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Consolidated Edison Company of New York, Inc.

Dry Weather Discharge Evaluation Work Plan

Krasdale Foods Inc. Leasehold

Hunts Point Former Manufactured Gas Plant
Bronx, New York

January 2011 (Revised August 2011)

ARCADIS

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I, Margaret Carrillo-Sheridan, P.E., certify that that I am currently a New York State-registered professional engineer and that this Dry Weather Discharge Evaluation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

8/26/2011

Margaret Carrillo-Sheridan, P.E.
Vice President

Prepared for:
Consolidated Edison Company of New York, Inc.

Prepared by:
ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.0017

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Figures

Appendices

Acronyms and Abbreviations

AKRF	AKRF, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CCTV	closed-circuit television
Con Edison	Consolidated Edison Company of New York, Inc.
cfs	cubic feet per second
cy	cubic yard(s)
Earth Repair	Earth Repair, LLC
GPR	ground-penetrating radar
Krasdale	Krasdale Foods, Inc.
MGP	manufactured gas plant
NYCEDC	New York City Economic Development Corporation
NYSDEC	New York State Department of Environmental Conservation
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
Savin	Savin Engineers, PC
SPDES	State Pollution Discharge Elimination System
VCA	Voluntary Cleanup Agreement
VCP	vitrified clay pipe
Work Plan	Dry Weather Discharge Evaluation Work Plan

1. Introduction

This Dry Weather Discharge Evaluation Work Plan (Work Plan) has been developed on behalf of Consolidated Edison Company of New York, Inc. (Con Edison) to prevent discharge of manufactured gas plant (MGP)-impacted water from a storm sewer located on the Krasdale Foods, Inc. portion (Krasdale property) of the Hunts Point former MGP site ("the site"). This Work Plan has been prepared in accordance with the Voluntary Cleanup Agreement (VCA) between the New York State Department of Environmental Conservation (NYSDEC) and Con Edison. The VCA index number for the Hunts Point Former MGP is D2-0003-02-03.

Upon NYSDEC approval of this Work Plan, Con Edison will implement this Work Plan as described herein.

1.1 Site History and Background

The Hunts Point former MGP was operated by Con Edison from late 1926 to 1962. The approximate extent of the Hunts Point former MGP is shown on Figure 1. Demolition of the plant was completed in early 1968. That same year, Con Edison sold the majority of the 205-acre site to the City of New York for use as a wholesale cooperative food market. Portions of the former MGP have been divided into parcels (A through F) for purposes of site cleanup, and have or will be investigated and remediated separately by others. Various investigations and remediation completed at the Hunt's Point Former MGP site to date have documented petroleum and MGP-related residuals—including coal tars, oils, and purifier wastes—as well as constituents associated with these residuals, such as benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds; polycyclic aromatic hydrocarbons (PAHs); and inorganic constituents, such as cyanides, on the former MGP property. A detailed summary of previous investigations and remediation is included in the Off-Site Characterization Work Plan (ARCADIS 2010).

The Krasdale portion of the site is located to the south of Parcel D, as shown on Figure 2. The property is currently used as a warehouse for shipping and receiving of food products.

For technical and administrative reasons, NYSDEC divided the Hunts Point Former MGP site (VCP Site No. V00554) into the following operable units (OUs):

- OU-1 - Krasdale Parcel
- OU-2 - Discharge Pipe (located on the Krasdale property)

- OU-3 - Halleck Street
- OU-4 - National Foods Parcel
- OU-5 - Sediments
- OU-6 - MTS

As shown on Figure 3, OU-2 (which is the focus of this Work Plan) includes the storm sewer pipe that discharges to outfall OF-1 and a six-foot wide pathway centered along the alignment of the storm sewer pipe.

The New York City Economic Development Corporation (NYCEDC) is currently developing a drainage plan for the Hunts Point Food Distribution Center, including the Krasdale property. As part of the work, AKRF, Inc. (AKRF) completed an evaluation of the storm sewers located on the Krasdale property in June 2010. AKRF's evaluation included video inspection of the storm sewers using closed-circuit television (CCTV), as well as sampling and analysis of water samples collected during a dry weather condition from one catch basin and one outfall (Inlet #120 and OF-1, respectively). In general, the findings indicated that the northernmost storm sewer (subject storm sewer) is in poor physical condition, and that the water found within the subject storm sewer during dry weather conditions contained chemical constituents similar to those that have been identified in groundwater at adjacent Parcel D (see Section 2.1.1). A more detailed description of the inspection findings are described in Section 2 below.

1.2 Objectives

The objective of this Work Plan is to evaluate the subject storm sewer pipe within OU-2 on the Krasdale property and provide a recommended approach to prevent discharge of MGP-impacted water from the sewer pipe into the adjacent Bronx River.

The NYSDEC, in its letter to Con Edison dated July 12, 2011, identified the following remedial action objectives (RAOs) for OU-2:

1. Preventing the continuing discharge of contaminants to surface water (i.e., the Bronx River).

2. Removing the source of groundwater or surface water contamination, to the extent feasible.

3. Preventing migration of contaminants that would result in groundwater or surface water contamination.

1.3 Property Location and Description

The Krasdale property is located on the northeastern portion of the Hunts Point former MGP in the Borough of Bronx, New York City, Bronx County, New York (Figure 1). The Krasdale property is an approximately 11-acre tract of land on the eastern portion of Hunts Point, a peninsula at the confluence of the Bronx and East Rivers. The Krasdale property is bounded by Food Center Drive to the west, Parcel D to the north, Parcel C to the south, and the Bronx River to the east, and includes Parcel F.

Based on survey information provided by NYCEDC, topography in the area of the subject storm sewer is relatively flat (less than 1 percent), and slopes east, towards the Bronx River. As shown on Figure 3, the drainage area associated with the subject storm sewer is the parking lot area located north of the warehouse, and is primarily an impervious surface. The remainder of the property is also covered by impervious surfaces (generally asphalt and warehouse buildings). Precipitation that falls within the subject storm sewer drainage area is generally conveyed via overland flow to catch basins that discharge to the subject storm sewer and ultimately to the Bronx River via outfall OF-1. The following peak design stormwater flows were calculated based on visually estimated storm catch areas, assumed rainfall intensities, and an assumed time of concentration for the site: 2-year storm flow of approximately 7 cubic feet per second (cfs) and a 10-year storm flow of approximately 9 cfs.

Precipitation that falls on the warehouse and remaining parking areas is collected and conveyed independently of the subject storm sewer, and is not part of this evaluation.

Based on observations during previous on-site investigations of nearby Parcels D and F (LMS 2005; HDR/LMS 2007), the soil stratigraphy varies and is influenced by historic filling activities. Historic fill material—such as coal, slag, ash, and wood intermingled with sand and gravel, and dredged sediment—is present in the surface and shallow overburden (in the vicinity of the Krasdale property) to varying depths. Underlying the fill unit is a mixture of clayey silt, sand, and gravel, which has been described as poorly sorted outwash deposits. A silty clay unit, described as a "meadowmat," underlies the outwash deposits. The water table generally occurs in the shallow subsurface at depths ranging from approximately 2 to 10 feet below ground surface (bgs). In general, groundwater flow is directed from west to east toward the Bronx River. However, groundwater flow may be influenced by tidal conditions within the adjacent river and the numerous subsurface utilities in the area.

1.4 Subject Storm Sewer Location and Description

The subject storm sewer is located along the northern boundary of the Krasdale property, as shown on Figures 2 and 3. The storm sewer is approximately 420 feet long and includes four catch basins (Inlet #113, #112, #111, and #120) along its length, which drain surface run-off from the vicinity asphalt parking area (catch shed of approximately 1.9 acres). The storm sewer is constructed of a combination of vitrified clay pipe (VCP) and reinforced concrete pipe. The diameter of the pipe ranges from approximately 12 to 16 inches. The storm sewer drains at outfall OF-1 into the Bronx River.

1.5 Work Plan Organization

The remaining portions of this Work Plan are organized into the following sections:

- *Section 2 – Summary of Investigation Activities*: This section provides a summary of previous remedial investigations and actions completed at adjacent parcels, as well as assessments of the subject storm sewer completed to date.

- *Section 3 – Evaluation of Pipe Rehabilitation Alternatives*: This section presents an evaluation of appropriate technologies for rehabilitating the storm sewer, and describes the recommended alternative.

- *Section 4 – Implementation Schedule:* This section presents a tentative schedule for implementing f a pre-design investigation (PDI) and construction.

- *Section 5 – References* – This section presents the literature cited in this Work Plan.

2. Summary of Investigation Activities

2.1 Summary of Previous Investigations

Various investigations and remediation of Parcels A through F have been completed and are documented in several reports. The subsections below summarize the investigations, findings, and various remedial efforts completed in connection with Parcels D and F based on the following reports:

- Hunts Point Cooperative Market Redevelopment Plan, Investigative Report for Parcel D, Bronx, New York (LMS 2005)

- Hunts Point Food Distribution Center Redevelopment Plan, Site Investigative Report for Parcel F, Bronx, New York, Final (HDR/LMS 2007)

Figure 2 shows the approximate locations of the observed impacts on these parcels.

2.1.1 Parcel D

Parcel D is currently undeveloped. A bulkhead was constructed sometime between 1966 and 1974, and a 100-foot-wide area was filled between the shoreline and the bulkhead.

Two subsurface investigations were conducted in 1997 and 2004 on Parcel D. The 1997 investigation consisted of the completion of four soil borings to depths of 6 to 10 feet bgs and the installation of one monitoring well screened across the water table. The 2004 investigation consisted of the completion of 47 soil borings and 7 temporary piezometers, collection and analysis of soil and groundwater samples, as well as the completion of a ground-penetrating radar (GPR) survey.

An area of purifier waste was found on the ground surface and extended to a maximum depth of 14 feet bgs (upper 4 feet were described as “spongy”) in an approximately 350-foot by 450-foot area to the east of the center of the parcel. Small pockets of coal tar were noted and were generally observed as surface boils (upper 1 to 2 feet). In addition, an area of coal tar from 5 to 10 feet bgs was observed on the western portion of the site. Coal tar was also noted in two wells located adjacent to the western boundary of the parcel (upgradient).

Petroleum-impacted material was noted from 5 to 10 feet bgs across portions of the parcel. Soil and groundwater samples contained constituents associated with petroleum and MGP-related residuals (e.g., BTEX, PAHs, and cyanides), as well as other constituents, including phenols, carbon disulfide, styrene, 4-methyl-2-pentanone, polychlorinated biphenyls (PCBs), and inorganic constituents (such as metals, sulfur, and ammonia).

During the construction of the Iroquois Pipeline, a gas-transmission line that runs underneath Food Center Drive, coal tar mixed with some purifier waste was noted in a consistent depth layer (4 to 6 feet bgs) throughout the pipeline trench. The material was noted to extend beyond the extent of the trench. Fill material on the western portion was primarily noted as slag, ash, cinders, wood, and brick, whereas the fill in the eastern portion was mainly described as ash, cinders, wood, and brick. Impacts extended beyond the 4-foot-wide pipeline trench in east/west directions.

An Alternative Analysis Report for Parcel D is being developed by others.

2.1.2 Parcel F

Parcel F is currently undeveloped, vegetated land. A subsurface investigation was conducted at Parcel F in 2005. The investigation consisted of the completion of 24 soil borings to a maximum depth of 5 feet below the water table, the bottom of the purifier waste or the clay layer; five temporary piezometers screened across the water table; and eight soil gas points, as well as the completion of a GPR survey and collection and analysis of soil, groundwater, and soil gas samples.

Soil and groundwater samples contained constituents associated with petroleum and MGP-related residuals (e.g., BTEX, PAHs, and cyanides), as well as other constituents, including phenols, carbon disulfide, PCBs, and inorganic constituents (such as metals, sulfur, and ammonia).

Purifier waste covers a majority of the parcel, extending to depths up to 16 feet bgs. Deposits were up to 10 feet thick, separated with up to 3 feet of fill. The volume of purifier waste on the parcel was estimated to be 17,900 cubic yards (cy)—1,800 cy above water table, 16,100 cy below water table. Relatively smaller areas (5 cy) of coal tar impacts were noted and were generally observed as surface boils. In addition, coal tar and purifier waste was observed from 4 to 6 feet bgs in a 100-foot portion of the trench adjacent to Parcel F during construction of the Iroquois Pipeline.

Additional investigation around the perimeter of the parcel is planned by others.

2.2 Evaluation of Storm Sewer and Dry Weather Discharge (AKRF, June 2010)

AKRF, on behalf of NYCEDC, inspected the storm sewers in June 2010 to support development of a drainage plan for the food-distribution portion of the Hunts Point peninsula. The inspection included direct observation of the storm sewer structures (e.g., catch basins, outfalls) and CCTV video observation of the storm sewers pipes from the outfall to the first upgradient catch basin.

Additionally, during AKRF's visual inspection in September 2010, a dry weather discharge was observed at the subject storm sewer (Zias 2010).Consequently, AKRF collected samples at the outfall (OF-1) and first upgradient catch basin (Inlet #120). The methods and results of the inspection and sampling related to the subject storm sewer pipe are described in the sections below.

2.2.1 Storm Sewer Physical Inspections

Earth Repair, LLC (Earth Repair), under direction by AKRF, inspected the storm sewer on June 29, 2010. The inspection was performed using CCTV from the outfall to the first upgradient catch basin (Inlet #120). Significant observations are as follows:

- A number of pipe joint failures
- Frequent evidence of pipe invert erosion
- A number of locations where the pipe appears to be eroded

A copy of the CCTV inspection report is included as Appendix A.

2.2.2 Dry Weather Discharge Sampling

AKRF collected water samples from the storm sewer on September 3, 2010, to assess water quality. A total of two water samples were collected—one from a catch basin (Inlet #120) and one from the outfall (OF-1). Carbon disulfide, cyanide, naphthalene, and metals, as well as several semivolatile organic compounds (including dibenzofuran, acetophenone, carbazole, fluorene, phenanthrene, and phenols) were detected in the samples. The pH of the dry weather water samples collected from the

catch basin and outfall were 2.0 and 2.1, respectively. The laboratory analytical results are provided as Appendix B.

