the bridge supports and low clearances under bridges and utility conduits. In addition, supplemental sediment characterization data gathered during the remedial design indicates that the concentrations of contaminants in channel sediments and stream bank soils in this area are relatively low. Because of the noted hazards in combination with the low levels of contaminants in this area, the remedy in this area needs to be modified so that there will be no channel removal or backfilling. Material would only be removed from a portion of the bank and floodplain that is accessible. The excavated areas will be backfilled and revegetated in a manner consistent with other areas being remediated on the site while taking into consideration existing infrastructure so as to avoid potential structural impacts and hazards to workers.

The attached Explanation of Significant Differences (ESD) serves to document the above-noted change to the remedy. The ESD will be co-issued by NYSDEC and EPA.

Please indicate your approval of the ESD by signing below.

If you have any questions related to the ESD, please call me at extension 4288.

Attachment

Approved: _____ 9/4/2013

Walter E. Mugdan, Director
Emergency and Remedial Response Division

Date

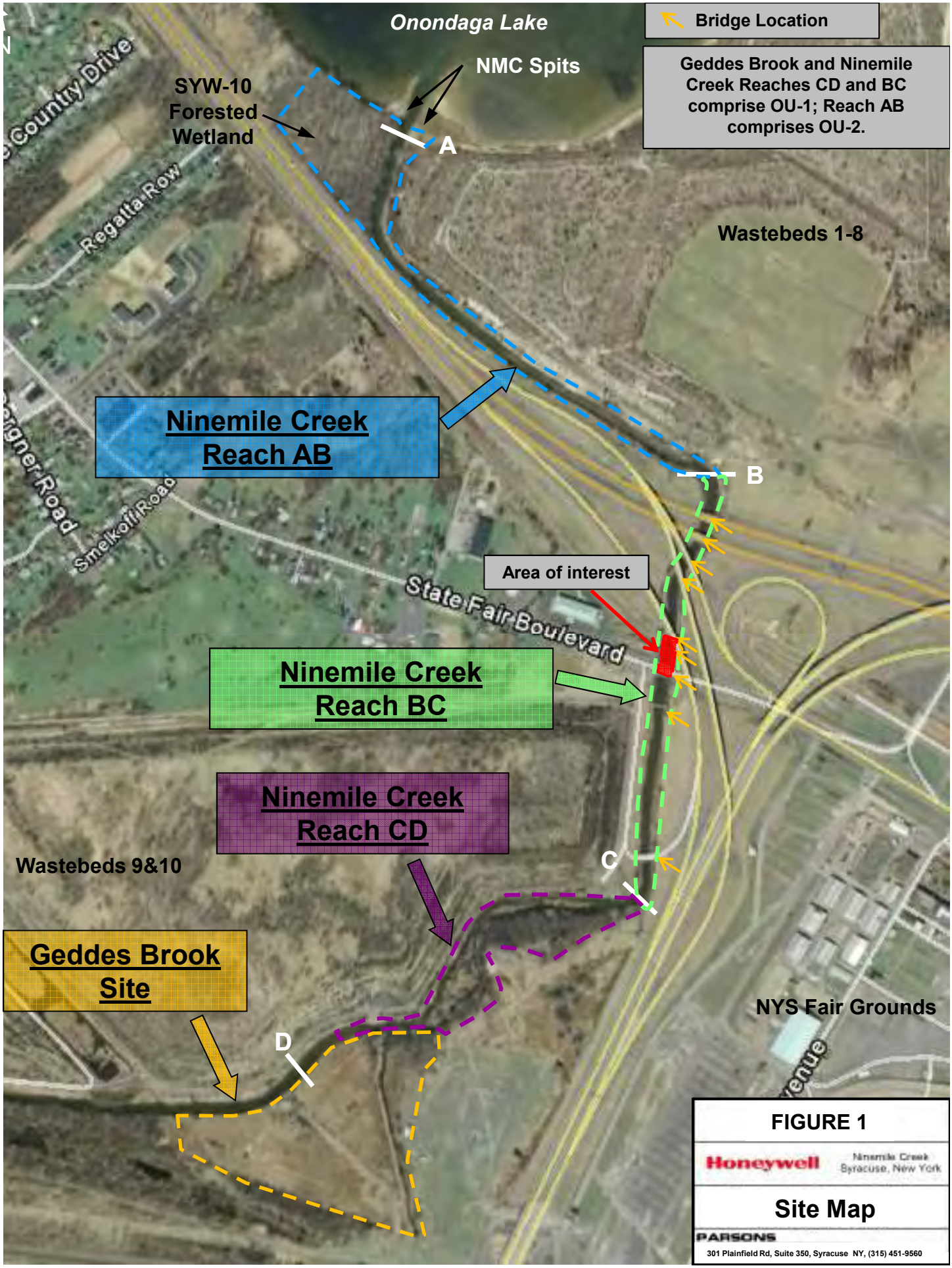


FIGURE 1

Honeywell

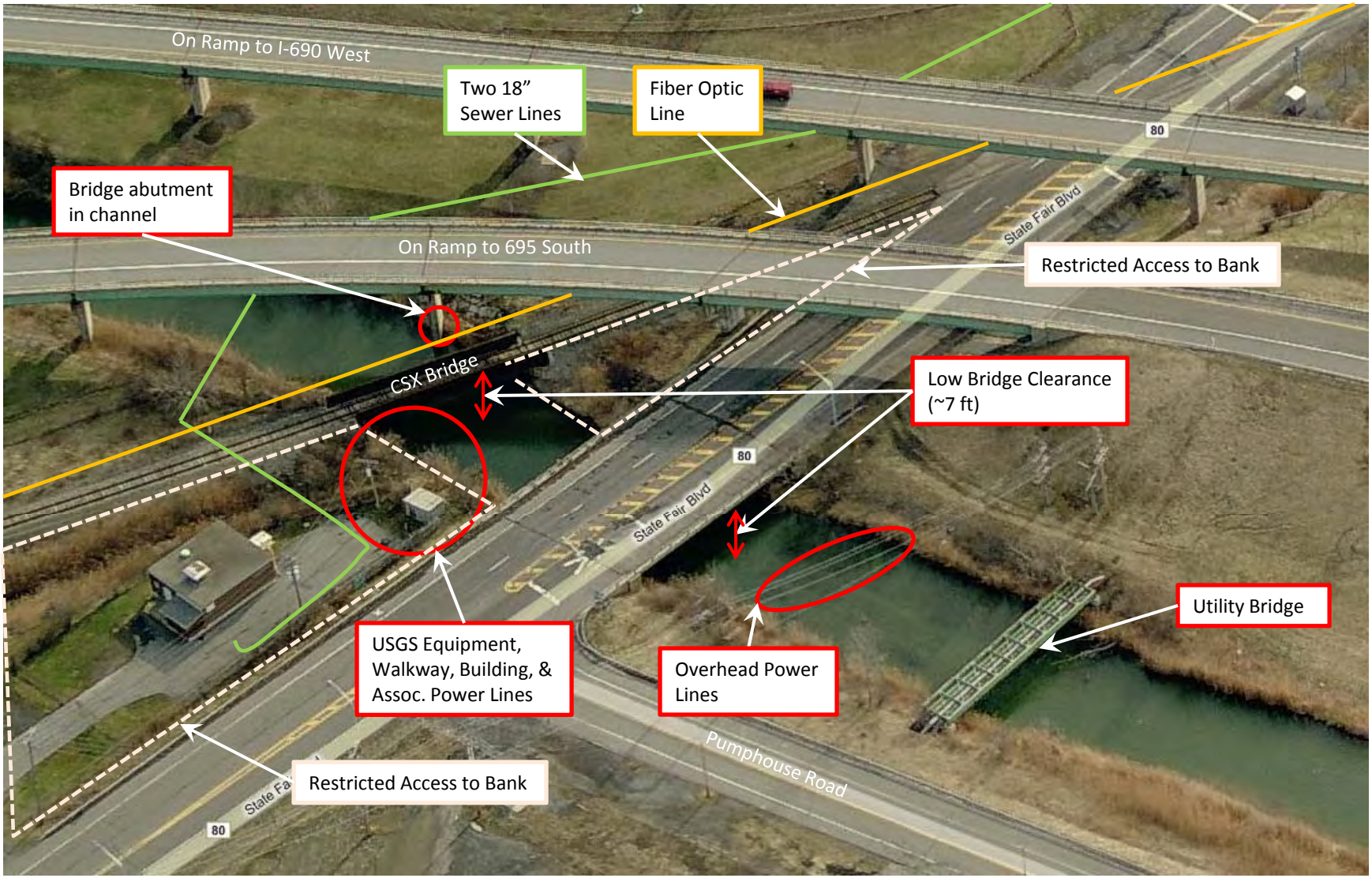
Ninemile Creek
Syracuse, New York

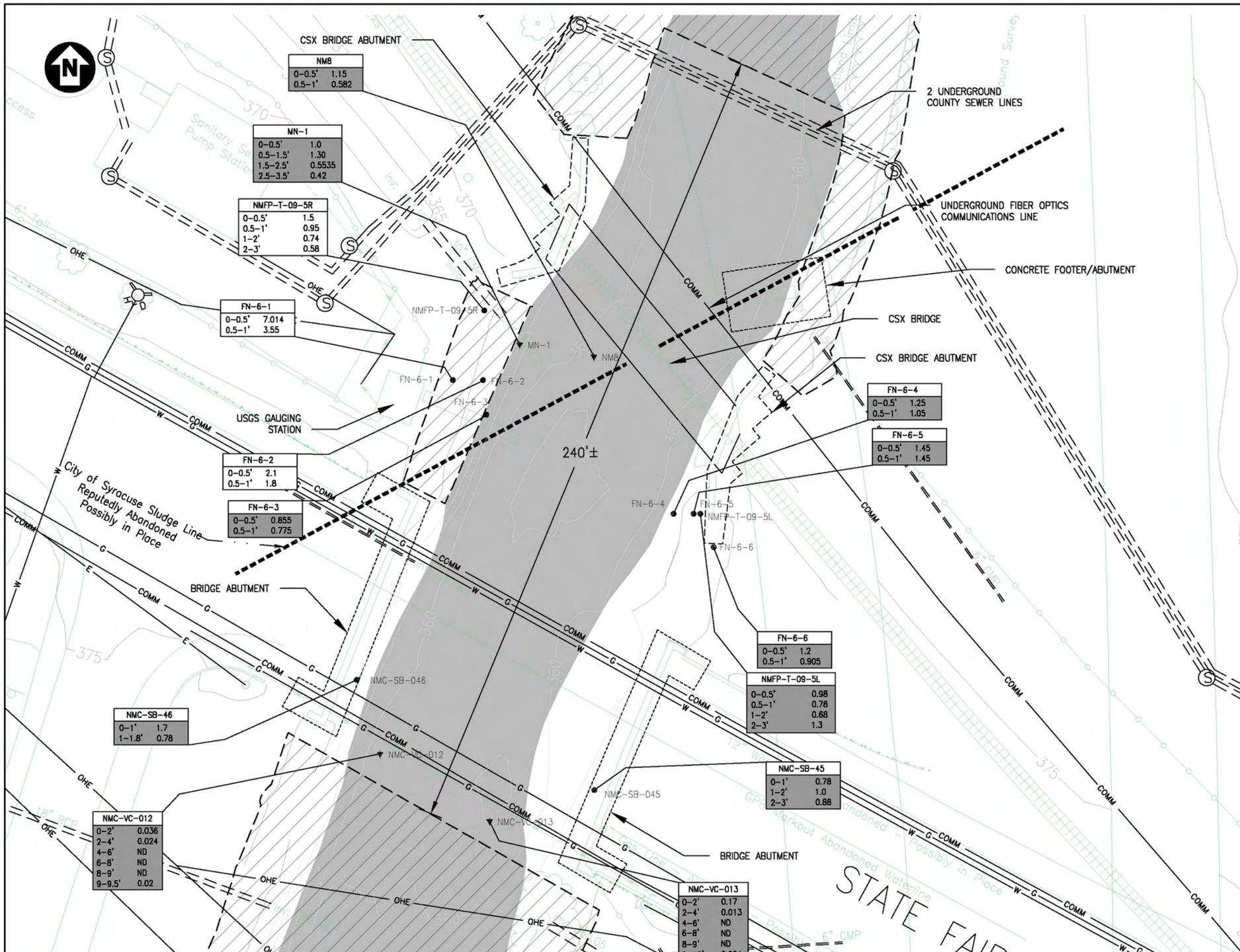
Site Map

PARSONS

301 Plainfield Rd, Suite 350, Syracuse NY, (315) 451-9560

Figure 2 – Aerial View (Utility Bridge to Sewer Lines)





