2 INGRAHAM STREET (DAR SITE ID #24)

Address:	2 Ingraham Street, East Williamsburg, New York 11206 (also known as 74-92 Bogart Street, 1-39 Harrison Place, 75-91 Morgan Avenue, and 2-40 Ingraham Street)
Tax Lot Parcel(s):	Brooklyn Block 3084, Lot 1
Latitude:	40.706571
Longitude:	-73.932809
Regulatory Programs/ Numbers/Codes:	USEPA ID No. NYD986974392, BCP No. C224036, PBS No. 2-603519 and 2-083879, NYSDEC Spill No. 9830001
Analytical Data Status:	☐ Electronic Data Available ☒ Hardcopies only ☐ No Data Available

1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCs) TRANSPORT PATHWAYS TO THE CREEK

The current understanding of the transport mechanisms of COPCs from the upland portions of the 2 Ingraham Street site (site) to Newtown Creek is summarized in this section and Table 1, and supported in following sections.

Overland Transport

The site is located approximately 758 feet from Newtown Creek and associated waterways. This is not a complete historical or current pathway.

Bank Erosion

The site is not adjacent to Newtown Creek or associated waterways. This is not a complete historical or current pathway.

Groundwater

The site is located approximately 758 feet from English Kills, a tributary of Newtown Creek. High concentrations of nickel have been historically detected in groundwater beneath the site, and groundwater flows to the north towards English Kills. This pathway is potentially

historically complete. There is insufficient evidence to make a current pathway determination.

Overwater Activities

This site is not adjacent to Newtown Creek or associated waterways and has no overwater activities. This is not a complete historical or current pathway.

Stormwater/Wastewater Systems

This site is within the Newtown Creek Water Pollution Control Plant (WPCP) sewershed. Stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated combined sewer overflows (CSOs) are discharged to English Kills at Outfall NCB-015 (NYCDEP 2007). Available documents contained no current stormwater or wastewater permits, and past discharge monitoring reports have not been located. The metal finishing operation at the site discharged wastewater to the sewer system via a collection trench, which suggests the wastewater system was a complete historical pathway for the site to the extent that they were coincident with CSO discharges to English Kills. There is insufficient evidence to make a current sewer/CSO pathway determination.

Information regarding on-site stormwater infrastructure and management was not identified in documents available for review. There is insufficient evidence to make a historical or current pathway determination for direct discharge of stormwater and wastewater.

Air Releases

Information regarding site air discharges was not identified in documents available for review. There is insufficient evidence to make a historical or current pathway determination.

2 PROJECT STATUS

The current property owner, Smith Equities, LLC, entered into a Brownfield Cleanup Program (BCP) agreement in 2010 under BCP site code C224036 (NYSDEC 2010). Site investigation activities, performed by the previous owner, were conducted at the site prior to

this agreement. A summary of investigation and remedial activities at the site is provided in the following table:

Activity		Date(s)/Comments
Phase 1 Environmental Site Assessment	☒	Phase I Environmental Site Assessment Report: November 1996
Site Characterization	☐	
Remedial Investigation	☒	Site Investigation Report: December 1997 Focused Phase II Soil Investigation Report: Trench Area: May 1997 Additional Sampling Work Plan and Remediation Plan: June 1998
Remedy Selection	☐	
Remedial Design/Remedial Action Implementation	☐	
Use Restrictions (Environmental Easements or Institutional Controls)	☐	
Construction Completion	☐	
Site Closeout/No Further Action Determination	☐	

- NYSDEC Site Code(s): BCP site code C224036
- NYSDEC Site Manager: Javier Perez-Maldonado

3 SITE OWNERSHIP HISTORY

Respondent Member: ☐ Yes ☒ No

Owner	Years	Occupant	Types of Operations
Unknown	1889 – 1942	Roman Catholic Church of Our Lady of Sorrows and Orphan Home of the Sorrowful Mother	Church, orphanage, parochial school
Bogart Holding Company	Unknown – 1967	Unknown	Unknown
Unknown	circa 1948 – present	Macon Umbrella Corporation (Incorporated 1948)	Umbrella manufacturer
Unknown	circa 1960s – 1980	Jo-Mar Metal Finishing Corporation	Metal finishing
Unknown	circa 1960s – unknown	Unknown	Zipper Manufacturer
Milhan Products, Incorporated	1967 – 1999	Unknown	Unknown
Unknown	1980 – 1994	Jayar Metal Finishing Corporation (incorporated 1980) aka Jayar Plating Company	Metal finishing
Ashpol Realty Corporation	1999 – 2003	Unknown	Unknown
Smith Equities, LLC	2003 – present	Unknown/vacant building	Unknown/vacant building

Notes:
Discussion and sources provided in Section 6.

4 PROPERTY DESCRIPTION

The site occupies approximately 0.5-acre[1] approximately 758 feet from the head of the English Kills waterway, a tributary of Newtown Creek. Site topography is relatively flat and site elevation is approximately 20 feet above mean sea level. The entire site is covered by one 80,000 square foot building, constructed in 1946 (see Figure 1).

[1] Acreage is an approximation of the site tax parcel using geographic information system data.

The site is zoned for manufacturing, M1-2 (NYCDCP 2012). M1 districts typically include light industrial uses such as woodworking shops, repair shops, and wholesale service and storage facilities. The site is bordered on the south by Harrison Place, on the north by Ingraham Street, on the west by Bogart Street, and on the east by Morgan Avenue. The site is located to the southwest of remedial site 353 McKibbin Street (DAR Site ID No. 111), as shown in Figure 1.

5 CURRENT SITE USE

The building was vacant during investigation activities between 1996 and 1998 and its current use is unknown.

