

REMEDIAL INVESTIGATION WORK PLAN ADDENDUM

**157 Great Arrow Avenue Site
Buffalo, New York 14207
BCP Site No. C915326**

Prepared for:

**Great Arrow Estates, LLC
Buffalo, New York**

and

NYSDEC

Prepared by



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1.0 INTRODUCTION

Great Arrow Estates LLC and the NYSDEC executed a Brownfield Cleanup Agreement (BCA - Index # C915326-02-18), on April 3rd, 2018. Due to several circumstances including a revision to ownership, the project was delayed, and the previously approved Remedial Investigation Work Plan (RIWP) requires updates. The “REMEDIAL INVESTIGATION WORK PLAN - 157 Great Arrow Avenue Site, Buffalo, New York 14207” was completed on June 4, 2018 by GZA GeoEnvironmental of New York and approved by NYSDEC. That document remains the main instrument for completing the BCP fieldwork.

This Addendum incorporates the NYSDEC’s updated guidelines specifically for sampling for emergent contaminants. Additionally, the project schedule has been revised detailing the proposed timeline for completing all remaining elements of the remedial program through issuance of a certificate of completion.

2.0 FIELD INVESTIGATION REVISIONS

The approved workplan contains the details of the site and the planned investigation and is the main instrument for completing the BCP field investigation. This addendum simply revises the work plan specifically by adding emerging contaminant PFAS sampling and analysis methods to the soil investigation program.

Sampling and analysis of soils for emerging contaminants including 1,4 Dioxane and Per & Polyfluoroalkyl Substances will be conducted in accordance with the NYSDEC Guidance for Sampling and Analysis of PFAS (January 2021). As detailed in the guidance document, PFAS compounds should be analyzed under EPA Method 1633. The analytical laboratory proposed for use for the analysis of samples will be a certified NYSDOH ELAP laboratory.

The QA Manager of the laboratory will be responsible for performing project-specific audits and for overseeing the quality control data generated. The RI field geologist/technician coordinates all personnel involved with field sampling, verifies that all sampling is conducted per the RIWP, and communicates regularly with the BE3 Project Manager. The ultimate responsibility for maintaining quality throughout the project rests with the Project Manager, including field and laboratory QA/QC.

Attached is a revised **TABLE 1 - SUMMARY OF REMEDIAL INVESTIGATION SAMPLING PROGRAM** which summarizes the sampling program at the site and lists the number of PFAS samples to be collected per media. Also attached is the list of PFAS analytes.

TABLES

REVISED TABLE 1
SUMMARY OF REMEDIAL INVESTIGATION SAMPLING PROGRAM

Sample Type	Matrix	Summary of Estimated Number of Samples						
		Field	Field Duplicate**	Matrix Spike**	Matrix Spike Duplicate**	Rinsate Blank**	Trip[Blank*	PFAS Sample Analysis****
Urban Fill Soil *	Soil	27	2	2	2	2	5	8
Native Soil*	Soil	17	1	1	1	1	1	5
Surficial Soil*	Soil	15	1	1	1	1	1	4
Berm Fill Soil*	Soil	4	1	1	1	1	1	2
Groundwater*	Water	6	1	1	1	1	1	6
Soil Vapor/Indoor Air***	Air	11	1	1	1	NA	1	NA
	TOTAL	80	7	7	7	6	10	25

* Soil samples are to be analyzed for the following parameters:

TCL Volatile Organic Compounds (EPA Methods 8260);

TCL Semi-Volatile Organic Compounds (EPA Method 8270);

TAL Metals (EPA Method 6010/7470/7471);

Pesticides/herbicides (EPA Method 8081);

Poly-Chlorinated Biphenyls (EPA Method 8082);

including Tentatively Identified Compounds.

PFAS Contaminants (EPA Method 1633)

1.4 Dioxane (EPA Method 8270SIM)

**** PFAS Soil Samples Based on 25% of total Samples plus 1 each for QA/QC

** Water samples are to be analyzed using USEPA SW-846 methodology for:

TCL Volatile Organic Compounds (EPA Methods 8260);

TCL Semi-Volatile Organic Compounds (EPA Method 8270);

TAL Metals (EPA Method 6010/7470/7471);

Pesticides/Herbicides (EPA Method 8081);

Poly-Chlorinated Biphenyls (EPA Method 8082);

including Tentatively Identified Compounds

1,4 Dioxane (EPA method 8270SIM)

PFAS (EPA Method 1633).

*** Air samples are to be analyzed for the following parameters:

Volatile Organic Compounds (EPA Method TO-15)

°° Quality Assurance & Quality Control Samples - NA - Not Applicable

TABLE 2**PFAS ANALYTE LIST**

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonates	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	PFOS	1763-23-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7	
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluorooctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

BCP Revised Project Task Schedule