2.3 Evaluation of Storm Sewer and Dry Weather Discharge (ARCADIS, December 2010)

ARCADIS, on behalf of Con Edison, completed a video assessment in December 2010 of portions of the subject storm sewer not previously inspected by AKRF. In addition, ARCADIS verified the information collected as part of the previous inspection completed by AKRF.

Savin Engineers, PC (Savin) under direction by ARCADIS, inspected the subject storm sewer on December 14, 2010. The inspection was performed using CCTV along the entire length of the pipe from the outfall (OF-1) to the last catch basin (Inlet #113). However, certain portions of the storm sewer were inaccessible due to obstructions in the pipe. Significant observations are as follows:

- Evidence of significant erosion to the pipe (note predominately below water line)
- Several blockages due to debris in the pipe
- Evidence of a breach in the pipe structure
- A strong odor related to the presence of hydrogen sulfide
- Blue-green discoloration of concrete at numerous locations
- Groundwater infiltration was noted at several locations throughout the inspection

CCTV Inspection Logs are provided as Appendix C.

At the time of the inspection, water was observed flowing through the storm sewer. The main contributor to water flow in the storm sewer appeared to be infiltrating groundwater, as there had not been a significant precipitation event in the past 24 hours. The flow rate was visually estimated to be less than 2 gallons per minute. Based on the information gathered by ARCADIS during the Savin inspection, the existing storm sewer is no longer in functional condition, exhibiting major structural defects at multiple locations, including open joints and erosion of the pipe concrete (such that eroded portions of the storm sewer exhibit exposed reinforcing steel). Groundwater infiltration and voids in the pipe are major issues affecting the storm sewer's ability to

convey surface runoff related to storm events to the outfall. The existing storm sewer is considered to be at the end of its service life and requires rehabilitation.

2.4 Potential Cause of the Dry Weather Discharge

The potential cause of the dry weather discharge is likely attributed to groundwater infiltrating into the storm sewer system. Based on the CCTV inspections, the storm sewer structures (catch basins and piping) show significant erosion of the concrete material and separation at the pipe joints, which provides a means for groundwater infiltration. As previously mentioned, Con Edison is currently developing a separate Site Characterization Work Plan to assess the potential source(s) of constituents into the storm sewer system.

3. Evaluation of Pipe Rehabilitation Measures

3.1 Introduction

As discussed in Section 1, the objective of this Work Plan is to evaluate potential rehabilitation measures for the subject storm sewer on the Krasdale property and provide a recommended approach to prevent discharge of MGP-impacted water from the sewer pipe into the adjacent Bronx River. Based on review of previous investigation data and the December 2010 survey activities, the following potential rehabilitation measures have been identified for further evaluation:

- Diverting groundwater away from the subject storm sewer
- Grouting the exterior of the subject storm sewer
- Surface drainage improvements with existing subject storm sewer closure
- Slip-lining of the existing subject storm sewer
- Full subject storm sewer replacement in the same alignment

Each of the potential rehabilitation measures are described and evaluated below.

3.2 Evaluation of Potential Rehabilitation Measures

3.2.1 Rehabilitation Measures Not Retained

Two dry weather flow control measures (the first two measures listed above) were screened for potential implementation at OU-2 and not retained for further evaluation as summarized below.

Diverting Groundwater Away From Subject Storm Sewer

This measure would consist of diverting groundwater flow around the existing pipe, into a separate groundwater collection and conveyance system. Collected groundwater would be treated and discharged back into the existing sewer. This technology was not retained because of the technical difficulty of maintaining the hydraulic controls for the life of the stormwater conveyance system, as well as the long-term operation, maintenance, and related costs associated with treating and discharging the groundwater following collection.

Grouting the Exterior of the Subject Storm Sewer

This measure consists of grouting the exterior of the subject storm sewer pipe and associated bedding to create a low permeability zone around the sewer that would limit the flow of groundwater into the bedding or sewer. This technology was not retained because of the implementation challenges associated with creating a competent (i.e., no voids or cracks) 360-degree low permeability zone around the entire storm sewer, and maintaining that low permeability zone for the life of the conveyance system. Options for grouting around the storm sewer included jet grouting (which is a soil-replacement technology) and injecting a polyurethane grout (which would expand to fill the pore space around the storm sewer). In addition, verification that the entire pipeline was completely sealed would be difficult to accomplish during construction.

3.2.2 Rehabilitation Measures Retained

The following rehabilitation measures were retained for further evaluation:

1. Surface drainage improvements with existing subject storm sewer closure
2. Slip-lining of the existing subject storm sewer
3. Full subject storm sewer replacement in the same alignment

The potential rehabilitation measures were evaluated based on ease of implementation, effectiveness, and relative construction cost.

3.2.2.1 Rehabilitation Measure 1 – Surface Drainage Improvements with Existing Subject Storm Sewer Closure

This rehabilitation measure consists of in-place closure of the subject storm sewer and installation of a surface conveyance system to manage stormwater in this area of the Krasdale property. The storm sewer would be closed in place by grouting the sewer pipe and catch basins (Figure 3). A treatability test would be required to assess and select an appropriate grout mixture. The grout mixture would be designed to be compatible with the existing site conditions, subsurface materials (such as possible purifier waste), and associated constituents. The filling and abandonment of the existing storm sewer pipe would prevent groundwater infiltration and, therefore, eliminate the potential for dry weather discharge to the Bronx River.

A new conveyance system, consisting of a drainage swale, would be installed in the vicinity of the existing subject storm sewer or further to the north, between the existing concrete curb and fence line. Stormwater runoff would flow overland to the swale, which would then convey the stormwater to a discharge location at the Bronx River,

which would be determined as part of the design. It is currently anticipated that the swale would be constructed of asphalt and covered with steel grating. It's currently anticipated that the swale would be approximately 5 feet wide and 1 foot deep, with 3:1 side slopes. However, the final dimensions of the swale would be determined based on a hydraulic assessment as part of a detailed design. If the existing concrete curb has to be removed, then a wheel stop would be designed to withstand the trailers backing into it without being moved or damaged.

This rehabilitation measure would not require substantial excavation. Prior to closing the storm sewer, the existing sewer would need to be pressure washed to remove accumulated sediments. Wash water generated during the pressure-washing operations would be collected and managed for off-site treatment and disposal. Because only limited excavation would be required, the construction duration would be relatively short (less than two months), and the associated disruption to the property occupants would be very limited.

Implementability

This rehabilitation measure would be both technically and administratively implementable. Equipment and materials necessary to close the existing storm sewer and install a drainage swale are readily available. Contractors are also available to perform these activities (i.e., no highly specialized equipment, materials, or personnel would be required). Local, state, and federal permitting requirements would be reviewed to determine whether any permits are required to complete the work.

One of the challenges of this rehabilitation measure would be locating and installing a swale that would not be damaged by heavy truck traffic or otherwise impede the current property operations. This challenge could be addressed by upfront planning and discussions with the property owner to understand overall site operations and areas available for installation of the swale. The drainage swale would also be designed to include steel grating and withstand H-20 loading, as appropriate.

Effectiveness

Based on the size of the drainage area (less than 2 acres), managing the stormwater runoff via a swale and closing the existing subject storm sewer would address the discharge of MGP-impacted water from the sewer into the adjacent Bronx River. By managing the stormwater runoff via a surface water conveyance, a physical separation is achieved between the groundwater and stormwater. In addition, by grouting-in-place

the existing subject storm sewer system, the current dry weather conveyance would be permanently eliminated.

Cost

The estimated cost to implement this rehabilitation measure is approximately $223,000. Appendix D presents a detailed breakdown of the estimated cost.

3.2.2.2 Rehabilitation Measure 2 – Slip-Lining the Existing Subject Storm Sewer

This rehabilitation measure consists of installing a new pipe within the existing subject storm sewer. Slip-lining is considered an "in-pipe" rehabilitation solution; a new pipe of smaller diameter is either pushed or pulled through the existing pipe. The new pipe is installed from a launching pit that is excavated around the existing pipe at either a catch basin, or other appropriate location along the pipeline. Once the launching pit is excavated, the existing pipe is cut and removed to allow for new pipe sections to be lowered into place and installed in the existing pipe. Prior to selection of the pipe materials, compatibility with the site-specific constituents detected in soil and groundwater would need to be evaluated.

Each new pipe section is jointed to the next section in a launching pit and then pushed into the existing pipe. When the installation of the slip-lined pipe is complete, the ends of the pipe are grouted into place in new catch basins. A vent tube is then installed to allow the air to escape when grout is being pumped into the annular space between the existing and new pipes. After the grout installation is complete, the vent tube is then filled from the downstream end and capped when full.

Because the existing pipe is used as a carrier pipe, little excavation and subsequent handling of impacted soil is required. However, excavation will be required for installation of the launching pit, as well as for excavation of the new catch basins. In addition, the carrier pipe must be cleaned prior to installation of the new pipe, and must be free of flowing water during installation.

Assuming the entire pipe could be used as the carrier pipe, the construction duration would likely be less than two months. In addition, temporary disruption to certain operations at the Krasdale property may occur in the form of reduced parking area for the trucks on site, as a portion of the property will be occupied by the materials and equipment necessary to conduct the slip-lining operations.

Implementability

This rehabilitation measure would be both technically and administratively implementable. Equipment and materials necessary to slip line the existing pipe are readily available. Rehabilitation contractors are also available to perform this measure; however, specialized equipment is needed to launch the pipe and perform the joint fusing and grouting of the annular space. Local, state, and federal permitting requirements would be reviewed to determine whether any permits are required to complete the work.

Challenges associated with implementing this rehabilitation measure include cleaning the existing debris from the pipeline, installing grout in the annular space between the existing pipe and slip-lined pipe, installing the launching pit, and managing infiltration of groundwater into the sewer during the slip-lining operations. Infiltration of groundwater during filling of the annular space could impact the long-term effectiveness of the grout. In addition, selected pipe materials and grout would need to be compatible with the site-specific constituents.

In addition, certain sections of the existing storm sewer may require removal due to blockages or historic shifting of the pipe due to settlement. Pre-design investigation of the existing sewer to confirm the alignment and diameter of the storm sewer would be required to fully assess which areas of the sewer may or may not be amenable to slip lining.

Effectiveness

Installing a new pipe within the existing pipe would address the dry weather discharge at this site by providing a physical barrier between the groundwater and the pipe. The pipe material and grout would need to be selected in consideration of the MGP-related impacts on the site (purifier waste), and be compatible with the groundwater at the property to provide long-term effectiveness.

Cost

The estimated cost to implement this rehabilitation measure is approximately $490,000. Appendix D presents a detailed breakdown of the estimated cost.

3.2.2.3 Rehabilitation Measure 3 – Full Subject Storm Sewer Replacement in the Same Alignment

This rehabilitation measure consists of installing a new storm sewer as a replacement of the existing subject storm sewer in the same alignment, including the replacement of the existing catch basins. Activities required to install the new storm sewer would include:

- Saw-cutting the asphalt pavement along the OU-2 limits.
- Excavate asphalt pavement and gravel pipe bedding, stockpile separately and manage as dictated by the results of the soil boring program.
- Excavating subsurface soils to the top of the water table or deeper, as necessary and/or feasible, to remove the existing storm sewer pipe and catch basins, and any potential MGP source materials, as determined based on the PDI program results.
- Installing new catch basins.
- Backfill the trench with a layer of flowable fill (material to be determined based on compatibility testing), which will act as a solid, non-porous layer that will limit the migration of contaminated groundwater along the pipe alignment.
- Install a new storm drainage pipe on the flowable fill followed by the placement of additional flowable fill to the spring line (half the height) of the pipe.
- Backfill the remaining area with structural fill up to near the top of trench.
- Restore the surface of the backfilled trench to match pre-construction conditions (i.e., asphalt pavement).

Sidewall excavation support may be needed (such as trench boxes or other type of engineered support system). Depending on the depth to groundwater during the new sewer installation, dewatering of the trench may be required

A pre-design investigation would be conducted to determine soil conditions within OU-2 and the depth to groundwater. Sidewall excavation support requirements would be determined during the design phase.

Compatibility with the site-specific constituents detected in soil and groundwater would need to be evaluated and confirmed prior to selection of pipe materials. A treatability study may be performed during the design phase to confirm pipe compatibility and/or flowable fill compatibility.

The excavated materials and debris generated during the sewer replacement activities would be managed for off-site treatment and disposal. The handling and disposal of the excavated material, as well as the trench support requirements, add substantial cost to this alternative.

The construction duration for this rehabilitation measure would likely require up to three months to complete. In addition, temporary disruption to certain operations at the Krasdale property may occur in the form of reduced parking area for the trucks on site, as a portion of the property will be occupied by pipe and catch basin materials, as well as excavated soil stockpiles, backfill materials, and shoring equipment.

Implementability

This rehabilitation measure would be both technically and administratively implementable. Equipment and materials necessary to remove the existing sewer and catch basins, followed by in-kind replacement, are readily available. Rehabilitation contractors are also available to perform these activities (i.e., no highly specialized equipment, materials, or personnel would be required). Local, state, and federal permitting requirements would be reviewed to determine whether any permits are required to complete the work.

Challenges associated with this alternative include:

- Generation and disposal of potentially impacted soils and groundwater
- Sidewall support during construction
- Increased potential contact time for construction personnel working in the open trench with soils potentially impacted by MGP-related residuals (such as purifier waste)
- Installation of the replacement catch basins

- Crossing active/abandoned subsurface utilities and buried subsurface structure foundations

- Backfilling the trench and to the pipe spring line with flowable fill (placement of flowable fill can cause pipe float and/or shifting.

- Sequencing and scheduling the construction activities such that they do not impact the property occupant's daily activities.

Effectiveness

Removing and replacing the current subject storm sewer system would address the dry weather discharge at this site by providing a physical barrier between the groundwater and the pipe. The pipe material and flowable fill would need to be selected in consideration of the likely MGP-related impacts on the site (purifier waste), and be compatible with the groundwater at the property to provide long-term effectiveness.

