LOCKHEED MARTIN

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497 Electronics Parkway
Liverpool, NY 13088

April 10, 2014

Mr. Richard Mustico
Project Manager
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7010

Re: *Sunflower Drive Water Main Replacement Soil Sampling Plan*
Bloody Brook, Onondaga County, New York
Voluntary Cleanup Agreement Index #D7-0001-01-09 (VCP Site No. V00501-7)

Dear Mr. Mustico:

As previously discussed, we are proposing to collect additional soil samples from locations within the Bloody Brook site to determine if soil near the Sunflower Drive culvert that conveys the West Branch of Bloody Brook (WBBB) beneath the road has cadmium concentrations greater than 10 ppm. The additional soil samples are being proposed to define the proper management of the soils that will be disturbed to allow for Onondaga County Water Authority (OCWA) to install a water main under the culvert. The proposed soil sample locations and depths were determined based on the existing analytical results adjacent to the culvert and the scope of work outlined by OCWA to install the water main. The existing soil sample analytical data is summarized in Table 1 and the existing soil sample locations are shown on Figure 1, which are enclosed with this letter.

The additional proposed samples will be collected and analyzed as summarized in Table 2 and on Figure 1, which are enclosed with this letter. The location, number, and depth of soil samples are subject to change based on observations and physical conditions encountered during the sampling activities. The proposed sampling activities are to be completed within the Sunflower Drive roadway. Town of Salina will be consulted regarding proper traffic control during sample collection.

The samples will be located along the width of Sunflower Drive using markings OCWA placed on the road to indicate where the water main will be installed beneath the road. The locations of the samples along the length of Sunflower Drive on either side of the WBBB culvert were determined based on maintaining a safe distance from the culvert structure and utilities near the culvert and the existing analytical results adjacent to the culvert. Based on a review of the available information and data the samples will be located along the length of the road as summarized below.

Proposed location DI-82-01 will be collected up to 10 feet from the centerline of the sanitary sewer line located near and running parallel to the Sunflower Drive culvert. Proposed locations DI-82-01 through DI-82-06 will be located 10 feet apart as shown on Figure 1. Proposed location DI-83-01 will

be collected up to 10 feet from the edge of the Sunflower Drive culvert. Proposed sample locations DI-83-01 through DI-83-03 will be located 10 feet apart as shown on Figure 1.

At the proposed locations, a sample will be collected from each 1-foot depth interval starting from below the road pavement and sub base to the bottom of the boring. Previous soil sampling at the site indicated the presence of a clay unit located beneath the elevation of the bottom of the WBBB. Laboratory analytical results indicate that cadmium concentrations in samples from this clay unit generally decrease. Borings will be advanced to a depth of approximately 1 foot into the clay layer or to 12 feet below ground surface, whichever of these is encountered first during advancement of the boring.

Following sample collection, select samples will be sent to the laboratory and analyzed, and other samples will be sent to the laboratory to be held for possible future analysis depending on the results of other samples. The analysis approach for each proposed sample is summarized on Table 2. Analysis of samples will be for cadmium using United States Environmental Protection Agency (USEPA) SW-846 Method 6010B.

The soil samples will be collected in accordance with the December 2012 *Additional Design Soil Investigation Work Plan* (Work Plan). The Work Plan indicates that all soil samples will be collected using hand augers. The samples proposed in this letter will be collected using a direct push drill rig. The direct push drill rig will be used to drive the sampling tools into the formation to facilitate the soil sample collection. The soil samples will be collected in disposable two-foot acetate sleeves. These sleeves will be removed from the sampling equipment and cut open to expose the soil sample. The sample will then be split into 1-foot intervals and thoroughly mixed prior to placement in laboratory supplied sample containers. The samples will be collected and handled using new, disposable nitrile gloves. All down-hole equipment will be decontaminated, and each of the borings will be abandoned with the excess soil. The road asphalt will be patched to cover the bore hole.

The proposed soil samples described above will be collected shortly after receiving NYSDEC approval the proposed soil sampling activities. OCWA is planning on installing the water main in late spring or early summer 2014.

After you have reviewed this proposal for collection of additional soil samples at the Bloody Brook site, please let me know if you have any questions and if you approve of the additional soil sample collection and analysis.

If you have any questions or want to discuss the proposed soil sampling activities summarized in this letter, Please contact me at (315) 456-1993.