6 SITE USE HISTORY

A Catholic Church, an orphanage, and a parochial school occupied the site in the late 1800s and early 1900s (Sanborn 1907, 1933a, 1933b). In 1946, a half-acre warehouse was built on the site. Businesses located in the warehouse included:

- A manufacturer of beach and garden umbrellas that occupied half of the building on the Morgan Avenue side
- A zipper manufacturer on the corner of Harrison Place and Bogart Street
- A metal finisher on the corner of Ingraham and Bogart Streets (Sanborn 1933a, 1933b)

The Jayar Metal Finishing Corporation (Jayar) took over the Jo-Mar Metal Finishing Corporation's warehouse space (MacRae's 1982). Jayar dissolved its corporate status in 1994 (NYSDOS 2011).

7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCs

The current understanding of the historical and current potential upland and overwater areas of concern at the site is summarized in Table 1. The following sections provide brief discussion of the potential sources and COPCs at the site requiring additional discussion.

Potential contaminant areas of concern at the site include products and equipment used in former church, orphanage and parochial school operations, and umbrella manufacturer, metal finishing and zipper manufacturer practices and operations including aboveground storage tanks (ASTs), a floor trench and drums. The COPCs associated with these areas of concern include asbestos, polycyclic aromatic hydrocarbons (PAHs) and other semi-volatile organic compounds (SVOCs), chlorinated and non-chlorinated volatile organic compounds (VOCs), cyanide, metals (including lead, zinc, chromium, silver, mercury and nickel), and phenols (as found in paint).

7.1 Uplands

Metal plating operations were located near a large floor trench, which was connected to the sewer system. The *Phase I Environmental Assessment* indicates drips and spills were generally directed to the floor drain, diluted with water, and discharged directly to the municipal sewer (ERD 1996). Heavy metals, cyanides and acids (e.g., sulfuric and muriatic) were likely used during these operations (ERD 1996).

The site was a registered petroleum bulk storage (PBS) facility (PBS No. 2-603519 and 2-083879), and five ASTs were historically stored at the site as described in the following table (NYSDEC 2011):

Tank ID	Date Installed	Tank Status	Tank Location	Capacity (gallons)	Product
PBS No. 2-603519					
1ABG	NR	Closed – Removed 03/01/98	AST	3,000	No. 2 fuel oil
2ABG	NR	Closed – Removed 03/01/98	AST	3,000	No. 2 fuel oil
3ABG	NR	Closed – Removed 03/01/98	AST	3,000	No. 2 fuel oil
4ABG	NR	Closed – Removed 03/01/98	AST	3,000	No. 2 fuel oil
PBS No. 2-603519					
001	NR	Administratively closed 07/29/03	AST (in contact with soil)	3,000	No. 2 fuel oil

Notes:
AST – aboveground storage tank NR – not reported

Four of the five ASTs were located in the basement and were used to store fuel oil for the heating systems in the building. The tanks had been abandoned as of 1996 and were known to contain an oil/water mix (ERD 1996). Staining on the floor suggests a spill or leak leading to basement sumps and potentially beyond into the sewer system (ERD 1996).

Additionally, during a site visit in 1996, at least six unlabeled drums were found and believed to be left over from the plating operations; samples were also collected and analyzed, which identified the presence of lead based paint and asbestos containing material (ACM) within boiler insulation (ERD 1996).

The site was classified a Resource Conservation and Recovery Act (RCRA) conditionally exempt small quantity generator (CESQG) in 1991, and a non-generator in 2006 and 2007 (EDR 2010). U.S. Environmental Protection Agency (USEPA) waste manifest records indicate for the site disposal of the following wastes (EDR 2010):

- D001 – Non-Listed Ignitable Wastes
- D002 – Non-Listed Corrosive Wastes
- D003 – Non-Listed Reactive Wastes
- D011 – Silver 5.0 milligrams per liter (mg/L) toxicity characteristic leaching procedure (TCLP)
- F001 – Unknown spent halogenated solvent
- F006 – WW Treat SL FM Electroplating Operations
- F007 – Plating Bath Solvent FM Electroplating Operations
- P121 – Zinc Cyanide

7.2 Overwater Activities

This site is not adjacent to Newtown Creek or associated waterways. Information related to overwater activities was not identified in documents available for review.

7.3 Spills

Documented spills at the site are summarized as follows (NYSDEC 2012):

NYSDEC Spill No.	Spill Date	Close Date	Material Spilled	Remarks
9830001	12/31/97	Not closed	Chlorinated Solvents	Unknown amount spilled to soil; cause not specified (NYSDEC 2011)
			Metals	1 gallon spilled to soil; cause not specified (NYSDEC 2011)

Note:
NYSDEC – New York State Department of Environmental Conservation

8 PHYSICAL SITE SETTING

8.1 Geology

Geologic conditions at the site have been characterized to approximately 17 feet below ground surface (bgs). The site lithology from the ground surface downward consists of fill, silt, silty sand, and clay to a maximum depth of 17 feet below the concrete slab (Excel 1997). Attachments 1 and 2 show the locations of soil borings and monitoring wells at the site. A total of 10 soil borings and four monitoring wells were used for the Phase I and Phase II investigations to characterize the subsurface of the site. Historic fill material underlies the surface to approximately 8 feet bgs. The fill material is characterized in the boring logs as miscellaneous fill containing "coal cinders" (Excel 1997; NYSDEC 2011). The silt to sand proportions are reported to increase with depth and clay was encountered at depths greater than 6 feet bgs at several boring locations (Excel 1997).

8.2 Hydrogeology

Hydrogeologic conditions at the site have been characterized within the unconfined groundwater unit to depths of approximately 15 feet bgs. Depth to groundwater was measured in the four installed monitoring wells and varies across the site from 14 to 15.5 feet. bgs (AKRF 1997). Monitoring well locations are shown on Attachment 1 and groundwater flow was determined to be to the northeast, towards English Kills (AKRF 1997).