Cost

The estimated cost to implement this rehabilitation measure is approximately $757,000. Appendix D presents a detailed breakdown of the estimated cost.

3.3 Recommended Alternative

The three rehabilitation measures retained for evaluation in this section would each effectively prevent the infiltration of constituents detected in soil and groundwater and discharge into the Bronx River (RAO #1). Rehabilitation Measure 3 would achieve each of the RAOs presented in Section 1.2. Continued discharge of impacted groundwater to the Bronx River would be prevented (RAO #1) through the installation of a new storm sewer pipe. By removing the existing failed storm sewer and any pipe bedding material, the source of surface water impacts would be removed to the extent feasible within OU-2 (RAO #2) and the use of flowable fill as pipe bedding material would mitigate the potential migration of dissolved phase impacts within OU-2 (RAO #3).

3.4 Pre-Design Investigation

A PDI program will be completed prior to the implementation of the storm sewer rehabilitation activities. The PDI activities will consist of the following:

- Completion of 10 soil borings (i.e., SB-01 through SB-10) in the general vicinity of OU-2 to evaluate the presence of impacts near the boundary of Parcel D and the Krasdale property and along the storm sewer pipeline.

- Installation of three monitoring wells (i.e., one upgradient, one midpoint, and one downgradient) in the soil borings completed near the storm sewer and collection of groundwater samples from the wells.

- Collection of water samples from the storm sewer catch basins and outfall if a dry weather discharge is observed.

The PDI soil boring locations are shown on Figure 4. All PDI activities will be conducted in accordance with the NYSDEC-approved Site Characterization Work Plan for the Krasdale Foods Inc. Leasehold (ARCADIS, February 2011).

The results of the PDI program, among other things, will be used to determine the criteria for and extent of any necessary source removal efforts during the sewer replacement. If the PDI results indicate the presence and extent of source materials within OU-2 at a depth that Con Edison believes warrants further evaluation of remedial measures (other than excavation), Con Edison will notify the NYSDEC as soon as practicable to initiate discussions regarding potential alternate approaches to address the source materials within OU-2.

4. Implementation Schedule

A preliminary schedule for implementing the recommended rehabilitation measure is presented on Figure 5. The schedule shows phases, major work tasks, and estimated durations (in work days) to support implementation of the recommended rehabilitation measure. Achieving these milestones is contingent upon NYSDEC review and approval of relevant plans, owner's approval of the relevant plans among the other contingencies, site access and permits, availability of materials, weather-related considerations, and changes in the scope of this Work Plan.

5. References

ARCADIS. 2010. *Off-Site Characterization Work Plan, Hunts Point Former Manufactured Gas Plant*. November.

ARCADIS. 2011. *Site Characterization Work Plan – Krasdale Foods Inc., Leasehold*. February.

Lawler Matusky and Skelley Engineers, LLP (LMS). 2005. *Hunts Point Cooperative Market Redevelopment Plan, Investigative Report for Parcel D*, Bronx, New York.

HDR/Lawler Matusky and Skelley Engineers, LLP (HDR/LMS). 2007. *Hunts Point Food Distribution Center Redevelopment Plan*, *Site Investigative Report* for Parcel F, Bronx, New York, Final.

Zias, Kay. 2010. Personal communication. New York City Economic Development Corporation. September 21.

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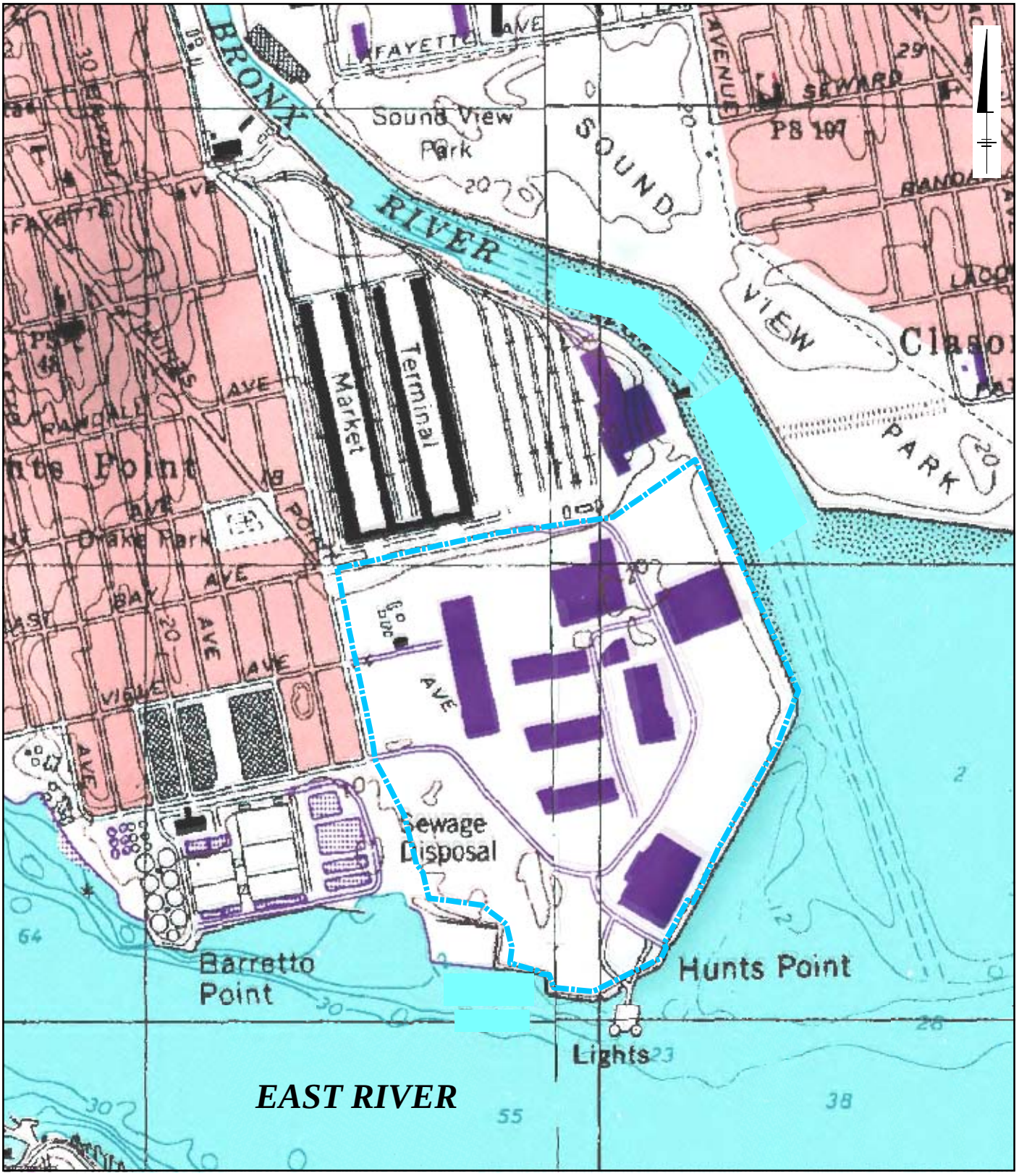
Figures



LEGEND:

SITE BOUNDARY
(APPROXIMATE EXTENT OF FORMER MGP)

0 1,000 2,000 Feet

GRAPHIC SCALE

NOTE:

1. 1979 FLUSHING, N.Y. AND CENTRAL PARK, N.Y. - N.J. USGS QUADRANGLE.

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
HUNTS POINT FORMER MANUFACTURED GAS PLANT

DRY WEATHER DISHARGE EVALUATION WORK PLAN

SITE LOCATION MAP

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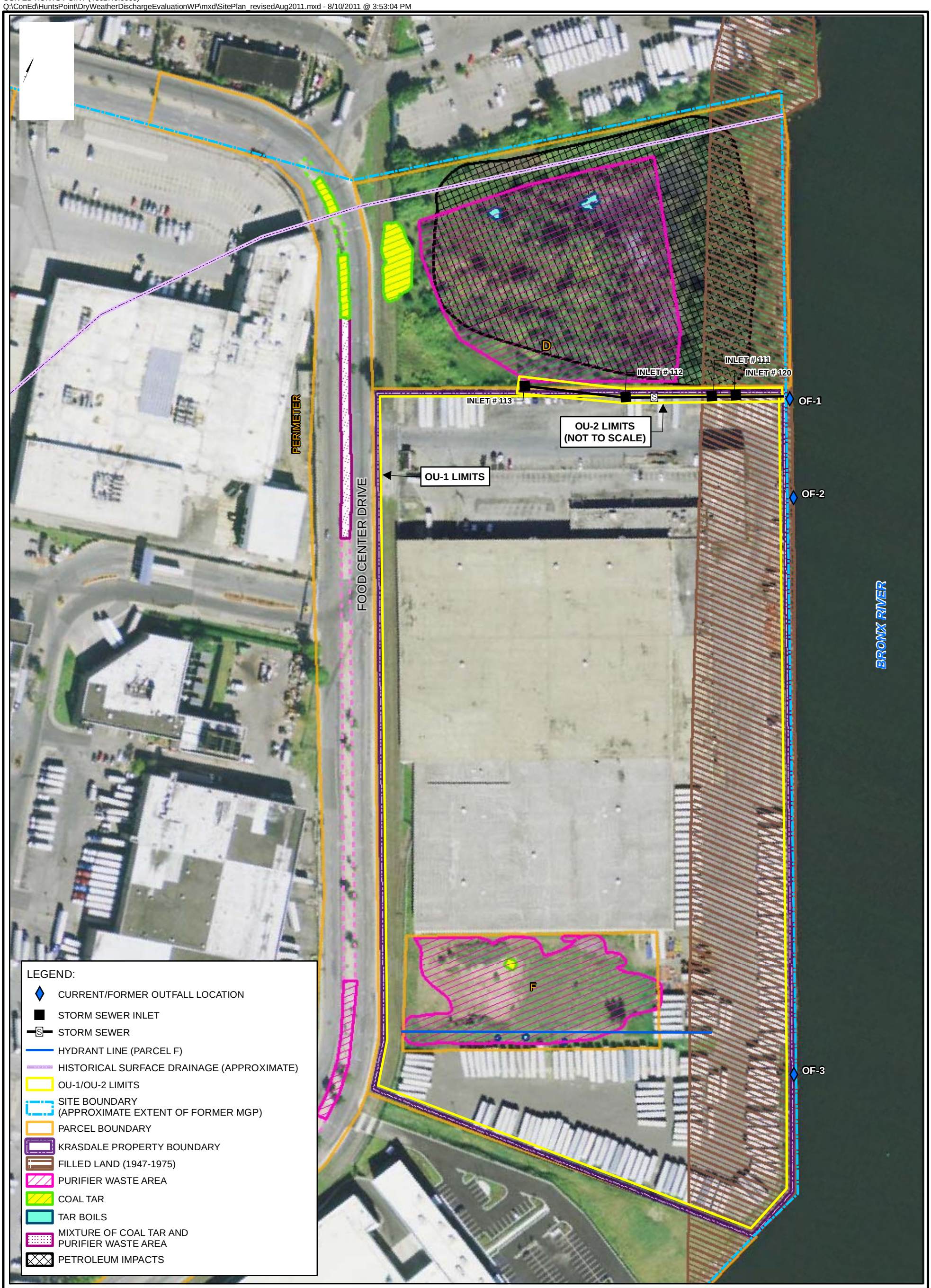
FIGURE 1

CITY: SYR DIV/GROUP: IM DB: J.RAPP LD: PIC: PM: TM: TR:
Con Ed (B0043026.0000.01000)
Q:\ConEd\HuntsPoint\DryWeatherDischargeEvaluationWP\mxd\SiteLocationMap.mxd - 12/21/2010 @ 10:38:30 AM

CITY:SYR DIV/GROUP: IM DB: J.RAPP LD: PIC: PM: TM: TR:
CON ED HUNTS POINT (43027.0.6000)
Q:\ConEd\HuntsPoint\DryWeatherDischargeEvaluationWP\mxd\SitePlan_revisedAug2011.mxd - 8/10/2011 @ 3:53:04 PM



NOTES:

1. IMAGERY OBTAINED FROM DIGITAL GLOBE, SEPTEMBER 19, 2009.
2. ALL LOCATIONS ARE APPROXIMATE.
3. PARCEL BOUNDARIES ADOPTED FROM CADD FILE PREPARED BY LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP.
4. SITE CHARACTERIZATION DETAILS FOR PARCEL D AND ADJACENT PERIMETER PARCEL ADOPTED FROM INVESTIGATIVE REPORT FOR PARCEL D, LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP, REVISED OCTOBER 2005.
5. SITE CHARACTERIZATION DETAILS FOR PARCEL F ADOPTED FROM SITE INVESTIGATIVE REPORT FOR PARCEL F, HDR/LMS, NOVEMBER 2007.
6. COAL TAR AND PURIFIER WASTE ON PERIMETER PARCEL EXCAVATED DURING THE CONSTRUCTION OF THE IROQUOIS PIPELINE.
7. STORM SEWER LOCATION ON KRASDALE PROPERTY WAS DIGITIZED FROM 2008 MERCATOR TOPOGRAPHIC AND UTILITY SURVEY.
8. STORM SEWER LINES ASSOCIATED WITH OUTFALLS OF-2 AND OF-3 ARE NOT SHOWN FOR CLARITY PURPOSES.