Sincerely,

Jill Fonte

Jill Fonte
Environmental Engineer
Enclosure

Enclosure

cc (with enclosure): Myron Parkolap – Lockheed Martin, Syracuse
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Robert Nunes – USEPA, Region II, New York
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Margaret Sheen, Esq. – NYSDEC, Syracuse
Maureen Schuck – NYSDOH, Albany
Curtis Waterman – HETF

Table 1
Summary of Soil Classification and Analytical Data Adjacent to Sunflower Drive Culvert[1]
West Branch of Bloody Brook (WBBB)
Bloody Brook Voluntary Cleanup Program
Onondaga County, New York

Boring ID	Sampling Interval	Analyte	Surface Elevation (ft)	Brook Elevation (ft)	Sample Elevation at Bottom of Interval (ft)	Sample Relation to Brook Level	General Soil Classification[2]	Collection Date	Result (mg/kg)
DI-07-01	0' - 1'	Cadmium	---	---	---	---	Silt & sand/gravel & organics	8/14/2009	28.8 J
	1' - 2'	Cadmium		---	---	---	Silty clay/gravel	8/14/2009	32.2 J [36.1 J]
	2' - 3'	Cadmium		---	---	---	Silt & sand	8/14/2009	20.7 J
	3' - 4'	Cadmium		---	---	---	Silt & clay	8/14/2009	1.16 J
DI-07-02	0' - 1'	Cadmium	---	---	---	---	Silty clay/gravel & organics	8/14/2009	32.4 J
	1' - 2'	Cadmium		---	---	---	Silt & clay/gravel	8/14/2009	5.98 J
	2' - 3'	Cadmium		---	---	---	Silt & clay/gravel	8/14/2009	10.8 J
	3' - 4'	Cadmium		---	---	---	Silt & sand/clay	8/14/2009	12.1 J
	4' - 5'	Cadmium		---	---	---	Silt & sand/clay	8/14/2009	6.11 J
	5' - 6'	Cadmium		---	---	---	Silt & sand/clay	8/14/2009	5.25 J
DI-07-03	0' - 1'	Cadmium	---	---	---	---	Silt & clay/gravel & organics	8/14/2009	0.422
	1' - 2'	Cadmium		---	---	---	Silt & clay	8/14/2009	0.535
	2' - 3'	Cadmium		---	---	---	Silt & clay	8/14/2009	7.38
	3' - 4'	Cadmium		---	---	---	Silty clay	8/14/2009	3.39
	4' - 5'	Cadmium		---	---	---	Silt & sand/clay & gravel	8/14/2009	5.06
	5' - 6'	Cadmium		---	---	---	Silt & clay	8/14/2009	73
	6' - 7'	Cadmium		---	---	---	Silty clay/sand	8/14/2009	<0.267
	7' -8'	Cadmium		---	---	---	Silt & sand	8/14/2009	<0.261
	8' - 9'	Cadmium		---	---	---	Silty clay/sand	8/14/2009	0.277 J
	9' -10'	Cadmium		---	---	---	Silty clay to sand	8/14/2009	1.49
	10' - 11'	Cadmium		---	---	---	Sand/clay to silty clay	8/14/2009	<0.243
DI-08-01	0' - 1'	Cadmium	376.77	367.59	375.77	Above	Clayey silt, sand	4/26/2011	0.25
	1' - 2'	Cadmium		367.59	374.77	Above	Sand, silty clay	4/26/2011	0.24
	2' - 3'	Cadmium		367.59	373.77	Above	Silty clay	4/26/2011	0.38
	3' - 4'	Cadmium		367.59	372.77	Above	Silty clay	4/26/2011	0.10 J
	4' - 5'	Cadmium		367.59	371.77	Above	Clayey silt, silty clay	4/26/2011	5.6
	5' - 6'	Cadmium		367.59	370.77	Above	Silty clay, clayey silt	4/26/2011	1.0
DI-09-01	0 - 1'	Cadmium	---	---	---	---	Sand & Silt, trace organics & gravel	9/21/2009	0.601
	1 - 2'	Cadmium		---	---	---	Sand & silt, trace organics & gravel	9/21/2009	0.270
	2 - 3'	Cadmium		---	---	---	Sand & silt, trace organics & gravel	9/21/2009	5.74
	3 - 4'	Cadmium		---	---	---	Silt & sand, trace gravel	9/21/2009	0.246
	4 - 5'	Cadmium		---	---	---	Sand & silt	9/21/2009	0.254
	5 - 6'	Cadmium		---	---	---	Silt & sand, trace gravel	9/21/2009	4.21
	6 - 7'	Cadmium		---	---	---	Silt	9/21/2009	9.12
DI-09-02	0 - 1'	Cadmium	---	---	---	---	Sand & silt, organics	9/21/2009	3.45
	1 - 2'	Cadmium		---	---	---	Sand & silt, organics	9/21/2009	10.7
	2 - 3'	Cadmium		---	---	---	Sand & silt, organics & trace clay	9/21/2009	0.982
	3 - 4'	Cadmium		---	---	---	Silt & sand, trace organics	9/21/2009	0.77
	4 - 5'	Cadmium		---	---	---	Silt & sand, trace organics	9/21/2009	9.40
	5 - 6'	Cadmium		---	---	---	Silty clay & fine sand	9/21/2009	5.76
	6 - 7'	Cadmium		---	---	---	Fine sand & silt	9/21/2009	3.55
DI-09-03	0' - 1'	Cadmium	375.67	367.69	374.67	Above	Silt, silty sand, trace gravel	4/25/2011	0.98
	1' - 2'	Cadmium		367.69	373.67	Above	Silty sand, silt, clay, trace gravel	4/25/2011	6.6
DI-09-04	0' - 1'	Cadmium	376.02	367.29	375.02	Above	Silty clay, clay	4/25/2011	0.72
	1' - 2'	Cadmium		367.29	374.02	Above	Silty clay	4/25/2011	0.72
DI-32A-01	0 - 1'	Cadmium	---	---	---	---	Silt, organics and gravel	9/21/2009	0.276 [0.215 J]
	1 - 2'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	1.72
	2 - 3'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	4.71
	3 - 4'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	0.591
	4 - 5'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	78.6
	5 - 6'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	6.53
DI-32C-01	0 - 1'	Cadmium	---	---	---	---	Sand & silt, organics	9/21/2009	0.444
	1 - 2'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	1.19
	2 - 3'	Cadmium		---	---	---	Sand & silt, gravel	9/21/2009	0.238 [0.180 J]
	9 - 10'	Cadmium		---	---	---	Silty clay	9/21/2009	<0.255
	10 - 11'	Cadmium		---	---	---	Silty clay	9/21/2009	<0.235
DI-32C-02	0 - 1'	Cadmium	---	---	---	---	Sand & silt, organics	9/21/2009	0.460
	1 - 2'	Cadmium		---	---	---	Sand & silt, organics	9/21/2009	1.32
	2 - 3'	Cadmium		---	---	---	Silt & sand, trace clay	9/21/2009	0.164 J