9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

Investigations conducted at the site between 1996 and 1998 revealed the presence of heavy metals, cyanide, and VOCs in soils and groundwater.

9.1 Soil

Soil Investigations	☒ Yes ☐ No
Bank Samples	☐ Yes ☐ No ☒ Not Applicable
Soil-Vapor Investigations	☐ Yes ☒ No

9.2 Soil Investigations

Attachments 1 and 2 present the locations of soil borings completed on the site. Soil borings for all investigations were focused on the area within the building where metal finishing operations occurred and the associated floor trench. A total of 23 subsurface soil samples were collected from nine soil borings during on-site investigations in 1997 (AKRF 1997; Excel 1997). Collected samples were analyzed for target analyte list (TAL) metals, hexavalent chromium, pH, and total cyanide. No samples were submitted for VOC or SVOC analysis. PID readings were collected by allowing samples to sit in a shaded location for up to 30 minutes prior to inserting the tip of a calibrated PID into the bag and recording readings (Excel, 1997). For the 16 soil samples collected, readings ranged from non-detect to 0.2 parts per million (ppm) and it was concluded that VOC contamination was not a concern in the soils beneath the site (Excel, 1997). Laboratory results revealed exceedances of heavy metals including chromium, nickel, copper, barium, beryllium, iron, lead, mercury and zinc.

Selected results are summarized in the following table:[2]

Analyte	Units	Minimum Soil Concentration	Maximum Soil Concentration
Surface (0 to 2 feet)			
Barium	mg/kg	63.6	728
Beryllium	mg/kg	ND	0.6
Chromium	mg/kg	13.2	10,600
Copper	mg/kg	16.5	1,230
Lead	mg/kg	92.3	906
Mercury	mg/kg	ND	2.37

[2] Results are from AKRF 1997 and Excel 1997 (also see Attachments 3 and 4 for summary tables)

Analyte	Units	Minimum Soil Concentration	Maximum Soil Concentration
Nickel	mg/kg	36.1	5,940
Zinc	mg/kg	ND	68
Cyanide	mg/kg	ND	1,460
pH	units	5.22	9.1
Subsurface (> 2 feet)			
Barium	mg/kg	102	183
Beryllium	mg/kg	ND	0.89
Chromium	mg/kg	15.4	12,000
Copper	mg/kg	8.3	1,060
Lead	mg/kg	ND	362
Mercury	mg/kg	ND	6.23
Nickel	mg/kg	43.8	5,770
Zinc	mg/kg	27.2	212
Cyanide	mg/kg	ND	1,590
pH	units	3.69	9.5

Notes:
mg/kg – milligrams per kilogram
ND – not detected.

9.3 Soil Summary

During investigations in 1997, soil samples collected at the site were analyzed for TAL metals. Elevated concentrations of heavy metals including chromium, nickel, copper, barium, beryllium, iron, lead, mercury, and zinc were detected at the surficial and subsurface levels.

9.4 Groundwater

Groundwater Investigations ☒ Yes ☐ No

Nonaqueous phase liquid (NAPL) Presence (Historical and Current) ☐ Yes ☒ No

Dissolved COPC Plumes ☐ Yes ☒ No

Visual Seep Sample Data ☐ Yes ☐ No ☒ Not Applicable

9.5 Groundwater Investigations

Four groundwater monitoring wells were installed at the site to sample groundwater both down and upgradient of the trench where metal finishing operations discharged (AKRF 1997). Four groundwater samples were collected, one from each monitoring well, and submitted for Target Compound List VOCs (TCL VOCs). One compound was detected at monitoring well MW-2 (tetrachloroethene) at 2 parts per billion (ppb), below the drinking water standard of 5 ppb (AKRF 1997). Samples were also submitted for TAL metals, and there were numerous detections and exceedances for both the filtered and unfiltered samples. Nickel was detected at relatively high concentrations (1,030 to 443,000 ppb filtered) in groundwater samples from wells MW-1 and MW-2 down-gradient of the trench (AKRF 1997). There is no NYSDEC Class GA Standards for nickel. The following table lists only those metals in groundwater that exceed NYSDEC GA values, as documented in the December 1997 *Site Investigation Report* (AKRF 1997).

Analyte	Units	Minimum Groundwater Concentration	Maximum Groundwater Concentration
Unfiltered TAL Metals			
Antimony	ppb	ND	26.6
Arsenic	ppb	ND	70.6
Barium	ppb	351	1,270
Beryllium	ppb	2.4	9.7
Chromium	ppb	99.6	395
Iron	ppb	139,000	575,000
Lead	ppb	39.3	150
Magnesium	ppb	33,100	224,000
Manganese	ppb	8,770	130,000
Nickel	ppb	259	449,000
Sodium	ppb	58,300	686,000
Thallium	ppb	5.7	35.7
Zinc	ppb	218	851
Filtered TAL Metals			
Iron	ppb	123	1,930
Magnesium	ppb	21,400	227,000
Manganese	ppb	3,370	131,000

Analyte	Units	Minimum Groundwater Concentration	Maximum Groundwater Concentration
Nickel	ppb	13	443,000
Selenium	ppb	6.8	11.4
Sodium	ppb	62,900	719,000
Thallium	ppb	ND	5

Notes:
ND – not detected
ppb – parts per billion
TAL – target analyte list

The December 1997 Site Investigation Report used the U.S. Air Force Bioscreen Version 1.3 modeling to evaluate the potential flow of nickel-contaminated groundwater from the site to English Kills. Results of the modeling indicate that nickel would migrate very slowly and suggest that the plume would not reach the creek (AKRF 1997).