0 150 300 Feet
GRAPHIC SCALE

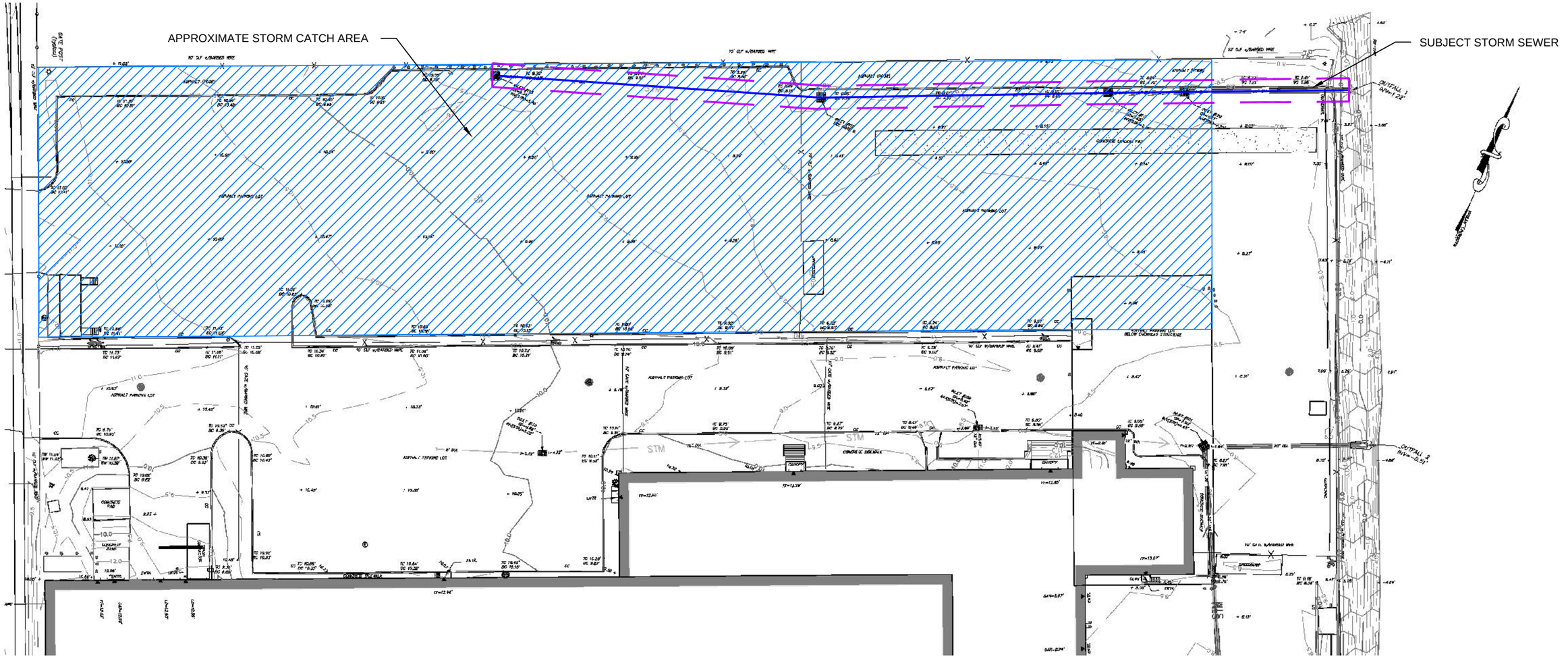
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
HUNTS POINT FORMER MANUFACTURED GAS PLANT

DRY WEATHER DISCHARGE EVALUATION WORK PLAN

SITE PLAN

ARCADIS

FIGURE
2



LEGEND:

- SUBJECT STORM SEWER
- APPROXIMATE STORM CATCH AREA
- OU-2 LIMITS

NOTES:

1. TOPOGRAPHIC AND UTILITY SURVEY ADOPTED FROM HUNT'S POINT, KRASDALE LEASEHOLD, P/O BLOCK 2781 LOT 500 HUNT'S POINT, BRONX COUNTY, STATE OF NEW YORK (NYC EDC LAST REVISED 4/23/08).
2. ALL LOCATIONS ARE APPROXIMATE.

0 50' 100'

GRAPHIC SCALE

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
HUNTS POINT FORMER MANUFACTURED GAS PLANT
DRY WEATHER DISCHARGE EVALUATION WORK PLAN

TOPOGRAPHIC AND UTILITY SURVEY, NORTHERN PORTION OF KRASDALE PROPERTY

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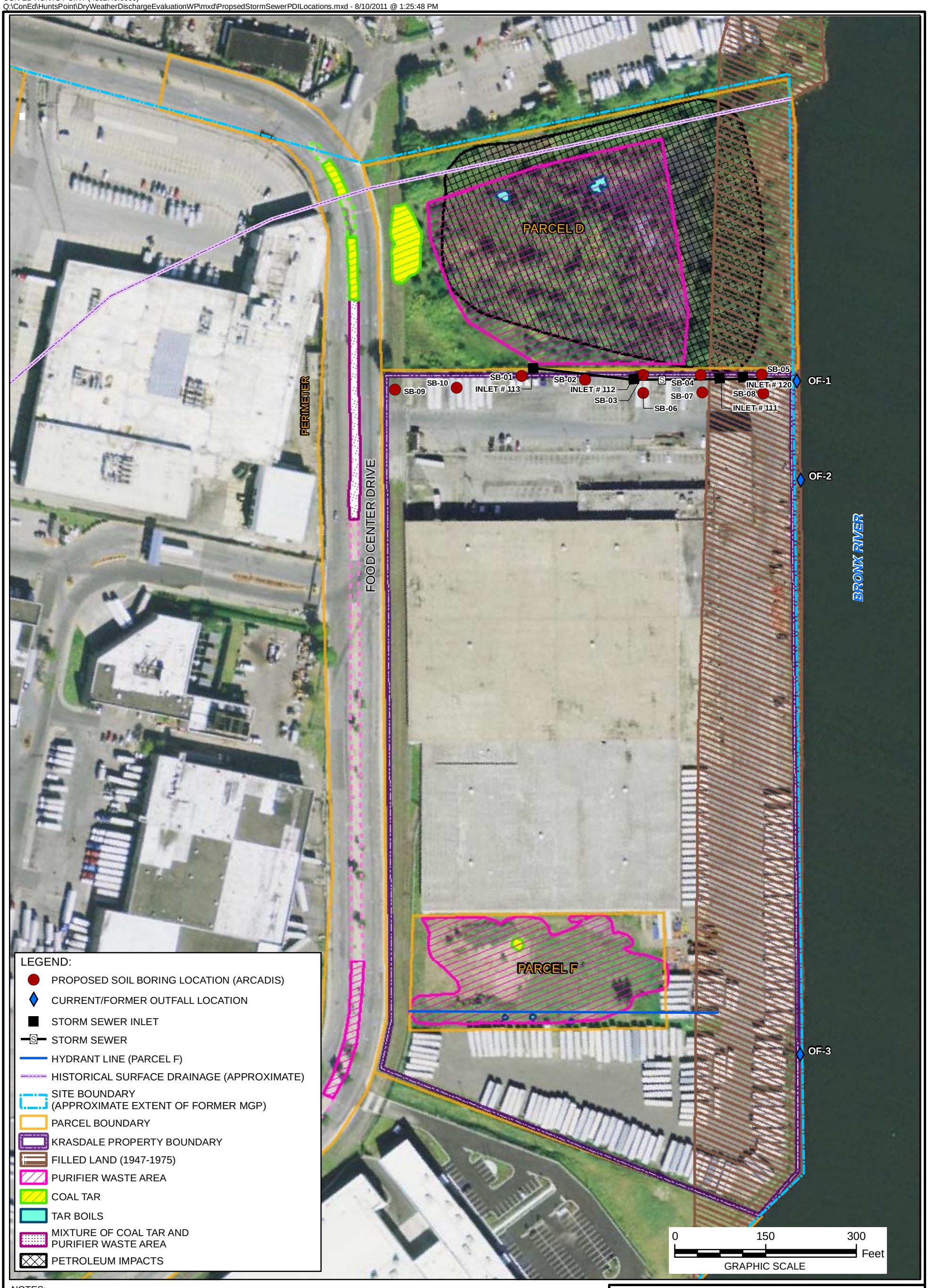
FIGURE
3

CITY:MAHWAH DIV/GROUP:ENVCAD DB:JG R.BASSETT LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIVE\60043027\000\05001\DWG\43027B01.dwg LAYOUT: 3SAVED: 8/9/2011 3:45 PM ACADVER: 18.0S (LMS TECH) PAGESETUP: ----PLOTSTYLETABLE: ----PLOTTED: 8/9/2011 3:46 PM BY: BASSETT, RICHARD
XREFS: IMAGES: PROJECTNAME: ----
V-05J152-13(Krasdale)BIND Northside (1).tif

CITY:SYR DIV/GROUP: IM DB: J.RAPP LD: PIC: PM: TM: TR:
CON ED HUNTS POINT (43027.0.6000)
Q:\ConEd\HuntsPoint\DryWeatherDischargeEvaluationWP\mxd\PropsedStormSewerPDILocations.mxd - 8/10/2011 @ 1:25:48 PM



NOTES:

1. IMAGERY OBTAINED FROM DIGITAL GLOBE, SEPTEMBER 19, 2009.
2. ALL LOCATIONS ARE APPROXIMATE.
3. PARCEL BOUNDARIES ADOPTED FROM CADD FILE PREPARED BY LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP.
4. SITE CHARACTERIZATION DETAILS FOR PARCEL D AND ADJACENT PERIMETER PARCEL ADOPTED FROM INVESTIGATIVE REPORT FOR PARCEL D, LAWLER, MATUSKY, AND SKELLY ENGINEERS, LLP, REVISED OCTOBER 2005.
5. SITE CHARACTERIZATION DETAILS FOR PARCEL F ADOPTED FROM SITE INVESTIGATIVE REPORT FOR PARCEL F, HDR/LMS, NOVEMBER 2007 AND PRE-DESIGN INVESTIGATION SOW, HDR ,OCTOBER 2010.
6. COAL TAR AND PURIFIER WASTE ON PERIMETER PARCEL EXCAVATED DURING THE CONSTRUCTION OF THE IROQUOIS PIPELINE.
7. STORM SEWER LOCATION ON KRASDALE PROPERTY WAS DIGITIZED FROM 2008 MERCATOR TOPOGRAPHIC AND UTILITY SURVEY. STORM SEWER COMPONENTS ASSOCIATED WITH OF-2 AND OF-3 ARE NOT SHOWN.
8. DURING SUBSURFACE INVESTIGATION ACTIVITIES, GROUNDWATER SAMPLES WILL BE COLLECTED AT THREE SOIL BORING LOCATIONS.
9. WATER SAMPLES WILL BE COLLECTED FROM STORMWATER INLETS AND OUTFALL OF-1 IF DRY-WEATHER DISHARGE IS OBSERVED.

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
HUNTS POINT FORMER MANUFACTURED GAS PLANT

DRY WEATHER DISCHARGE EVALUATION WORK PLAN

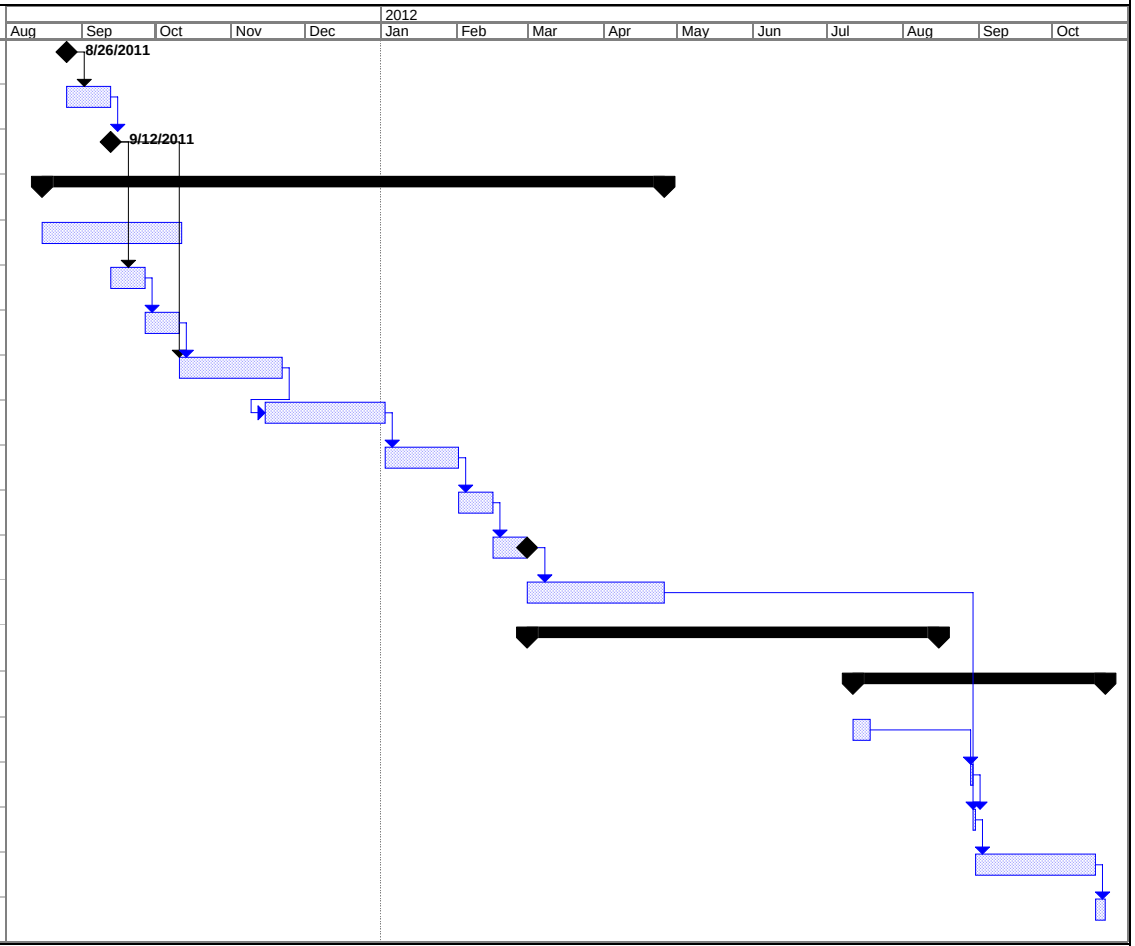
PROPOSED STORM SEWER PDI LOCATIONS

ARCADIS

FIGURE
4

Figure 5
Dry Weather Discharge
Evaluation Work Plan
Krasdale Foods Property, Hunts Point Site
Preliminary Project Schedule