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Bloody Brook Voluntary Cleanup Program
Onondaga County, New York

Boring ID	Sampling Interval	Analyte	Surface Elevation (ft)	Brook Elevation (ft)	Sample Elevation at Bottom of Interval (ft)	Sample Relation to Brook Level	General Soil Classification[2]	Collection Date	Result (mg/kg)
DI-45-01	0' - 1'	Cadmium	375.04	369.27	374.04	Above	Clay, silty clay	4/25/2011	3.6
	1' - 2'	Cadmium		369.27	373.04	Above	Clay, silty clay, fine sand	4/25/2011	0.33
	2' - 3'	Cadmium		369.27	372.04	Above	Clay, silty clay, silt, trace fine sand	4/25/2011	0.62
	3' - 4'	Cadmium		369.27	371.04	Above	Clay, silty clay, organics	4/25/2011	530
	4' - 5'	Cadmium		369.27	370.04	Above	Clay, silty clay, occasional roots	4/25/2011	4.5
	5' - 6'	Cadmium		369.27	369.04	At	Clay, clayey silt, silt, sandy silt	4/25/2011	2.8
	6' - 7'	Cadmium		369.27	368.04	Below	Clayey silt, clay, sandy silt	4/25/2011	9.5
	7' - 8'	Cadmium		369.27	367.04	Below	Clay	4/25/2011	0.58
DI-45-02	0' - 1'	Cadmium	375.66	369.27	374.66	Above	Clay	4/25/2011	4.1
	1' - 2'	Cadmium		369.27	373.66	Above	Clay, silty clay	4/25/2011	1.9
	2' - 3'	Cadmium		369.27	372.66	Above	Clay, silty clay	4/25/2011	2.5
	3' - 4'	Cadmium		369.27	371.66	Above	Clay, silty clay	4/25/2011	2.6
DI-45-03	0' - 1'	Cadmium	376.01	369.27	375.01	Above	Clay, silty clay	4/25/2011	0.50
	1' - 2'	Cadmium		369.27	374.01	Above	Clay, silty clay	4/25/2011	0.21 J
DI-46-01	0' - 1'	Cadmium	377.47	367.00	376.47	Above	Clayey silt, silty clay, trace gravel	4/27/2011	3.6
	1' - 2'	Cadmium		367.00	375.47	Above	Silty clay, clayey silt, gravel	4/27/2011	0.83
DI-46-02	0' - 1'	Cadmium	377.39	367.00	376.39	Above	Clayey silt, silty clay, fine to coarse gravel	4/27/2011	0.79
	1' - 2'	Cadmium		367.00	375.39	Above	Fine to coarse gravel, silty clay	4/27/2011	0.70
DI-SB-05-05	0' - 1'	Cadmium	377.51	368.32	376.51	Above	Silty sand, trace clay	4/25/2011	0.94
	1' - 2'	Cadmium		368.32	375.51	Above	Sandy silt	4/25/2011	0.24 [0.23]
	2' - 3'	Cadmium		368.32	374.51	Above	Silty sand	4/25/2011	<0.26 U
	3' - 4'	Cadmium		368.32	373.51	Above	Fine sand with some gravel, trace silt	4/25/2011	0.52 B
	4' - 5'	Cadmium		368.32	372.51	Above	Grades to Sandy silt with little gravel	4/25/2011	0.33 B
	5' - 6'	Cadmium		368.32	371.51	Above	Sandy silt, trace gravel, trace clay	4/25/2011	0.54 B
	6' - 7'	Cadmium		368.32	370.51	Above	Sandy silt, trace gravel, trace clay	4/25/2011	0.88 B
	7' - 8'	Cadmium		368.32	369.51	Above	Clay, trace gravel at 7'	4/25/2011	1.0 B
SA-SB-05-02	0" - 2"	Cadmium	376.93	368.32	376.76	Above	Topsoil	10/22/2003	1.4