LEGEND

SAMPLE LOCATION	
SAMPLE INTERVAL (FEET BEGS)	TOTAL MERCURY RESULT (MG/KG)

(FT BEGS) (MG/KG) MERCURY LEFT BEHIND

BEGS = BELOW EXISTING GROUND SURFACE

NR = NO RECOVERY

ND = NOT DETECTED

● NMC–SB–015 FLOODPLAIN SAMPLE LOCATION

▼ TN–11–1 CHANNEL SAMPLE LOCATION

WATER SURFACE

REMEDIAL AREA

NOTES:

1. SAMPLE LOCATIONS ARE APPROXIMATE.
2. SAMPLE INTERVALS WHERE DUPLICATES WERE COLLECTED AND ANALYZED, THE HIGHER OF THE TWO ANALYTICAL RESULTS ARE SHOWN.
3. NON–DETECT INDICATES MERCURY BELOW THE METHOD DETECTION LIMIT, WHICH TYPICALLY RANGES FROM 0.2 TO 0.002 MG/KG AND AVERAGES APPROXIMATELY 0.02 MG/KG.
4. IF A BOX DOES NOT HAVE ANY SHADED ROWS (FOR MERCURY LEFT BEHIND), THEN THE REMOVAL DEPTH WOULD BE TO THE FULL DEPTH OF THE CORE OR GREATER.