ID	Task Name	Work Days	Start	Finish
1	Submit Dry Weather Discharge Evaluation Work Plan	0 days	Fri 8/26/11	Fri 8/26/11
2	NYSDEC Review/Comment Period	12 days	Fri 8/26/11	Mon 9/12/11
3	Receive NYSDEC's Approval of Dry Weather Discharge Evaluation Work Plan	0 days	Mon 9/12/11	Mon 9/12/11
4	**Design Phase**	**182 days**	**Tue 8/16/11**	**Wed 4/25/12**
5	Obtain Site Access Agreements	41 days	Tue 8/16/11	Tue 10/11/11
6	Prepare/Submit Pre-Design Investigation (PDI) Letter Work Plan	10 days	Tue 9/13/11	Mon 9/26/11
7	NYSDEC's Review/Approval of PDI Letter Work Plan	10 days	Tue 9/27/11	Mon 10/10/11
8	Perform Pre-Design Investigation (PDI) Activities	30 days	Tue 10/11/11	Mon 11/21/11
9	Prepare/Submit Pre-Final Design	35 days	Tue 11/15/11	Mon 1/2/12
10	NYSDEC Review/Comment Period	22 days	Tue 1/3/12	Wed 2/1/12
11	Prepare/Submit Final Design	10 days	Thu 2/2/12	Wed 2/15/12
12	Receive NYSDEC's Approval of Final Design	10 days	Thu 2/16/12	Wed 2/29/12
13	Obtain Appropriate Permit(s), As Necessary	40 days	Thu 3/1/12	Wed 4/25/12
14	**Procurement Phase**	**120 days**	**Thu 3/1/12**	**Wed 8/15/12**
20	**Construction Phase**	**73 days**	**Thu 7/12/12**	**Mon 10/22/12**
21	Obtain Local Permits, As Necessary	5 days	Thu 7/12/12	Wed 7/18/12
22	Pre-Construction Meeting	1 day	Wed 8/29/12	Wed 8/29/12
23	Mobilize Equipment, Material and Personnel	1 day	Thu 8/30/12	Thu 8/30/12
24	Perform Construction Work	35 days	Fri 8/31/12	Thu 10/18/12
25	Demobilize Equipment, Material and Personnel	2 days	Fri 10/19/12	Mon 10/22/12



Project: Krasdale Fooods Property, Hunts Point Site
Date: Fri 8/26/11

Task | Milestone | Summary | Recurring

Notes:
1. Implementation of the proposed rehabilitation measure is contingent upon the duration of NYSDEC's review/approval, receipt of access agreement(s), results of a treatability study, and weather-related conditions.

ARCADIS
Infrastructure, environment, facilities

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Appendices

Appendix A

AKRF CCTV Inspection Report

AKRF Inc.

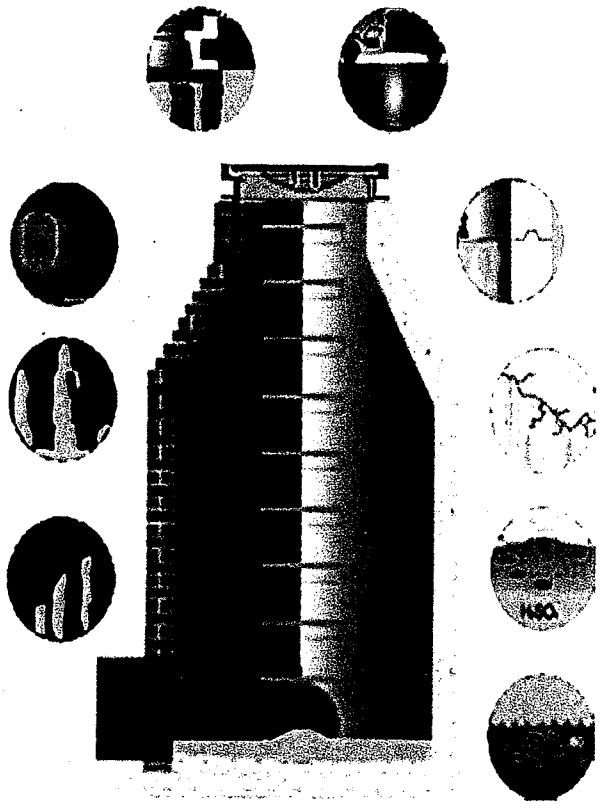
440 Park Ave South, 7th Floor

New York, NY 10016

Post Digital Scan Evaluation of Outfall Pipe

Krasdale Foods - Bronx

June 29th, 2010



Presented By:

Earth Repair, LLC

PO Box 516, Speonk, NY 11972

Phone: 631-727-3048 Fax: 631-727-2777

TV Inspection Report

EARTH REPAIR LLC.

P.O BOX 516 -- SPEONK, NY 11972

MH KD-1 to MH OUTFALL

Inspected on Tuesday, June 29, 2010

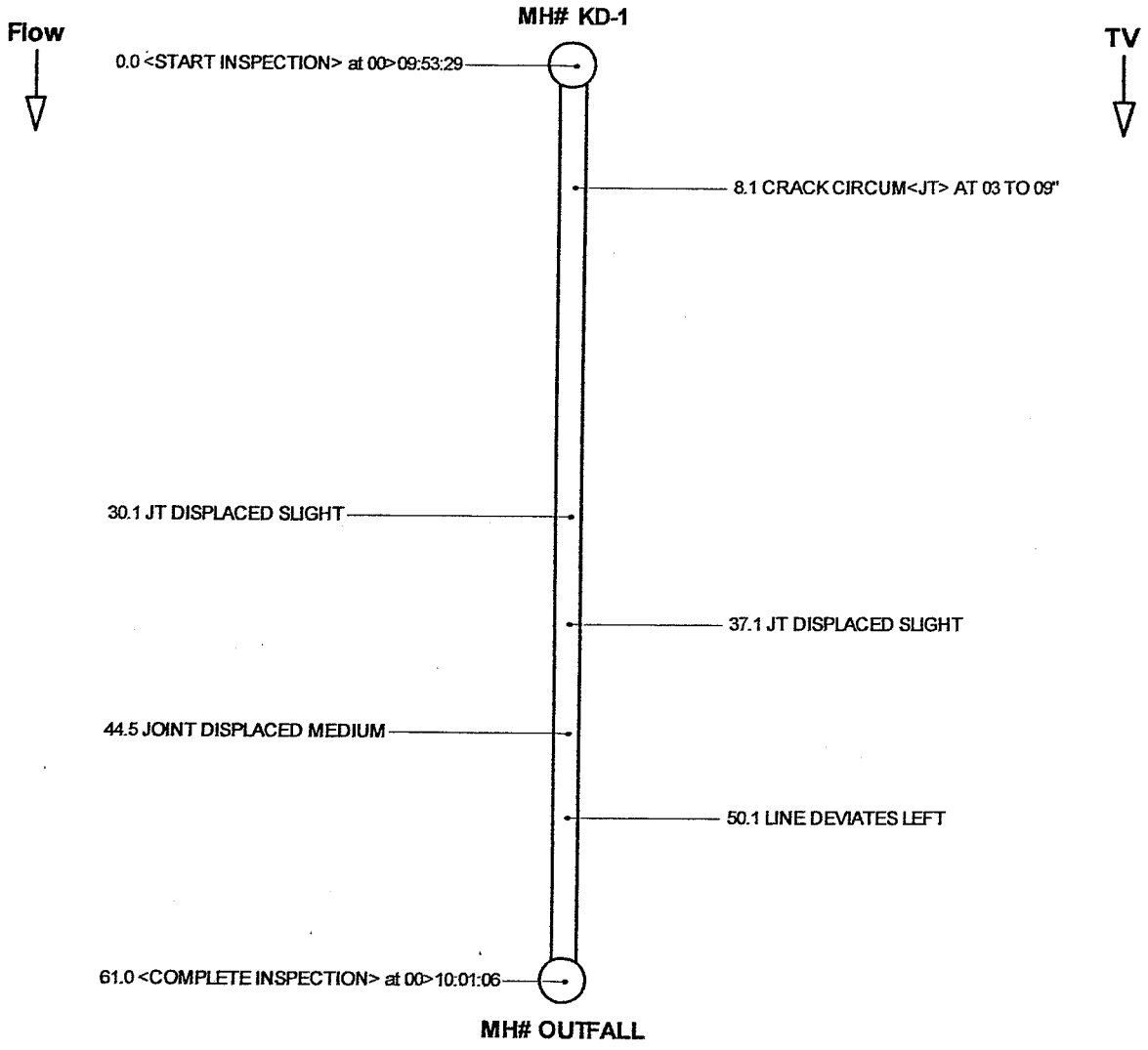
WO #:	AKRF-8	**Date:**	6/29/2010	**Status:**	COMP
S/Stretch:		**Contract:**	BRONX		
Address:	HUNTS POINT MARKET				
Owner:	AKRF ENGINEERING PC				
Insp:				**Type:**	R.C.P.
Oper:	KEVIN	**Dir:**	DOWNSTREAM		
System:	**Sub. Syst.:**	**JTL:**		**Comp.:**	
Log:	**Truck:**	**Size:**	20	**Pipe Length:**	61.0
Upstr:	KD-1	**Up Dp:**			
Dwnstr:	OUTFALL	**Dwn Dp:**			
Video Volume:				**Tape Start:**	SUNNY
Video File:					
Vcr:					
Comment 1:	KRASDALE FOODS PARKING LOT				
Comment 2:					
Comment 3:					
US Grd/Inv:	**US Rim/Inv:**	**DS Grd/Inv:**		**DS Rim/Inv:**	
Flow Ctrl:	**Size 2 (Width):**	**Yr Constr:**		**Year Renewed:**	
Purpose:		**Clean Date:**		**Sewer Cat:**	
Survey Cust:		**PO Number:**			
Start MH Long:	**Start MH Lat:**	**End MH Long:**		**End MH Lat:**	
Gen Fld 1:	**Gen Fld 2:**	**Gen Fld 3:**		**Gen Fld 4:**	
Gen Fld 5:					
Gen Fld 6:		**Gen Fld 7:**			
Gen Fld 8:		**Gen Fld 9:**			
Gen Fld 11:					

Footage	SF	CODE	Observation	Modifier	Image File	Struct	O&M
0.0		ST	<START INSPECTION>	00>09:53:29			
8.1		CCKJ	"CRACK CIRCUM<JT> AT 03 TO 09"				
30.1		JDS	"JT DISPLACED SLIGHT"				
37.1		JDS	"JT DISPLACED SLIGHT"				
44.5		JDM	"JOINT DISPLACED MEDIUM"				
50.1		LL	"LINE DEVIATES LEFT"				
61.0		FH	<COMPLETE INSPECTION>	00>10:01:06			

Total Length of Line	**61.0**
Total Length Inspected	**61.0**
Total Upstream Footage	**0.0**
Total Downstream Footage	**61.0**
Number of Observations	**7**

EARTH REPAIR LLC.

P.O BOX 516 – SPEONK, NY 11972



Address:	**HUNTS POINT MARKET**	**Owner: AKRF ENGINEERING PC**	
MH:	**KD-1 to OUTFALL**		
S/Stretch:		**Type:**	R.C.P.
WO #:	AKRF-8	**Size:**	20
Date:	6/29/2010	**Status:**	COMP
Length:	61.00 Feet	◯	=Image Attached
Dir:	DOWNSTREAM	☒	=Video Clip Attached
Comp.:			
Operator:	KEVIN		
Truck:			
Vcr/Tape Start:	/SUNNY		
Comment 1:	KRASDALE FOODS PARKING LOT		

TV Inspection Report

EARTH REPAIR LLC.