	0' - 1'	Cadmium		368.32	375.93	Above	Silty Sand	10/22/2003	1.4
	1' - 2'	Cadmium		368.32	374.93	Above	Silty Sand	10/22/2003	<0.58
	2' - 3'	Cadmium		368.32	373.93	Above	Silty Sand	10/22/2003	1.4
	3' - 4'	Cadmium		368.32	372.93	Above	Silty Sand	10/22/2003	<0.60
	4' - 5'	Cadmium		368.32	371.93	Above	Clayey Silt	10/22/2003	<0.60
	5' - 6'	Cadmium		368.32	370.93	Above	Clayey Silt	10/22/2003	12.5
	6' - 7'	Cadmium		368.32	369.93	Above	Sandy Silt	10/22/2003	<0.58
	7' - 8'	Cadmium		368.32	368.93	Above	Sandy Silt to Organic Clayey Silt	10/22/2003	<0.59
	8' - 9'	Cadmium		368.32	367.93	At	Organic Clayey Silt	10/22/2003	5.1
	9' - 10'	Cadmium		368.32	366.93	Below	Organic Clayey Silt	10/22/2003	5.9
	10' - 11'	Cadmium		368.32	365.93	Below	Organic Clayey Silt	10/22/2003	8.1
SA-SB-05-03	0" - 2"	Cadmium	376.62	368.31	376.45	Above	Topsoil	10/22/2003	1.51
	0' - 1'	Cadmium		368.31	375.62	Above	Silty Sand	10/22/2003	<0.607
	1' - 2'	Cadmium		368.31	374.62	Above	Silty Sand	10/22/2003	<0.588
	2' - 3'	Cadmium		368.31	373.62	Above	Silty Sand	10/22/2003	<0.581
	3' - 4'	Cadmium		368.31	372.62	Above	Silty Sand	10/22/2003	<0.579
	4' - 5'	Cadmium		368.31	371.62	Above	Clayey Silt	10/22/2003	<0.607
	5' - 6'	Cadmium		368.31	370.62	Above	Organic Clayey Silt	10/22/2003	2.5
	6' - 7'	Cadmium		368.31	369.62	Above	Organic Clayey Silt	10/22/2003	0.587
	7' - 8'	Cadmium		368.31	368.62	At	Organic Clayey Silt	10/22/2003	20.5
	8' - 9'	Cadmium		368.31	367.62	Below	Clayey Silt	10/22/2003	21.8
	9' - 10'	Cadmium		368.31	366.62	Below	Clayey Silt	10/22/2003	<0.661
SA-SB-05-04	0" - 2"	Cadmium	375.98	368.27	375.81	Above	Topsoil	10/22/2003	4.3
	0' - 1'	Cadmium		368.27	374.98	Above	Silty Sand	10/22/2003	3.6
	1' - 2'	Cadmium		368.27	373.98	Above	Silty Sand	10/22/2003	27.9
	2' - 3'	Cadmium		368.27	372.98	Above	Silty Sand	10/22/2003	<0.57
	3' - 4'	Cadmium		368.27	371.98	Above	Organic clayey Silt	10/22/2003	11.8
	4' - 5'	Cadmium		368.27	370.98	Above	Organic Silty Clay	10/22/2003	7.5
	5' - 6'	Cadmium		368.27	369.98	Above	Organic Silty Clay	10/22/2003	2.4
	6' - 7'	Cadmium		368.27	368.98	Above	Organic Silty Clay	10/22/2003	12.0
	7' - 8'	Cadmium		368.27	367.98	At	Organic Clayey Silt	10/22/2003	11.3
	8' - 9'	Cadmium		368.27	366.98	Below	Organic Clayey Silt	10/22/2003	20.9
	9' - 10'	Cadmium		368.27	365.98	Below	Organic Sand/Silt	10/22/2003	<0.72
	10' - 11'	Cadmium		368.27	364.98	Below	Organic Sand/Silt	10/22/2003	<0.85
	11' - 12'	Cadmium		368.27	363.98	Below	Silty Sand	10/22/2003	<0.63
	12' - 13'	Cadmium		368.27	362.98	Below	Organic Silt/Sand	10/22/2003	<0.68
	13' - 14'	Cadmium		368.27	361.98	Below	Organic Silt/Sand	10/22/2003	<0.68