9.6 Groundwater Summary

In 1997, groundwater investigations at the site detected tetrachloroethene in a monitoring well; however, the concentration detected was below the NYSDEC Class GA drinking water standard of 5 ppb. Several concentrations of TAL metals, however, were found in exceedance of recommended groundwater standards.

9.7 Surface Water

Surface Water Investigation	☐ Yes	☒ No
SPDES Permit (Current or Past)	☐ Yes	☒ No
Industrial Wastewater Discharge Permit (Current or Past)	☐ Yes	☒ No
Stormwater Data	☐ Yes	☒ No
Catch Basin Solids Data	☐ Yes	☒ No
Wastewater Data	☐ Yes	☒ No

9.7.1 Stormwater and Wastewater Systems

Information regarding on-site stormwater infrastructure and management was not identified in documents available for review. This site is within the Newtown Creek WPCP

sewershed. Stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated CSOs are discharged to English Kills at Outfall NCB-015.

Information reviewed in available records indicates the site has not been issued a current or historical Industrial Wastewater Discharge permit. However, available documents indicate the metal finishing operation at the site discharged wastewater to the sewer system via a collection trench (ERD 1996).

9.8 Sediment

Creek Sediment Data ☐ Yes ☐ No ☒ Not Applicable

Information regarding sediment investigations was not identified in documents available for review.

9.9 Air

Air Permit ☐ Yes ☒ No

Air Data ☐ Yes ☒ No

9.9.1 Air Data

Information related to air emissions was not found in the reviewed documents. ACM and lead paint was, however, found at the site (ERD 1996), which if deteriorated, could potentially become airborne and adversely affect air quality.

10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

Additional sampling activities and a remedial action are proposed in the 1998 *Additional Sampling Work Plan and Remediation Plan* (AKRF 1998). Samples would be taken adjacent to SB-1 (see Attachment 1) and analyzed for both TAL metals and TCLP metals. Proposed remediation includes removing and disposing of metal sludges (or soils visibly contaminated with metal sludges), as well as any soils exceeding the toxicity characteristics (TC) for hazardous waste. Removal of TC soils would be confirmed by post-excavation sampling and

all excavations and the trench would be backfilled and then covered with fresh concrete (AKRF 1998). The results of these proposed actions were not included in the documents reviewed.

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Sanborn, 1933b. *Insurance Maps of the Borough of Brooklyn, City of New York*. Volume 9: Sheet 31. Original 1933, revised 1990.

12 ATTACHMENTS

Figures

Figure 1 Site Vicinity Map: 2 Ingraham Street

Tables

Table 1 Potential Areas of Concern and Transport Pathways Assessment - 2 Ingraham Street

Supplemental Attachments

Attachment 1 Figure 1: Approximate Sampling Locations (AKRF 1997)

Attachment 2 Figure 2: Summary of Soil Analytical Results April 29, 1997 (Excel 1997)

Attachment 3	Table 3: Results of Laboratory Analyses Performed on Soil Boring Samples, 2 Ingraham Street, Brooklyn, New York, January 7, 1997 (AKRF 1997)
Attachment 4	Table E-2: Summary of Soil Analytical Results – TAL Metals, Total CN, and pH Rainbow, Brooklyn, New York, May 22, 1997 (AKRF 1997)

Table 1
Potential Areas of Concern and Transport Pathways Assessment – 2 Ingraham Street

Potential Areas of Concern	Media Impacted					COPCs														Potential Complete Pathway						
						TPH			VOCs																		
Description of Areas of Concern	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	Creek Sediment	Gasoline-Range	Diesel – Range	Heavier – Range	Petroleum Related (e.g., BTEX)	VOCs	Chlorinated VOCs	SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Overland Transport	Groundwater	Direct Discharge – Overwater	Direct Discharge – Storm/Wastewater	Discharge to Sewer/CSO	Bank Erosion	Air Releases
Equipment, products and operations associated to a church, orphanage and parochial school, umbrella manufacturer, zipper manufacturer, and metal plating and finishing (including a floor trench)	√	√	√	?	?	?	?	?	?	√	√	?	?	?	?	√	?	?	?	--	?	--	?	√	--	?
Spill	√	?	?	?	?	?	?	?	?	√	√	?	?	?	?	√	?	?	?	--	?	--	?	?	--	?
ASTs	?	?	?	?	?	?	√	?	√	?	?	?	?	?	?	?	?	?	?	--	?	--	?	?	--	?
Unlabeled drums	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	--	?	--	?	?	--	?

Notes:
√ – COPCs are/were present in areas of concern having a current or historical pathway that is determined to be complete or potentially complete.
? – There is not enough information to determine if COPC is/was present in area of concern or if pathway is complete.
-- – Current or historical pathway has been investigated and shown to be not present or incomplete.

AST – aboveground storage tank
BTEX – benzene, toluene, ethylbenzene, and xylenes
COPC – constituents of potential concern
CSO – combined sewer overflows
PAH – polycyclic aromatic hydrocarbons
PCB – polychlorinated biphenyl
SVOC – semi-volatile organic compounds
TPH – total petroleum hydrocarbons
VOC – volatile organic compounds

Q:\Jobs\110782-01_NewTownCreek\Maps\RI_RemedialInvestigation\Historic_Data_Research\Site Features Mapbook.mxd ckiblinger 5/23/2012 4:47:04 PM

- USEPA Sample Locations (Surface and Subsurface)
- Shoreline (NYC Dept. of Information Technology, 2006)
- USGS Nat'l Elev. Dataset 5-foot Contours
- Selected Site Property Boundary
- Neighboring Site Property Boundary