P.O BOX 516 -- SPEONK, NY 11972

MH KD-2 to MH OUTFALL

Inspected on Tuesday, June 29, 2010

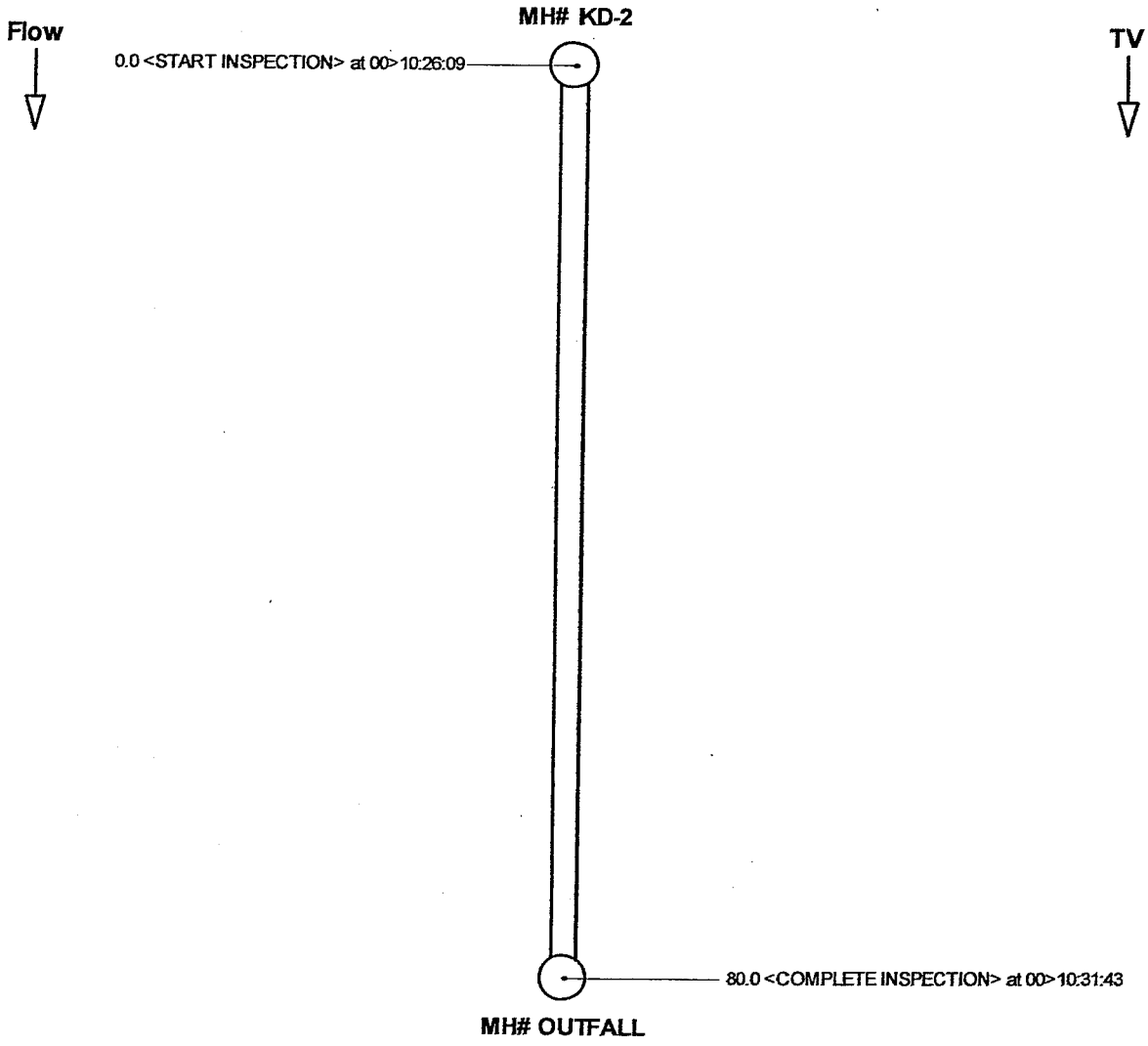
WO #:	AKRF-9	**Date:**	6/29/2010	**Status:**	COMP
S/Stretch:		**Contract:**	BRONX		
Address:	HUNTS POINT MARKET				
Owner:	AKRF ENGINEERING PC				
Insp:				**Type:**	R.C.P.
Oper:	KEVIN	**Dir:**	DOWNSTREAM		
System:	**Sub. Syst.:**	**JTL:**		**Comp.:**	
Log:	**Truck:**	**Size:**	20	**Pipe Length:**	80.0
Upstr:	KD-2	**Up Dp:**			
Dwnstr:	OUTFALL	**Dwn Dp:**			
Video Volume:				**Tape Start:**	SUNNY
Video File:					
Vcr:					
Comment 1:	KRASDALE FOODS PARKING LOT				
Comment 2:					
Comment 3:					
US Grd/Inv:	**US Rim/Inv:**	**DS Grd/Inv:**		**DS Rim/Inv:**	
Flow Ctrl:	**Size 2 (Width):**	**Yr Constr:**		**Year Renewed:**	
Purpose:		**Clean Date:**		**Sewer Cat:**	
Survey Cust:		**PO Number:**			
Start MH Long:	**Start MH Lat:**	**End MH Long:**		**End MH Lat:**	
Gen Fld 1:	**Gen Fld 2:**	**Gen Fld 3:**		**Gen Fld 4:**	
Gen Fld 5:					
Gen Fld 6:		**Gen Fld 7:**			
Gen Fld 8:		**Gen Fld 9:**			
Gen Fld 11:					

Footage	SF	CODE	Observation	Modifier	Image File	Struct	O&M
0.0		ST	<START INSPECTION>	00>10:26:09			
80.0		FH	<COMPLETE INSPECTION>	00>10:31:43			

Total Length of Line	**80.0**
Total Length Inspected	**80.0**
Total Upstream Footage	**0.0**
Total Downstream Footage	**80.0**
Number of Observations	**2**

EARTH REPAIR LLC.

P.O BOX 516 – SPEONK, NY 11972



Address:	**HUNTS POINT MARKET**	**Owner: AKRF ENGINEERING PC**	
MH:	**KD-2 to OUTFALL**		
S/Stretch:		**Type:**	R.C.P.
WO #:	AKRF-9	**Size:**	20
Date:	6/29/2010	**Status:**	COMP
Length:	80.00 Feet		
Dir:	DOWNSTREAM	☐	=Image Attached
Comp.:		☒	=Video Clip Attached
Operator:	KEVIN		
Truck:			
Vcr/Tape Start:	/SUNNY		
Comment 1:	KRASDALE FOODS PARKING LOT		

TV Inspection Report

MH KD3 to MH OUTFALL

Televised Tuesday, June 29, 2010

WO #	Date	Contractor	Status
AKRF-10	6/29/2010		ABAN

Address
HUNTS POINT MARKET

Contract
BRONX

Owner
AKRF ENGINEERING

Type
CEMENT

Insp	Oper	Dir
	KEVIN	DOWNSTREAM

System	Sub. Syst.	JTL	Comp.	Log	Truck	Size	Up Dp	Dwn Dp
						15		

Upstr	Dwnstr	Video Volume
KD3	OUTFALL	

Video File

Vcr

Tape Start

Comment 1
KRASDALE FOODS PARKING LOT

Comment 2

Comment 3

Footage	SF	CODE	Observation	Modifier	Imag	At	To	Dia	Loss	%	Gals	Str	OM
0.0			<START INSPECTION>	09:54:53									
0.3			SD WEAR LARGE AT 4 TO 8										
4.0			SD WEAR LARGE AT 12 TO 12										
4.0			ISSR AT JT 3 TO 9										
			SEALING RING IS VISIBLE										
11.0			SD WEAR LARGE AT 4 TO 8										
15.1			SD WEAR LARGE AT 4 TO 8										
15.1			ISSR AT JT 3 TO 9										
			SEALING RING IS VISIBLE										
19.7			SD WEAR LARGE AT 4 TO 8										
22.9			SD WEAR LARGE AT 4 TO 8										
23.0			ISSR AT JT 3 TO 9										
			SEALING RING IS VISIBLE										
25.0			SD WEAR LARGE AT 4 TO 8										
31.0			ISSR AT JT 3-9										
			SEALING RING IS VISIBLE										
38.2			SD WEAR LARGE AT 4 TO 8										
39.0			ISSR AT JT 7 TO 10										
39.0			SEALING RING IS VISIBLE										
43.9			SD WEAR LARGE AT 4 TO 8										
55.1			SD WEAR LARGE AT 4 TO 8										
69.9			DEBRIS 20% SEC LOSS										
74.7			LARGE SEPERATED JOINT										
			SOIL VISIBLE										
76.2			DEBRIS 30% SEX LOSS										
76.2			UNABLE TO PASS										

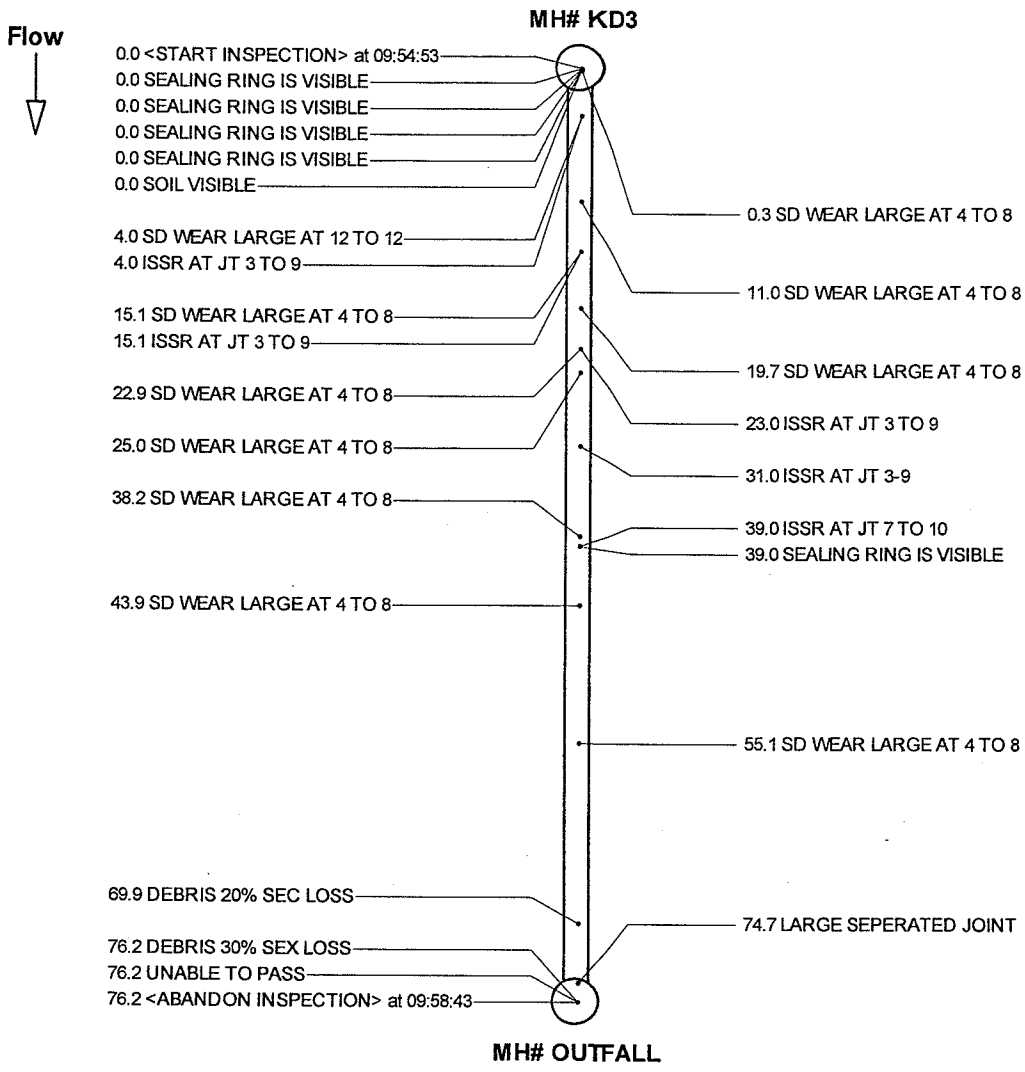
TV Inspection Report

MH KD3 to MH OUTFALL

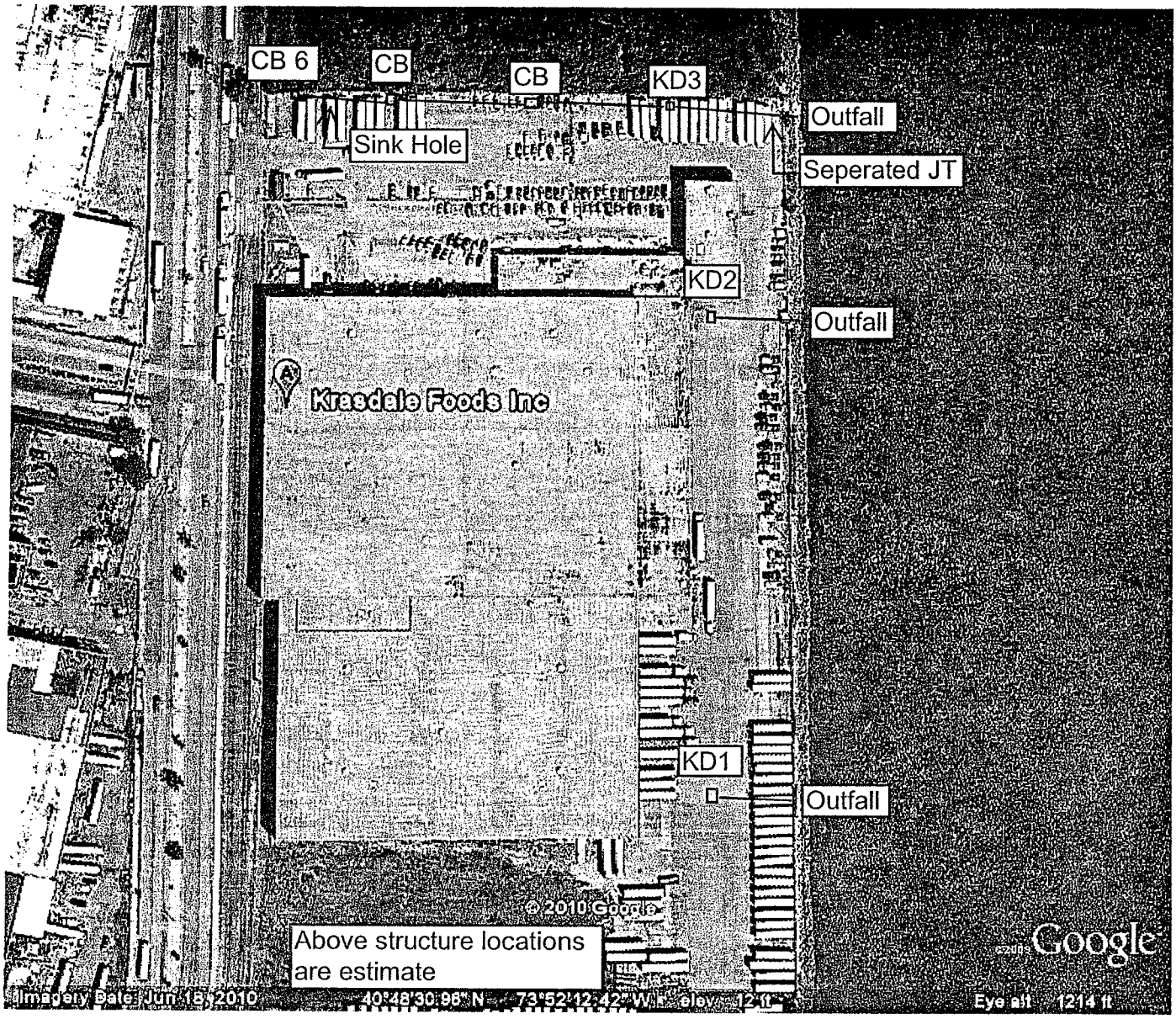
Televised Tuesday, June 29, 2010

Footage	SF	CODE	Observation	Modifier	Imag	At	To	Dia	Sec	%	Gal	Str	OM
76.2			<ABANDON INSPECTION>	09:58:43									