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SA-SB-216-01	0" - 2"	Cadmium	375.03	368.96	374.86	Above	Topsoil	10/22/2003	3.3
	0' - 1'	Cadmium		368.96	374.03	Above	Silty Sand	10/22/2003	3.9
	1' - 2'	Cadmium		368.96	373.03	Above	Silty Sand	10/22/2003	<0.59
	2' - 3'	Cadmium		368.96	372.03	Above	Silty Sand	10/22/2003	<0.56
	3' - 4'	Cadmium		368.96	371.03	Above	Clayey Silt	10/22/2003	0.65
	4' - 5'	Cadmium		368.96	370.03	Above	Clayey Silt	10/22/2003	24.9
	5' - 6'	Cadmium		368.96	369.03	At	Clayey Silt	10/22/2003	0.77
	6' - 7'	Cadmium		368.96	368.03	Below	Clayey Silt	10/22/2003	4.7
	7' - 8'	Cadmium		368.96	367.03	Below	Clayey Silt	10/22/2003	<0.65
	8' - 9'	Cadmium		368.96	366.03	Below	Clayey Silt	10/22/2003	20.6
	9' - 10'	Cadmium		368.96	365.03	Below	Organic Clayey Silt	10/22/2003	<0.654
SA-SB-216-02	0" - 2"	Cadmium	376.08	368.88	375.91	Above	Topsoil	10/22/2003	1.26
	0' - 1'	Cadmium		368.88	375.08	Above	Silty Sand	10/22/2003	0.659
	1' - 2'	Cadmium		368.88	374.08	Above	Silty Sand	10/22/2003	<0.588
	2' - 3'	Cadmium		368.88	373.08	Above	Silty Sand	10/22/2003	<0.617
	3' - 4'	Cadmium		368.88	372.08	Above	Silty Sand	10/22/2003	<0.602
	4' - 5'	Cadmium		368.88	371.08	Above	Silty Sand	10/22/2003	5.38
	5' - 6'	Cadmium		368.88	370.08	Above	Organic Clayey Silt	10/22/2003	14.5
	6' - 7'	Cadmium		368.88	369.08	At	Organic Clayey Silt	10/22/2003	1.57 [0.823]
	7' - 8'	Cadmium		368.88	368.08	Below	Silty Clay	10/22/2003	<0.68
	8' - 9'	Cadmium		368.88	367.08	Below	Silty Clay	10/22/2003	0.903
	9' - 10'	Cadmium		368.88	366.08	Below	Organic Clayey Silt	10/22/2003	<0.756
	10' - 11'	Cadmium		368.88	365.08	Below	Organic Clayey Silt	10/22/2003	<0.719
	11' - 12'	Cadmium		368.88	364.08	Below	Silty Clay	10/22/2003	<0.62
	12' - 13'	Cadmium		368.88	363.08	Below	Silty Sand	10/22/2003	<0.616
	13' - 14'	Cadmium		368.88	362.08	Below	Silty Sand	10/22/2003	<0.60
SA-SB-216-03	0" - 2"	Cadmium	376.12	368.90	375.95	Above	Topsoil	10/22/2003	<0.652
	0' - 1'	Cadmium		368.90	375.12	Above	Silty Sand	10/22/2003	<0.60
	1' - 2'	Cadmium		368.90	374.12	Above	Silty Sand	10/22/2003	<0.598
	2' - 3'	Cadmium		368.90	373.12	Above	Silty Sand	10/22/2003	<0.617
	3' - 4'	Cadmium		368.90	372.12	Above	Silty Clay	10/22/2003	<0.624
	4' - 5'	Cadmium		368.90	371.12	Above	Silty Clay	10/22/2003	1.54
	5' - 6'	Cadmium		368.90	370.12	Above	Sandy Silt	10/22/2003	<0.632
	6' - 7'	Cadmium		368.90	369.12	At	Sandy Silt	10/22/2003	<0.641
	7' - 8'	Cadmium		368.90	368.12	Below	Sandy Silt	10/22/2003	<0.713
	8' - 9'	Cadmium		368.90	367.12	Below	Sandy Silt	10/22/2003	<0.635
	9' - 10'	Cadmium		368.90	366.12	Below	Organic Silt/Sand	10/22/2003	<0.635
SA-SB-216-04	0' - 1'	Cadmium	376.23	368.88	375.23	Above	Silty Sand	10/22/2003	<0.59
	1' - 2'	Cadmium		368.88	374.23	Above	Silty Sand	10/22/2003	<0.57
SB-02	0' - 1'	Cadmium	---	---	---	---	---	11/2001	203
	1' - 2'	Cadmium		---	---	---	---	11/2001	503
SB-03	0' - 1'	Cadmium	---	---	---	---	---	11/2001	37
	1' - 2'	Cadmium		---	---	---	---	11/2001	30.1
SB-04	0' - 1'	Cadmium	---	---	---	---	---	11/2001	30.4
	1' - 2'	Cadmium		---	---	---	---	11/2001	34.2
SB-29	0" - 2"	Cadmium		---	---	---	---	06/2002	10.5
SB-30	0" - 2"	Cadmium	---	---	---	---	---	06/2002	39.3
SB-31	0" - 2"	Cadmium	---	---	---	---	---	06/2002	22.9
SB-32	0" - 2"	Cadmium	---	---	---	---	---	06/2002	35.2
SB-33	0" - 2"	Cadmium	---	---	---	---	---	06/2002	11.3
SB-34	0" - 2"	Cadmium	---	---	---	---	---	06/2002	3.79
SB-35	0" - 2"	Cadmium	---	---	---	---	---	06/2002	19.0
SB-61	0' - 1'	Cadmium	---	---	---	---	Sandy Silt	11/2002	134
	1' - 2'	Cadmium		---	---	---	Sandy Silt	11/2002	22.9
	2' - 3'	Cadmium		---	---	---	Silty Sand	11/2002	26.2
	3' - 4'	Cadmium		---	---	---	Silty Sand/Peat	11/2002	864
SB-62	2' - 3'	Cadmium	---	---	---	---	Sandy Silt	11/2002	263
	3' - 4'	Cadmium		---	---	---	Silty Sand	11/2002	208
SB-63	0" - 2"	Cadmium	---	---	---	---	---	11/2002	22.6
SB-64	0" - 2"	Cadmium	---	---	---	---	---	11/2002	1.1
SB-208	0" - 2"	Cadmium	---	---	---	---	---	11/2002	32.7
	0' - 1'	Cadmium		---	---	---	Silty Sand	11/2002	63.7
	1' - 2'	Cadmium		---	---	---	Silty Sand	11/2002	27.3
	2' - 3'	Cadmium		---	---	---	Silty Sand	11/2002	600
	3' - 4'	Cadmium		---	---	---	Sandy Silt	11/2002	41.7