30 15 0 30 60

SCALE: 1"=30'

FIGURE 3

Honeywell

NINEMILE CREEK
SOLVAY, NEW YORK

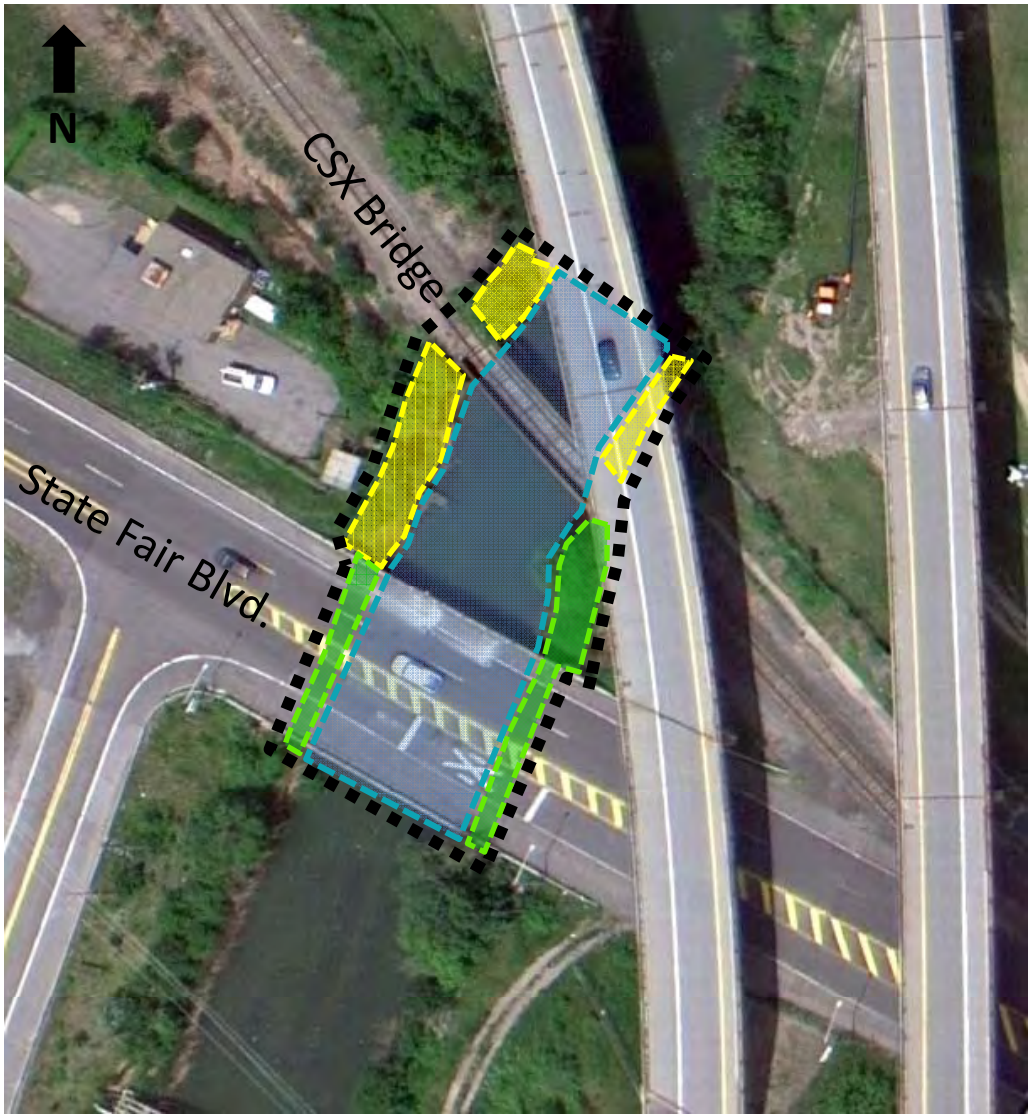
REACH BC
POTENTIAL EXCLUSION
SECTION

PARSONS

301 PLAINFIELD ROAD * SUITE 350 * SYRACUSE, NY 13212 * 315/451-9560
OFFICES IN PRINCIPAL CITIES

FILE NAME: C:\USERS\40189\DOCUMENTS\HONEYWELL\REACH AB BC\FIGURES\REACH BC EXCLUSION SECTION.DWG
PLOT DATE: 8/26/2013 4:36 PM PLOTTED BY: RUSSO, JILL

Figure 4
Focused Remedial Approach Summary



Legend

= 240 ft area of interest

= Channel - no removals

= Floodplain - focused removal area

= Floodplain - no removals

Note: Removal extents shown are approximate.