Total Length of Line	76.2
Total Length Inspected	76.2
Total Upstream Footage	0.0
Total Downstream Footage	76.2
Number of Observations	27



Address:	**HUNTS POINT MARKET**	**Owner: AKRF ENGINEERING**	
MH:	**KD3 to OUTFALL**		
Contractor:		**Type:**	CEMENT
WO #:	AKRF-10	**Size:**	15
Date:	6/29/2010	**Status:**	ABAN
Length:	76.20 Feet	◯	=Image Attached
Dir:	DOWNSTREAM	☒	=Video Clip Attached
Comp.:			
Operator:	KEVIN		
Truck:			
Vcr/Tape Start:	/		
Comment 1:	KRASDALE FOODS PARKING LOT		

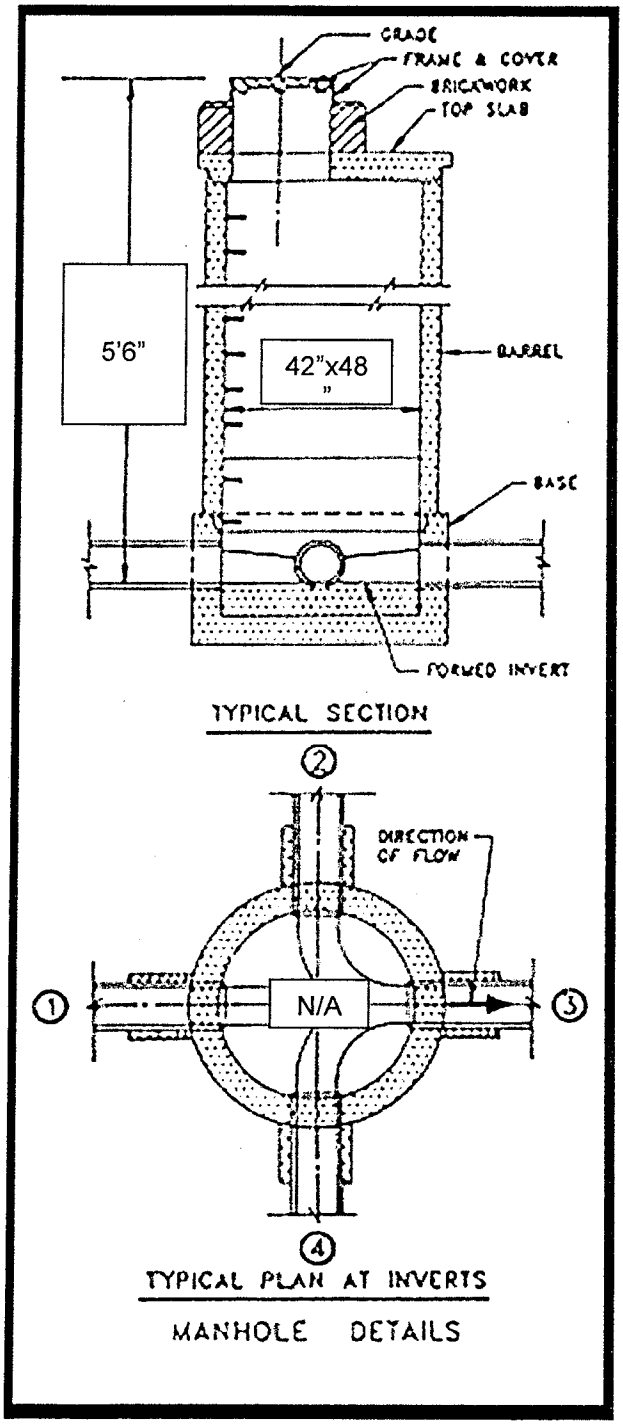

CB 6
CB
CB
KD3
Outfall
Sink Hole
Seperated JT
KD2
Outfall
Kraedale Foods Inc
KD1
Outfall
© 2010 Google
Above structure locations are estimate
Imagery Date: Jun 18, 2010
40°48'30.96" N 73°52'12.42" W elev 12 ft
Eye alt 1214 ft
Google

MANHOLE INSPECTION FORM

CONT. NO.:_____ M.H. NO.: KD3 STREET LOCATION: Krasdale Food – Back Parking Lot

DATE: 6/29/10 GPS Coord: _____ WEATHER: Sunny PH: _____

H_2S:_____ (PPM)OXYGEN:_____(PPM) DEPTH OF FLOW: ½" _____(INCHES)



ITEM	DESCRIPTION OF DEFECTS
COVER	Rusted
FRAME	Rusted
BRICKWORK	No
DOME	No
MH STEPS	No
OTHER	
BARREL	Catch Basin
CONCRETE	Poor – Heavy Erosion
LEAKS	
OTHER	
BASE	
CONCRETE	Poor – Heavy Erosion
LEAKS	
pH	
OTHER	
INVERT	
CONCRETE	Poor – Heavy Erosion
LEAKS	
OTHER	

PIPES	1	2	3	4
SIZE (INCHES)	15"		15"	
PIPE MATERIAL	Cement		Cement	
CROWN pH				
DESCRIPTION OF DEFECTS				
PHOTO INFORMATION (CLICK ON PHOTO)				

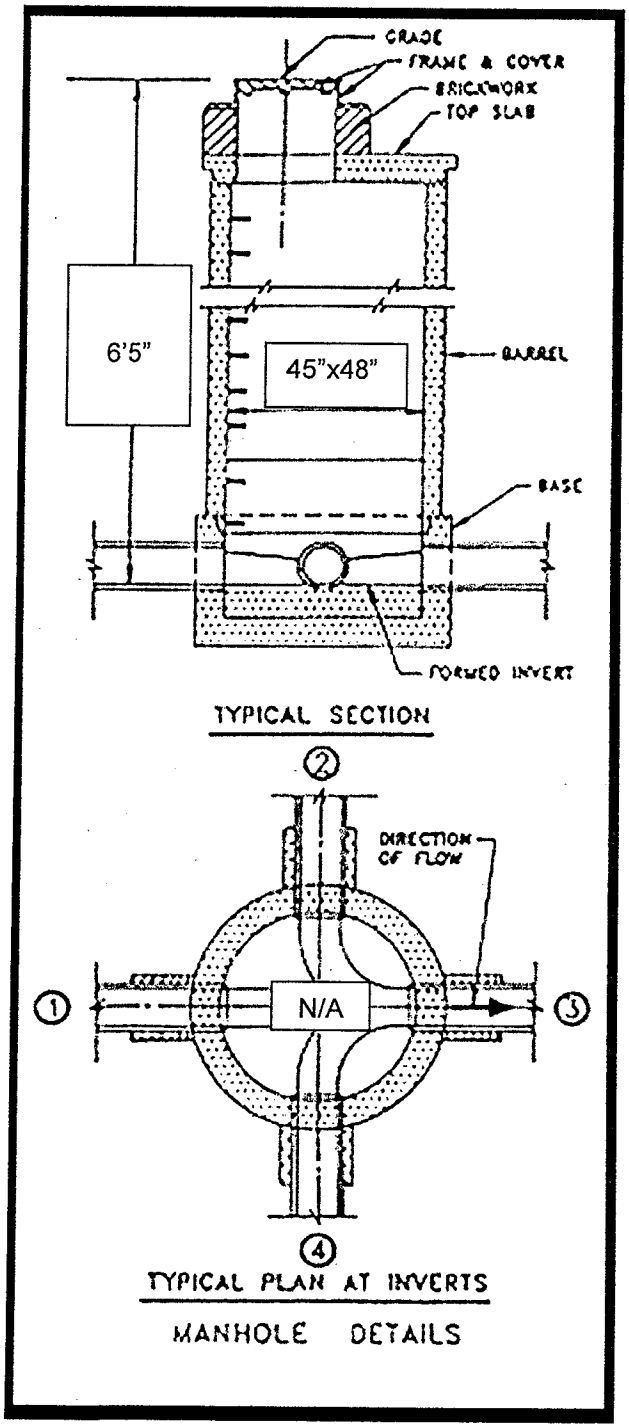
REMARKS:	Bottom of structure has heavy wear erosion

MANHOLE INSPECTION FORM

CONT. NO.:_____ M.H. NO.: KD2 STREET LOCATION: Krasdale Food – Back Parking Lot

DATE: 6/29/10 GPS Coord: _____ WEATHER: Sunny PH: _____

H_2S:_____ (PPM)OXYGEN:_____(PPM) DEPTH OF FLOW: No Flow (INCHES)



ITEM	DESCRIPTION OF DEFECTS
COVER	Rusted
FRAME	Rusted
BRICKWORK	Wear Erosion
DOME	No
MH STEPS	No
OTHER	
BARREL	Catch Basin
CONCRETE	Yes – Heavy Erosion
LEAKS	
OTHER	
BASE	
CONCRETE	Yes – Heavy Erosion
LEAKS	
pH	
OTHER	
INVERT	
CONCRETE	
LEAKS	
OTHER	Poor – Heavy Erosion

PIPES	1	2	3	4
SIZE (INCHES)		12"	20"	20"
PIPE MATERIAL		Cement	Cement	Cement
CROWN pH				
DESCRIPTION OF DEFECTS				
PHOTO INFORMATION (CLICK ON PHOTO)				

REMARKS:	Bottom of structure has heavy wear erosion

ARCADIS

Appendix B

Water Sample Analytical Results

ANALYTICAL REPORT

Lab Number:	L1013727
Client:	AKRF, Inc. 440 Park Avenue South New York, NY 10016
ATTN:	Axel Schwendt
Phone:	(646) 388-9529
Project Name:	KRASDALE FOODS SITE
Project Number:	80222-0005
Report Date:	09/14/10

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1013727-01	K-CB	FOOD CENTER DRIVE, BRONX, NY	09/03/10 11:25
L1013727-02	K-OF	FOOD CENTER DRIVE, BRONX, NY	09/03/10 12:00
L1013727-03	K-TB	FOOD CENTER DRIVE, BRONX, NY	09/03/10 00:00

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Volatile Organics

L1013727-01 and -02 have elevated detection limits due to the dilutions required by the elevated concentrations of target compounds in the samples.

L1013727-03 (Trip Blank): Chloroform, Bromodichloromethane, and Acetone are present above the reporting limits. The sample vial was verified as being labeled correctly by the laboratory and the previous analysis showed there was no potential for carry over.

Semivolatile Organics by SIM

L1013727-01 and -02 have elevated detection limits due to the dilutions required by the elevated concentrations of target compounds in the samples.

The surrogate recoveries for L1013727-01 and -02 are below the acceptance criteria for 2-Fluorophenol, Phenol-d6, Nitrobenzene-d5, 2-Fluorobiphenyl, 2,4,6-Tribromophenol, 4-Terphenyl-d14 (all at 0%) due to

Case Narrative (continued)

the dilutions required to quantitate the samples. Re-extraction is not required; therefore, the results of the original analyses are reported.
The surrogate recovery for the WG431355-1 Method Blank, associated with L1013727-01 and -02, is above the acceptance criteria for 4-Terphenyl-d14 (127%). Since the Method Blank was non-detect for all target analytes, re-analysis is not required.
The WG431355-2/-3 LCS/LCSD recoveries, associated with L1013727-01 and -02, were above the acceptance criteria for 2-Chloronaphthalene (224%/204%); however, the associated samples were non-detect for this target compound. The results of the original analysis are reported.
The surrogate recoveries for the WG431355-2/-3 LCS/LCSD, associated with L1013727-01 and -02, are above the acceptance criteria for 2-Fluorobiphenyl (LCS at 129%), 2,4,6-Tribromophenol (154%/136%), and 4-Terphenyl-d14 (145%/127%).

Metals
L1013727-01 and -02 have elevated detection limits for Antimony, Beryllium and Thallium due to the dilutions required by the high concentrations of non-target analytes.
L1013727-01 and -02 have elevated detection limits for Zinc due to the dilutions required by target analyte spectral interferences encountered during analysis.
The WG431095-4 MS recoveries for Aluminum (200%), Calcium (200%), Iron (2000%), Manganese (132%), and Sodium (150%), performed on L1013727-01, are invalid because the sample concentrations are greater than four times the spike amount added.

Cyanide, Total
L1013727-01 and -02 have elevated detection limits due to the dilutions required to quantitate the results within the calibration range.
The WG431210-4/-5 MS/MSD recoveries (65%/72%), performed on L1013727-01, are below the acceptance criteria; however, the associated LCS/LCSD recoveries were within criteria.