Table 1
Summary of Soil Classification and Analytical Data Adjacent to Sunflower Drive Culvert[1]
West Branch of Bloody Brook (WBBB)
Bloody Brook Voluntary Cleanup Program
Onondaga County, New York

Boring ID	Sampling Interval	Analyte	Surface Elevation (ft)	Brook Elevation (ft)	Sample Elevation at Bottom of Interval (ft)	Sample Relation to Brook Level	General Soil Classification[2]	Collection Date	Result (mg/kg)
SB-209	0" - 2"	Cadmium	---	---	---	---	---	11/2002	14.7
	0' - 1'	Cadmium		---	---	---	Sandy Silt	11/2002	11.8
	1' - 2'	Cadmium		---	---	---	Silty Sand	11/2002	14.3
	2' - 3'	Cadmium		---	---	---	Silty Sand	11/2002	10.0
	3' - 4'	Cadmium		---	---	---	Silty Sand	11/2002	10.7
SB-230	0" - 2"	Cadmium	376.54	366.99	376.37	Above	Topsoil	10/23/2003	23.5
	0' - 1'	Cadmium		366.99	375.54	Above	Sandy Silt	10/23/2003	10.1
	1' - 2'	Cadmium		366.99	374.54	Above	Fill	10/23/2003	5.2 [1.50]
	2' - 3'	Cadmium		366.99	373.54	Above	Fill	10/23/2003	<0.57
	3' - 4'	Cadmium		366.99	372.54	Above	Silty Sand	10/23/2003	0.81
	4' - 5'	Cadmium		366.99	371.54	Above	Silty Sand	10/23/2003	<0.60
	5' - 6'	Cadmium		366.99	370.54	Above	Silty Sand to Silty Clay	10/23/2003	<0.61
	6' - 7'	Cadmium		366.99	369.54	Above	Organic Silty Clay	10/23/2003	6.0
	7' - 8'	Cadmium		366.99	368.54	Above	Organic Silty Clay	10/23/2003	<0.65 [<0.68]
	8' - 9'	Cadmium		366.99	367.54	Above	Silty Clay	10/23/2003	<0.62
	9' - 10'	Cadmium		366.99	366.54	At	Silty Clay	10/23/2003	<0.59
	10' - 11'	Cadmium		366.99	365.54	Below	Organic Silty Clay	10/23/2003	<0.67
	11' - 12'	Cadmium		366.99	364.54	Below	Silty Clay	10/23/2003	<0.62
SB-454	0" - 2"	Cadmium	376.79	367.00	376.62	Above	Topsoil	4/29/2004	4.9
	0' - 1'	Cadmium		367.00	375.79	Above	Silty Sand	4/29/2004	7.5

Notes:

1. Boring locations are shown on Figure 1.
2. The soil classification descriptions identified in the table represent the predominant soil type for the respective intervals.
3. mg/kg = milligrams/kilograms (equivalent to ppm = parts per million).
4 --- indicates that the information is not available.
5. Duplicate results are presented in brackets.
6. B - Compound was found in the blank and sample.
7. J - The detected concentration is an estimated value.
8. U - Result edited to reflect non-detect by data validation company due to presence of cadmium in the associated preparation blank at similar concentrations.
9. < - Analyte not detected at the reporting limit shown.