Outfall Class

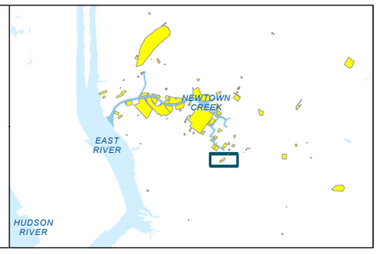
- Direct Discharge
- General
- Highway Drain
- Major Stormwater Outfall
- SPDES
- Storm Drain

NOTES:

1. Outfall Labeling: BB: Bowery Bay; NC(B/Q): Newtown Creek, Brooklyn/Queens; ST: Stormwater.
2. Outfall locations are preliminary, compiled, estimated data based on New York City Department of Environmental Protection (NYCDEP) maps and tabulated data and other resources. Many outfall locations were taken from the New York City Shoreline Survey Program: Newtown Creek Water Pollution Control Plant Drainage Area, NYCDEP, March 31, 2003. Other locations were taken from an excerpt from a similar report from 2008 (the complete report was not included in files available for review). Finally, some outfall locations were inherited from previous Anchor QEA and Newtown Creek Project work. Latitudinal and longitudinal data provided in the 2003 and 2008 NYCDEP reports were rounded to the nearest second. This resulted in potential outfall location discrepancies of up to approximately 200 feet. All outfall locations are currently under field verification.
3. Aerial Photos: New York State Division of Homeland Security and Emergency Services, 2010.
4. Site Boundaries are based on New York City parcels data.
5. Coarse topographic contours are derived from U.S. Geological Survey 10-meter data.

Feet

0 100 200 300 400



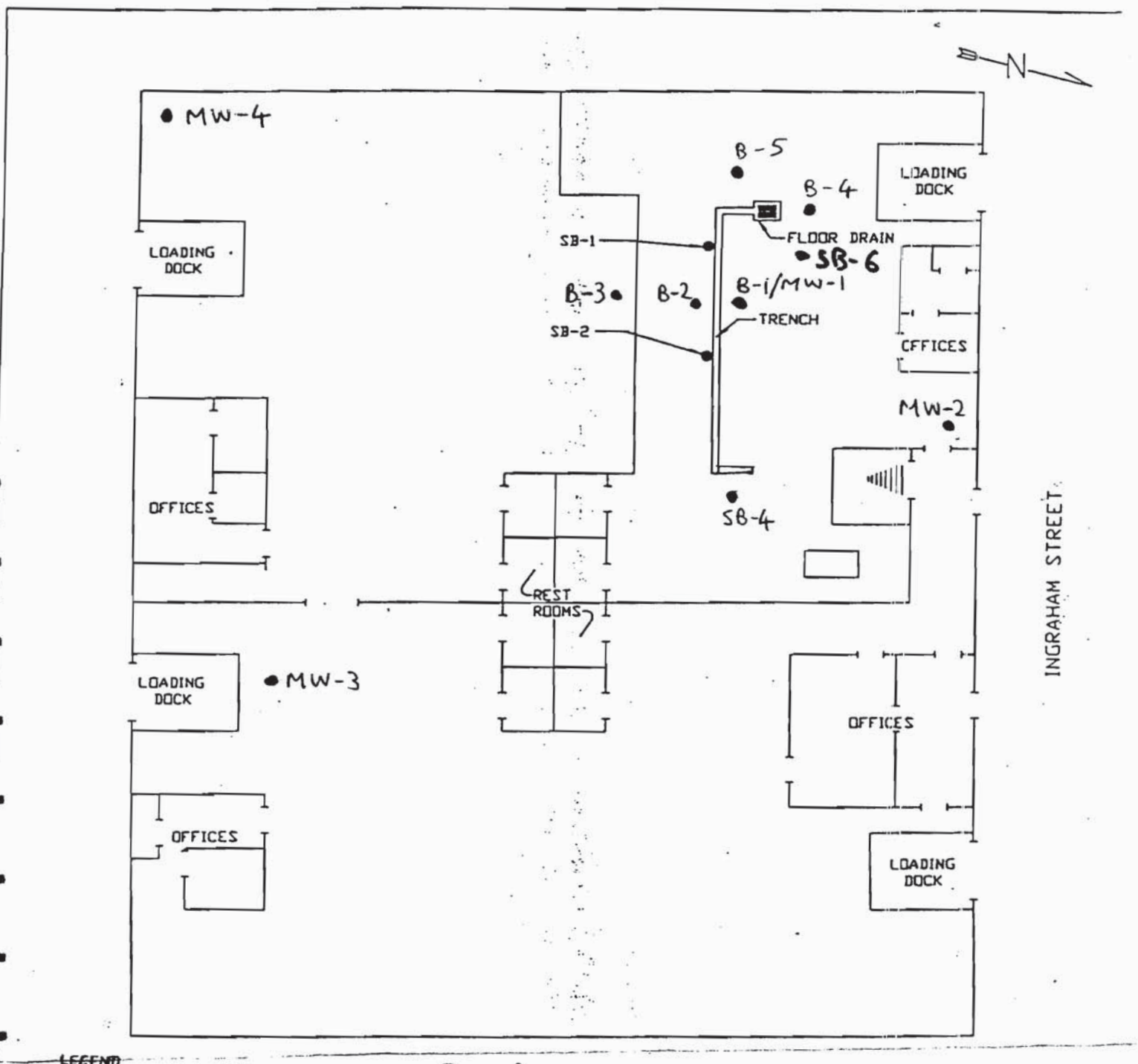
ANCHOR QEA

DRAFT

Figure 1
Site Vicinity Map
Draft Upland Site Summary: 2 Ingraham Street
Newtown Creek RI/FS

SUPPLEMENTAL ATTACHMENTS

Attachment 1



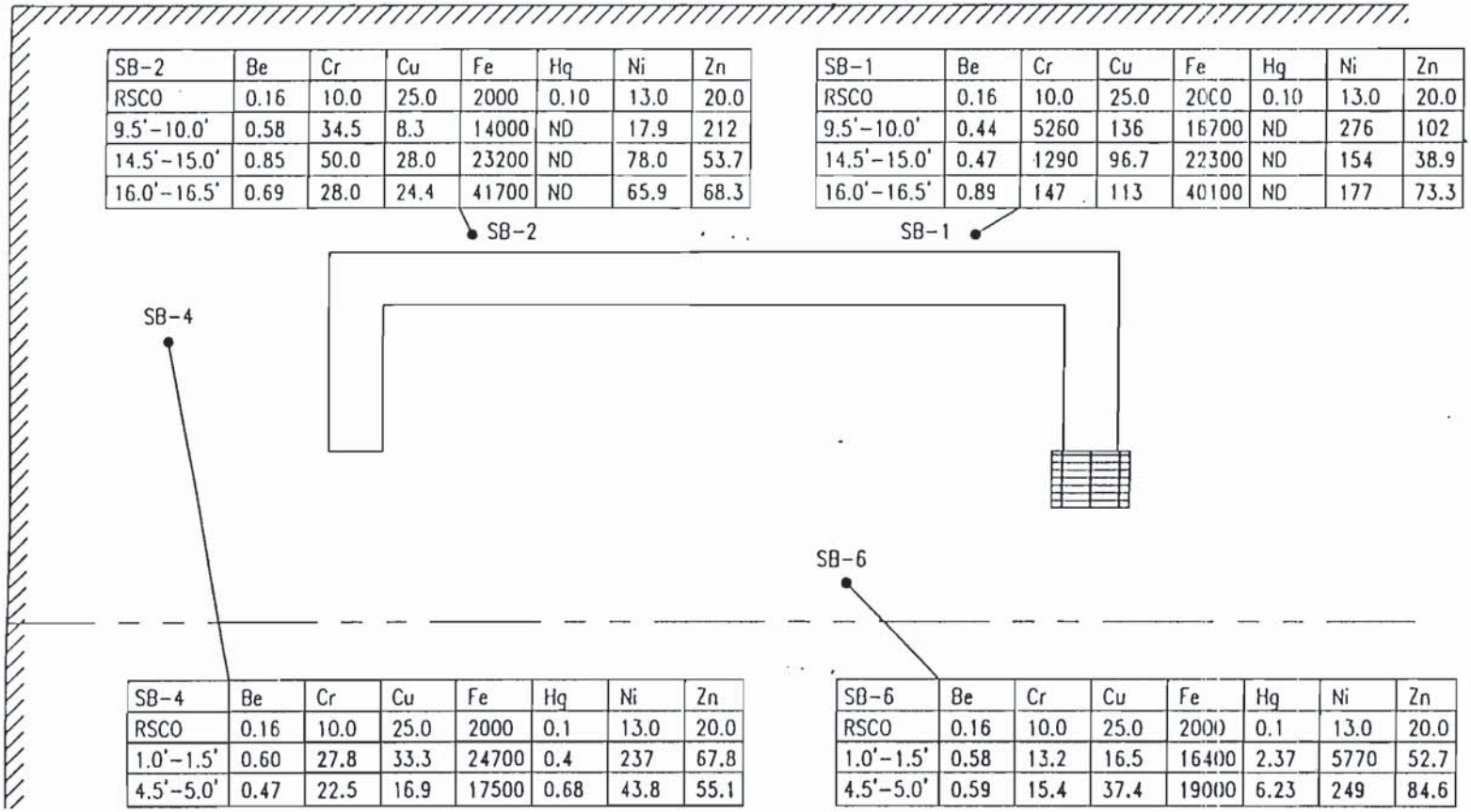
SB - Previous Soil Boring
B - AKRF Soil Boring
MW - Monitoring Well

FIGURE 1
Approximate Sampling Locations

Attachment 2

SB-2	Be	Cr	Cu	Fe	Hg	Ni	Zn
RSCO	0.16	10.0	25.0	2000	0.10	13.0	20.0
9.5'-10.0'	0.58	34.5	8.3	14000	ND	17.9	212
14.5'-15.0'	0.85	50.0	28.0	23200	ND	78.0	53.7
16.0'-16.5'	0.69	28.0	24.4	41700	ND	65.9	68.3

SB-1	Be	Cr	Cu	Fe	Hg	Ni	Zn
RSCO	0.16	10.0	25.0	2000	0.10	13.0	20.0
9.5'-10.0'	0.44	5260	136	16700	ND	276	102
14.5'-15.0'	0.47	1290	96.7	22300	ND	154	38.9
16.0'-16.5'	0.89	147	113	40100	ND	177	73.3



SB-4	Be	Cr	Cu	Fe	Hg	Ni	Zn
RSCO	0.16	10.0	25.0	2000	0.1	13.0	20.0
1.0'-1.5'	0.60	27.8	33.3	24700	0.4	237	67.8
4.5'-5.0'	0.47	22.5	16.9	17500	0.68	43.8	55.1

SB-6	Be	Cr	Cu	Fe	Hg	Ni	Zn
RSCO	0.16	10.0	25.0	2000	0.1	13.0	20.0
1.0'-1.5'	0.58	13.2	16.5	16400	2.37	5770	52.7
4.5'-5.0'	0.59	15.4	37.4	19000	6.23	249	84.6

LEGEND:

SB-2 • SOIL BORING LOCATION

BUILDING

Be Berylium
Cr Chromium
Cu Copper
Fe Iron
Hg Mercury
Ni Nickel
Zn Zinc
RSCO RECOMMENDED SOIL CLEANUP OBJECTIVE

NOTES:

1. SAMPLE DEPTH IN FEET BELOW GROUND SURFACE
2. ANALYTICAL RESULTS REPORTED IN PPM
3. BOLD TYPE INDICATES EXCEEDENCE OF THE RSCO
4. ONLY COMPOUNDS WHICH EXCEEDED RSCO ARE SHOWN

EXCEL Environmental Resources, Inc.