TABLE 2
Proposed Soil Investigation Samples Adjacent to Sunflower Drive WBBB Culvert[1]
West Branch of Bloody Brook (WBBB)
Bloody Brook Voluntary Cleanup Program
Onondaga County, New York

Boring ID	Sample Depth Interval[2]	Analysis Approach[3]
DI-82-01	0' - 1'	Analyze
	1' - 2'	Analyze
	2' - 3'	Analyze
	3' - 4'	Analyze
	4' - 5'	Analyze
	5' - 6'	Analyze
	6' - 7'	Analyze
	7' - 8'	Analyze
	8' - 9'	Analyze
	9' - 10'	Analyze
	10' - 11'	Analyze
	11' - 12'	Analyze
DI-82-02	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]
DI-82-03	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]

TABLE 2
Proposed Soil Investigation Samples Adjacent to Sunflower Drive WBBB Culvert[1]
West Branch of Bloody Brook (WBBB)
Bloody Brook Voluntary Cleanup Program
Onondaga County, New York

Boring ID	Sample Depth Interval[2]	Analysis Approach[3]
DI-82-04	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]
DI-82-05	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]
DI-82-06	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]

TABLE 2
Proposed Soil Investigation Samples Adjacent to Sunflower Drive WBBB Culvert[1]
West Branch of Bloody Brook (WBBB)
Bloody Brook Voluntary Cleanup Program
Onondaga County, New York

Boring ID	Sample Depth Interval[2]	Analysis Approach[3]
DI-83-01	0' - 1'	Analyze
	1' - 2'	Analyze
	2' - 3'	Analyze
	3' - 4'	Analyze
	4' - 5'	Analyze
	5' - 6'	Analyze
	6' - 7'	Analyze
	7' - 8'	Analyze
	8' - 9'	Analyze
	9' - 10'	Analyze
	10' - 11'	Analyze
	11' - 12'	Analyze
DI-83-02	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]
DI-83-03	0' - 1'	Hold[4]
	1' - 2'	Hold[4]
	2' - 3'	Hold[4]
	3' - 4'	Hold[4]
	4' - 5'	Hold[4]
	5' - 6'	Hold[4]
	6' - 7'	Hold[4]
	7' - 8'	Hold[4]
	8' - 9'	Hold[4]
	9' - 10'	Hold[4]
	10' - 11'	Hold[4]
	11' - 12'	Hold[4]

TABLE 2

Proposed Soil Investigation Samples Adjacent to Sunflower Drive WBBB Culvert[1]

West Branch of Bloody Brook (WBBB)

Bloody Brook Voluntary Cleanup Program

Onondaga County, New York

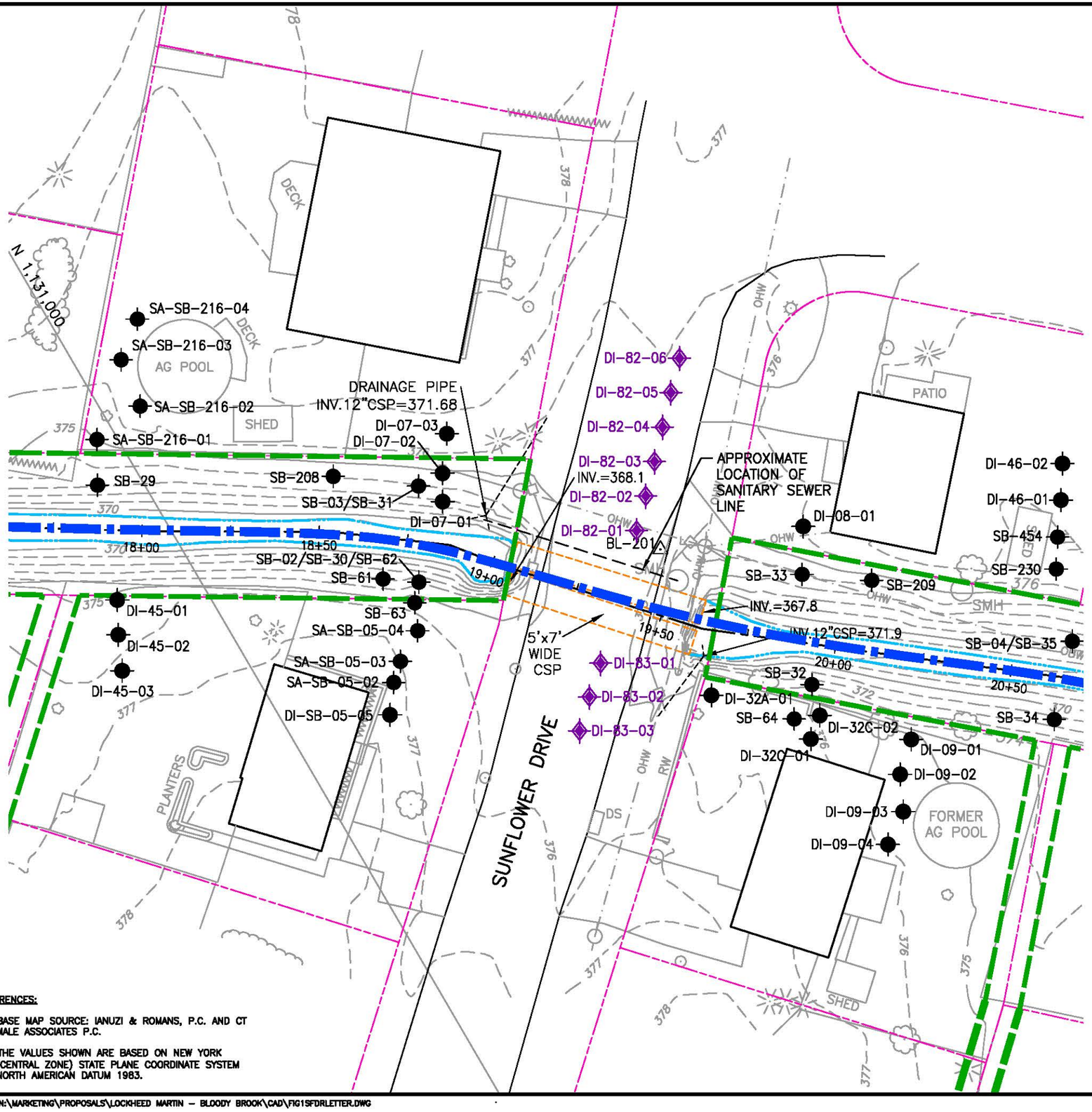
Notes:

1. Proposed boring locations are shown on Figure 1.

2. All samples will be collected using a direct push drill rig. If refusal is encountered, additional attempts will be made in the same general area as the proposed sample location. In the event of refusal, limited sample recovery, or the presence of an obstruction, the sample will not be collected and the reason for not collecting the sample will be documented.

3. As indicated in the table, certain samples will be collected and held at the laboratory and will be analyzed based on the results of other samples. If analysis of held samples is determined to be necessary, the analysis will be performed within laboratory and analytical procedure holding times. All samples that are analyzed will be analyzed for cadmium using USEPA SW-846 Method 6010B.

4. Analysis is contingent on results from successive samples listed above and from samples at consecutive depth intervals. Samples will not be analyzed if results are less than less than 10 ppm.



LEGEND

- BLOODY BROOK DRAINAGE DISTRICT EASEMENT
- PROPERTY BORDER
- 365 — TOPOGRAPHIC CONTOUR LINE
- WEST BRANCH OF BLOODY BROOK CENTERLINE
- STREAM/WATER EDGE
- UNDERGROUND DRAIN LINE
- OHW — OVERHEAD WIRES
- RW — RETAINING WALL
- GUARD RAIL
- SMH — SANITARY MANHOLE
- DS — DRAINAGE STRUTURES
- CULVERT
- N 1,131,000 — NYS PLANE COORDINATE SYSTEM NORTHING
- BL-115 — AERIAL SURVEY GROUND CONTROL POINT
- 7+50 + — CHANNEL CENTERLINE SURVEY STATION
- CONIFEROUS TREE
- DECIDUOUS TREE
- UTILITY POLE / GUY WIRE
- DI-82-01 — PROPOSED SAMPLING LOCATION
- SB-208 — EXISTING SAMPLING LOCATION
- LOCATION HISTORIC BROOK ALIGNMENT

NOTE

1. THE PROPOSED SAMPLE DEPTH INTERVAL AND ANALYSIS APPROACH FOR SOIL SAMPLES TO BE COLLECTED FROM THE PROPOSED SAMPLE LOCATIONS SHOWN ON THIS FIGURE ARE IDENTIFIED IN TABLE 2 OF THE APRIL 2014 SUNFLOWER DRIVE SOIL SAMPLING LETTER.

REFERENCES:

1. BASE MAP SOURCE: IANUZI & ROMANS, P.C. AND CT MALE ASSOCIATES P.C.
2. THE VALUES SHOWN ARE BASED ON NEW YORK (CENTRAL ZONE) STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM 1983.

0' 30' 60'

APPROXIMATE SCALE

AECOM

LOCKHEED MARTIN CORPORATION

EXISTING AND PROPOSED
SOIL SAMPLING LOCATIONS

WEST BRANCH OF BLOODY BROOK
ONONDAGA COUNTY, NEW YORK

FILE NAME:	DRN	PROJECT NO.	DATE	FIGURE NO.
FIG1SFDRLETTER.dwg	RNB	60301538	04 / 2014	1

Plotted By: bookser
Layout--Sheet Name: FIGURE 1
Plot File Date Created: Apr/08/2014 11:22 AM

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