PROJECT:	RAINBOW POLYBAG, BROOKLYN, NY
DESCRIPTION:	FIGURE 2 SUMMARY OF SOIL ANALYTICAL RESULTS: APRIL 29, 1997

DRAWN BY:	SCALE:	DATE:
PLC	NONE	5-13-97
CHECKED BY:	REVISION:	PROJECT #
SF	0	97159

Attachment 3

From: Limited Phase II Investigation
ERD Environmental, February 1997

TABLE 3
RESULTS OF LABORATORY ANALYSES
PERFORMED ON SOIL BORING SAMPLES
2 INGRAHAM STREET
BROOKLYN, NEW YORK
JANUARY 7, 1997

	SB-2		SB-1			
Sample ID:	Trench-1'	Trench-3'	Floor Hole 1.5'	Floor Hole 3.5'	NYSDEC* Recommended	NYSDEC* Eastern USA
Laboratory ID:	9700335	9701144	9700336	9701145	Soil Cleanup Objective	Background Val
PARAMETER:						
TAL Metals						
Aluminum	467	5,160	799	4,380	SB	33,000
Antimony	ND	ND	1,880	101	SB	NA
Arsenic	2.11	5.68	5.25	6.84	7.5 or SB	3-12
Barium	63.6	102	728	183	300 or SB	15-600
Beryllium	ND	ND	ND	ND	0.16 or SB	0-1.75
Cadmium	ND	ND	ND	ND	1 or SB	0.1-1
Calcium	293	679	427	681	SB	130-35,000
Chromium	35.0	186	10,600	12,000	10 or SB	1.5-40
Cobalt	ND	2.93	2.88	6.98	30 or SB	2.5-60
Copper	71.7	79.0	1,230	1,060	25 or SB	1-50
Iron	4,320	26,100	19,800	28,000	2,000 or SB	2,000-550,000
Lead	409	121	906	362	SB	***200-500
Magnesium	102	1,130	167	1,020	SB	100-5,000
Manganese	11.3	79.7	159	186	SB	50-5,000
Mercury	ND	ND	ND	ND	0.1	0.001-0.2
Nickel	36.1	87.0	5,940	2,980	13 or SB	0.5-25
Potassium	ND	1,970	419	1,470	SB	8,500-43,000
Selenium	ND	0.876	0.510	1.21	2 or SB	0.1-3.9
Silver	0.821	ND	ND	ND	SB	NA
Sodium	623	1,150	241	303	SB	6,000-8,000
Thallium	ND	ND	ND	ND	SB	NA
Vanadium	ND	23.6	17.7	16.5	150 or SB	1-300
Zinc	ND	27.2	68	77.2	20 or SB	9-50
Total Cyanide**	30.0	2.04	1,460	1,590	**	NA
pH (units)	5.86	3.69	5.22	4.47		

Note:
- All results expressed in milligram per kilogram.
* = As outlined in Technical & Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, NYSDEC, Revised January 24, 1994. The higher of the two values is used to determine cleanup le
** = NYSDEC has no cleanup objective for cyanide; it is determined on a site-by-site basis.
*** = Average values of lead for metropolitan areas.
SB = Site Background level.
ND = Not Detected.
NA = Not Available.

Ref: j:\users\everyone\tables\96423.tb3

Attachment 4

SUMMARY OF SOIL ANALYTICAL RESULTS - TAL METALS, TOTAL CN, AND pH
RAINBOW
Brooklyn, New York
(Concentrations are given in ppm)

PARAMETER						Al	Sb	As	Be	Ca	Cr	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Na	Zn	CN	pH
EASTERN USA BACKGROUND						33,000	N/A	3-12	0-1.75	130-35,000	1.5-40	1-50	2000-550,000	200-500	100-5000	50-5000	.001-.2	.5-25	8500-43,000	6000-8000	9-50	N/A	N/A
RECOMMENDED SOIL CLEANUP OBJECTIVE						SB	SB	7.5 OR SB	.16 OR SB	SB	10 OR SB	25 OR SB	2000 OR SB	200-500	SB	SB	0.1	13 OR SB	SB	SB	20 OR SB	N/A	N/A
Excel Sample No.	Matrix Type	Lab Sample No.	Depth of Sample	Collection Date	Collection Time																		
SB-1	Soil	97-04-0615-002	9.5'-10.0'	4/29/97	13:20	10000	1.5	2.6	0.44	ND	5260	136	16700	ND	540	230	ND	276	391	163	102	ND	5.7
SB-1	Soil	97-04-0615-003	14.5'-15.0	4/29/97	13:32	6260	ND	2.5	0.47	68.9	1290	96.7	22300	ND	978	857	ND	154	756	239	38.9	ND	5.6
SB-1	Soil	97-04-0615-004	16.0'-16.5	4/29/97	13:40	8000	ND	0.9	0.89	117	147	113	40100	ND	2240	944	ND	177	1640	244	73.3		7.6
SB-2	Soil	97-04-0615-006	9.5'-10.0'	4/29/97	11:35	14300	ND	3.6	0.58	ND	34.5	8.3	14000	ND	1050	113	ND	17.9	405	214	212	ND	5.4
SB-2	Soil	97-04-0615-007	14.5'-15.0	4/29/97	11:40	15300	ND	2.5	0.85	78	50	28	23200	ND	2100	243	ND	78	1610	427	53.7	ND	5.0
SB-2	Soil	97-04-0615-008	16.0'-16.5	4/29/97	11:45	11100	ND	1.3	0.69	2630	28	24.4	41700	ND	4000	267	ND	65.9	2050	348	68.3	ND	5.6
SB-4	Soil	97-04-0615-009	1.0'-1.5'	4/29/97	14:10	8500	ND	5.5	0.6	136	27.8	33.3	24700	94.4	1910	553	0.4	237	1010	2610	67.8	ND	9.1
SB-4	Soil	97-04-0615-010	4.5'-5.0'	4/29/97	14:20	7930	ND	2.6	0.47	36	22.5	16.9	17500	57.3	1570	373	0.68	43.8	843	1180	55.1	ND	9.5
SB-6	Soil	97-04-0615-012	1.0'-1.5'	4/29/97	16:25	7670	ND	2.6	0.58	366	13.2	16.5	16400	92.3	1650	243	2.37	5770	1040	385	52.7	ND	7.6
SB-6	Soil	97-04-0615-013	4.5'-5.0'	4/29/97	16:30	7870	2.1	3.4	0.59	2270	15.4	37.4	19000	180	2000	345	6.23	249	1210	407	84.6	ND	9.5

NOTES:

Al - Aluminum
Sb - Antimony
As - Arsenic
Be - Berylium
Ca - Calcium
Cr - Chromium
Cu - Copper
Fe - Iron
Pb - Lead
Mg - Magnesium
Mn - Manganese
Hg - Mercury
Ni - Nickel
K - Potassium
Na - Sodium
Zn - Zinc
CN - Total Cyanide
N/A - Not Available
ND - Not Detected
SB - Site Background

BOLD - Exceeds Recommended Soil Cleanup Objective

From: Focused Phase II Soil Investigation
Exel Environmental Resources, Inc., May 1997

Attachment 4

SUMMARY OF SOIL ANALYTICAL RESULTS - TAL METALS, TOTAL CN, AND pH
RAINBOW
Brooklyn, New York
(Concentrations are given in ppm)

PARAMETER						Al	Sb	As	Be	Ca	Cr	Cu	Fe	Pb	Mg	Mn	Hg	Ni	K	Na	Zn	CN	pH
EASTERN USA BACKGROUND						33,000	N/A	3-12	0-1.75	130-35,000	1.5-40	1-50	2000-550,000	200-500	100-5000	50-5000	.001-.2	.5-25	8500-43,000	6000-8000	9-50	N/A	N/A
RECOMMENDED SOIL CLEANUP OBJECTIVE						SB	SB	7.5 OR SB	.16 OR SB	SB	10 OR SB	25 OR SB	2000 OR SB	200-500	SB	SB	0.1	13 OR SB	SB	SB	20 OR SB	N/A	N/A
Excel Sample No.	Matrix Type	Lab Sample No.	Depth of Sample	Collection Date	Collection Time																		
SB-1	Soil	97-04-0615-002	9.5'-10.0'	4/29/97	13:20	10000	1.5	2.6	0.44	ND	5260	136	16700	ND	540	280	ND	276	391	163	102	ND	5.7
SB-1	Soil	97-04-0615-003	14.5'-15.0	4/29/97	13:32	6260	ND	2.5	0.47	68.9	1290	96.7	22300	ND	978	867	ND	154	756	239	38.9	ND	5.6
SB-1	Soil	97-04-0615-004	16.0'-16.5	4/29/97	13:40	8000	ND	0.9	0.89	117	147	113	40100	ND	2240	944	ND	177	1640	244	73.3	?	7.6
SB-2	Soil	97-04-0615-006	9.5'-10.0'	4/29/97	11:35	14300	ND	3.6	0.58	ND	34.5	8.3	14000	ND	1050	113	ND	17.9	405	214	212	ND	5.4
SB-2	Soil	97-04-0615-007	14.5'-15.0	4/29/97	11:40	15300	ND	2.5	0.85	78	50	28	23200	ND	2100	243	ND	78	1610	427	53.7	ND	5.0
SB-2	Soil	97-04-0615-008	16.0'-16.5	4/29/97	11:45	11100	ND	1.3	0.69	2630	28	24.4	41700	ND	4000	267	ND	65.9	2050	348	68.3	ND	5.6
SB-4	Soil	97-04-0615-009	1.0'-1.5'	4/29/97	14:10	8500	ND	5.5	0.6	136	27.8	33.3	24700	94.4	1910	553	0.4	237	1010	2610	67.8	ND	9.1
SB-4	Soil	97-04-0615-010	4.5'-5.0'	4/29/97	14:20	7930	ND	2.6	0.47	36	22.5	16.9	17500	57.3	1570	370	0.68	43.8	843	1180	55.1	ND	9.5
SB-6	Soil	97-04-0615-012	1.0'-1.5'	4/29/97	16:25	7670	ND	2.6	0.58	366	13.2	16.5	16400	92.3	1650	243	2.37	5770	1040	385	52.7	ND	7.6
SB-6	Soil	97-04-0615-013	4.5'-5.0'	4/29/97	16:30	7870	2.1	3.4	0.59	2270	15.4	37.4	19000	180	2000	346	6.23	249	1210	407	84.6	ND	9.5

NOTES:

Al - Aluminum
Sb - Antimony
As - Arsenic
Be - Berylium
Ca - Calcium
Cr - Chromium
Cu - Copper
Fe - Iron
Pb - Lead
Mg - Magnesium
Mn - Manganese
Hg - Mercury
Ni - Nickel
K - Potassium
Na - Sodium
Zn - Zinc
CN - Total Cyanide
N/A - Not Available
ND - Not Detected
SB - Site Background

BOLD - Exceeds Recommended Soil Cleanup Objective

MAY 22 '97