Project Name:	KRASDALE FOODS SITE	**Lab Number:**	L1013727
Project Number:	80222-0005	**Report Date:**	09/14/10

Case Narrative (continued)

Cyanide, Amenable

L1013727-01 and -02 have elevated detection limits due to the dilutions required to quantitate the results within the calibration range.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Elizabeth Simmons

Title: Technical Director/Representative Date: 09/14/10

ORGANICS

VOLATILES

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01 D
Client ID: K-CB
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water
Analytical Method: 1,8260B
Analytical Date: 09/09/10 11:08
Analyst: PD

Date Collected: 09/03/10 11:25
Date Received: 09/03/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1000	--	200
1,1-Dichloroethane	ND		ug/l	150	--	200
Chloroform	ND		ug/l	150	--	200
Carbon tetrachloride	ND		ug/l	100	--	200
1,2-Dichloropropane	ND		ug/l	350	--	200
Dibromochloromethane	ND		ug/l	100	--	200
1,1,2-Trichloroethane	ND		ug/l	150	--	200
Tetrachloroethene	ND		ug/l	100	--	200
Chlorobenzene	ND		ug/l	100	--	200
Trichlorofluoromethane	ND		ug/l	500	--	200
1,2-Dichloroethane	ND		ug/l	100	--	200
1,1,1-Trichloroethane	ND		ug/l	100	--	200
Bromodichloromethane	ND		ug/l	100	--	200
trans-1,3-Dichloropropene	ND		ug/l	100	--	200
cis-1,3-Dichloropropene	ND		ug/l	100	--	200
1,1-Dichloropropene	ND		ug/l	500	--	200
Bromoform	ND		ug/l	400	--	200
1,1,2,2-Tetrachloroethane	ND		ug/l	100	--	200
Benzene	ND		ug/l	100	--	200
Toluene	ND		ug/l	150	--	200
Ethylbenzene	ND		ug/l	100	--	200
Chloromethane	ND		ug/l	500	--	200
Bromomethane	ND		ug/l	200	--	200
Vinyl chloride	ND		ug/l	200	--	200
Chloroethane	ND		ug/l	200	--	200
1,1-Dichloroethene	ND		ug/l	100	--	200
trans-1,2-Dichloroethene	ND		ug/l	150	--	200
Trichloroethene	ND		ug/l	100	--	200
1,2-Dichlorobenzene	ND		ug/l	500	--	200
1,3-Dichlorobenzene	ND		ug/l	500	--	200

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01 D Date Collected: 09/03/10 11:25

Client ID: K-CB Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Dichlorobenzene	ND		ug/l	500	--	200
Methyl tert butyl ether	ND		ug/l	200	--	200
p/m-Xylene	ND		ug/l	200	--	200
o-Xylene	ND		ug/l	200	--	200
cis-1,2-Dichloroethene	ND		ug/l	100	--	200
Dibromomethane	ND		ug/l	1000	--	200
1,2,3-Trichloropropane	ND		ug/l	1000	--	200
Acrylonitrile	ND		ug/l	1000	--	200
Styrene	ND		ug/l	200	--	200
Dichlorodifluoromethane	ND		ug/l	1000	--	200
Acetone	ND		ug/l	1000	--	200
Carbon disulfide	6200		ug/l	1000	--	200
2-Butanone	ND		ug/l	1000	--	200
Vinyl acetate	ND		ug/l	1000	--	200
4-Methyl-2-pentanone	ND		ug/l	1000	--	200
2-Hexanone	ND		ug/l	1000	--	200
Bromochloromethane	ND		ug/l	500	--	200
2,2-Dichloropropane	ND		ug/l	500	--	200
1,2-Dibromoethane	ND		ug/l	400	--	200
1,3-Dichloropropane	ND		ug/l	500	--	200
1,1,1,2-Tetrachloroethane	ND		ug/l	100	--	200
Bromobenzene	ND		ug/l	500	--	200
n-Butylbenzene	ND		ug/l	100	--	200
sec-Butylbenzene	ND		ug/l	100	--	200
tert-Butylbenzene	ND		ug/l	500	--	200
o-Chlorotoluene	ND		ug/l	500	--	200
p-Chlorotoluene	ND		ug/l	500	--	200
1,2-Dibromo-3-chloropropane	ND		ug/l	500	--	200
Hexachlorobutadiene	ND		ug/l	120	--	200
Isopropylbenzene	ND		ug/l	100	--	200
p-Isopropyltoluene	ND		ug/l	100	--	200
Naphthalene	ND		ug/l	500	--	200
n-Propylbenzene	ND		ug/l	100	--	200
1,2,3-Trichlorobenzene	ND		ug/l	500	--	200
1,2,4-Trichlorobenzene	ND		ug/l	500	--	200
1,3,5-Trimethylbenzene	ND		ug/l	500	--	200
1,2,4-Trimethylbenzene	ND		ug/l	500	--	200

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01 D Date Collected: 09/03/10 11:25

Client ID: K-CB Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Diethylbenzene	ND		ug/l	400	--	200
4-Ethyltoluene	ND		ug/l	400	--	200
1,2,4,5-Tetramethylbenzene	ND		ug/l	400	--	200
Ethyl ether	ND		ug/l	500	--	200
trans-1,4-Dichloro-2-butene	ND		ug/l	500	--	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID:	L1013727-02 D	Date Collected:	09/03/10 12:00
Client ID:	K-OF	Date Received:	09/03/10
Sample Location:	FOOD CENTER DRIVE, BRONX, NY	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260B		
Analytical Date:	09/09/10 11:42		
Analyst:	PD		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	250	--	50
1,1-Dichloroethane	ND		ug/l	38	--	50
Chloroform	ND		ug/l	38	--	50
Carbon tetrachloride	ND		ug/l	25	--	50
1,2-Dichloropropane	ND		ug/l	88	--	50
Dibromochloromethane	ND		ug/l	25	--	50
1,1,2-Trichloroethane	ND		ug/l	38	--	50
Tetrachloroethene	ND		ug/l	25	--	50
Chlorobenzene	ND		ug/l	25	--	50
Trichlorofluoromethane	ND		ug/l	120	--	50
1,2-Dichloroethane	ND		ug/l	25	--	50
1,1,1-Trichloroethane	ND		ug/l	25	--	50
Bromodichloromethane	ND		ug/l	25	--	50
trans-1,3-Dichloropropene	ND		ug/l	25	--	50
cis-1,3-Dichloropropene	ND		ug/l	25	--	50
1,1-Dichloropropene	ND		ug/l	120	--	50
Bromoform	ND		ug/l	100	--	50
1,1,2,2-Tetrachloroethane	ND		ug/l	25	--	50
Benzene	ND		ug/l	25	--	50
Toluene	ND		ug/l	38	--	50
Ethylbenzene	ND		ug/l	25	--	50
Chloromethane	ND		ug/l	120	--	50
Bromomethane	ND		ug/l	50	--	50
Vinyl chloride	ND		ug/l	50	--	50
Chloroethane	ND		ug/l	50	--	50
1,1-Dichloroethene	ND		ug/l	25	--	50
trans-1,2-Dichloroethene	ND		ug/l	38	--	50
Trichloroethene	ND		ug/l	25	--	50
1,2-Dichlorobenzene	ND		ug/l	120	--	50
1,3-Dichlorobenzene	ND		ug/l	120	--	50

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02 D Date Collected: 09/03/10 12:00

Client ID: K-OF Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Dichlorobenzene	ND		ug/l	120	--	50
Methyl tert butyl ether	ND		ug/l	50	--	50
p/m-Xylene	ND		ug/l	50	--	50
o-Xylene	ND		ug/l	50	--	50
cis-1,2-Dichloroethene	ND		ug/l	25	--	50
Dibromomethane	ND		ug/l	250	--	50
1,2,3-Trichloropropane	ND		ug/l	250	--	50
Acrylonitrile	ND		ug/l	250	--	50
Styrene	ND		ug/l	50	--	50
Dichlorodifluoromethane	ND		ug/l	250	--	50
Acetone	ND		ug/l	250	--	50
Carbon disulfide	2100		ug/l	250	--	50
2-Butanone	ND		ug/l	250	--	50
Vinyl acetate	ND		ug/l	250	--	50
4-Methyl-2-pentanone	ND		ug/l	250	--	50
2-Hexanone	ND		ug/l	250	--	50
Bromochloromethane	ND		ug/l	120	--	50
2,2-Dichloropropane	ND		ug/l	120	--	50
1,2-Dibromoethane	ND		ug/l	100	--	50
1,3-Dichloropropane	ND		ug/l	120	--	50
1,1,1,2-Tetrachloroethane	ND		ug/l	25	--	50
Bromobenzene	ND		ug/l	120	--	50
n-Butylbenzene	ND		ug/l	25	--	50
sec-Butylbenzene	ND		ug/l	25	--	50
tert-Butylbenzene	ND		ug/l	120	--	50
o-Chlorotoluene	ND		ug/l	120	--	50
p-Chlorotoluene	ND		ug/l	120	--	50
1,2-Dibromo-3-chloropropane	ND		ug/l	120	--	50
Hexachlorobutadiene	ND		ug/l	30	--	50
Isopropylbenzene	ND		ug/l	25	--	50
p-Isopropyltoluene	ND		ug/l	25	--	50
Naphthalene	200		ug/l	120	--	50
n-Propylbenzene	ND		ug/l	25	--	50
1,2,3-Trichlorobenzene	ND		ug/l	120	--	50
1,2,4-Trichlorobenzene	ND		ug/l	120	--	50
1,3,5-Trimethylbenzene	ND		ug/l	120	--	50
1,2,4-Trimethylbenzene	ND		ug/l	120	--	50

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02 D Date Collected: 09/03/10 12:00

Client ID: K-OF Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Diethylbenzene	ND		ug/l	100	--	50
4-Ethyltoluene	ND		ug/l	100	--	50
1,2,4,5-Tetramethylbenzene	ND		ug/l	100	--	50
Ethyl ether	ND		ug/l	120	--	50
trans-1,4-Dichloro-2-butene	ND		ug/l	120	--	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	98		70-130

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID:	L1013727-03	Date Collected:	09/03/10 00:00
Client ID:	K-TB	Date Received:	09/03/10
Sample Location:	FOOD CENTER DRIVE, BRONX, NY	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260B		
Analytical Date:	09/08/10 15:05		
Analyst:	PD		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	5.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	1.9		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	0.51		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-03 Date Collected: 09/03/10 00:00

Client ID: K-TB Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	10		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-03
Client ID: K-TB
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Date Collected: 09/03/10 00:00
Date Received: 09/03/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,4-Diethylbenzene	ND		ug/l	2.0	--	1
4-Ethyltoluene	ND		ug/l	2.0	--	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	100		70-130

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 09/08/10 09:19
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG431570-3					
Methylene chloride	ND		ug/l	5.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 09/08/10 09:19
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG431570-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 09/08/10 09:19
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG431570-3					
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
1,4-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 09/09/10 08:49
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG431608-3					
Methylene chloride	ND		ug/l	5.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 09/09/10 08:49
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG431608-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 09/09/10 08:49
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG431608-3					
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
1,4-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG431570-1 WG431570-2								
Chlorobenzene	100		97		75-130	3		20
Benzene	102		104		76-127	2		20
Toluene	100		100		76-125	0		20
1,1-Dichloroethene	93		96		61-145	3		20
Trichloroethene	101		100		71-120	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	119		117		70-130
Toluene-d8	103		104		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	103		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG431608-1 WG431608-2								
Chlorobenzene	100		102		75-130	2		20
Benzene	102		108		76-127	6		20
Toluene	100		104		76-125	4		20
1,1-Dichloroethene	92		99		61-145	7		20
Trichloroethene	102		105		71-120	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	122		120		70-130
Toluene-d8	103		104		70-130
4-Bromofluorobenzene	104		102		70-130
Dibromofluoromethane	104		102		70-130

SEMIVOLATILES

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID:	L1013727-01	Date Collected:	09/03/10 11:25
Client ID:	K-CB	Date Received:	09/03/10
Sample Location:	FOOD CENTER DRIVE, BRONX, NY	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270C	Extraction Date:	09/08/10 09:12
Analytical Date:	09/10/10 20:40		
Analyst:	JB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	5.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	50	--	1
2,4-Dinitrotoluene	ND		ug/l	6.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	5.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	5.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	30	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	5.0	--	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/l	15	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	5.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Biphenyl	ND		ug/l	5.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	7.0	--	1
Dibenzofuran	9.4		ug/l	5.0	--	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	20	--	1

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01 Date Collected: 09/03/10 11:25

Client ID: K-CB Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acetophenone	29		ug/l	20	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
P-Chloro-M-Cresol	ND		ug/l	5.0	--	1
2-Chlorophenol	ND		ug/l	6.0	--	1
2,4-Dichlorophenol	ND		ug/l	10	--	1
2,4-Dimethylphenol	22		ug/l	10	--	1
2-Nitrophenol	ND		ug/l	20	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	30	--	1
4,6-Dinitro-o-cresol	ND		ug/l	20	--	1
Phenol	9.9		ug/l	7.0	--	1
2-Methylphenol	12		ug/l	6.0	--	1
3-Methylphenol/4-Methylphenol	32		ug/l	6.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	10	--	1
Carbazole	5.4		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	92		10-120
4-Terphenyl-d14	81		33-120

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01 D
Client ID: K-CB
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water
Analytical Method: 1,8270C
Analytical Date: 09/10/10 18:55
Analyst: JC

Date Collected: 09/03/10 11:25
Date Received: 09/03/10
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	10	--	50
2-Chloronaphthalene	ND		ug/l	10	--	50
Fluoranthene	ND		ug/l	10	--	50
Hexachlorobutadiene	ND		ug/l	25	--	50
Naphthalene	360		ug/l	10	--	50
Benzo(a)anthracene	ND		ug/l	10	--	50
Benzo(a)pyrene	ND		ug/l	10	--	50
Benzo(b)fluoranthene	ND		ug/l	10	--	50
Benzo(k)fluoranthene	ND		ug/l	10	--	50
Chrysene	ND		ug/l	10	--	50
Acenaphthylene	ND		ug/l	10	--	50
Anthracene	ND		ug/l	10	--	50
Benzo(ghi)perylene	ND		ug/l	10	--	50
Fluorene	19		ug/l	10	--	50
Phenanthrene	14		ug/l	10	--	50
Dibenzo(a,h)anthracene	ND		ug/l	10	--	50
Indeno(1,2,3-cd)Pyrene	ND		ug/l	10	--	50
Pyrene	ND		ug/l	10	--	50
2-Methylnaphthalene	13		ug/l	10	--	50
Pentachlorophenol	ND		ug/l	40	--	50
Hexachlorobenzene	ND		ug/l	40	--	50
Hexachloroethane	ND		ug/l	40	--	50

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01 D Date Collected: 09/03/10 11:25

Client ID: K-CB Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	21-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	15-120
2,4,6-Tribromophenol	**0**	Q	10-120
4-Terphenyl-d14	**0**	Q	33-120

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID:	L1013727-02	Date Collected:	09/03/10 12:00
Client ID:	K-OF	Date Received:	09/03/10
Sample Location:	FOOD CENTER DRIVE, BRONX, NY	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270C	Extraction Date:	09/08/10 09:12
Analytical Date:	09/10/10 21:05		
Analyst:	JB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	5.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	50	--	1
2,4-Dinitrotoluene	ND		ug/l	6.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	5.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	5.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	30	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	5.0	--	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/l	15	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--	1
Bis(2-Ethylhexyl)phthalate	10		ug/l	5.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Biphenyl	ND		ug/l	5.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	7.0	--	1
Dibenzofuran	19		ug/l	5.0	--	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	20	--	1

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02 Date Collected: 09/03/10 12:00

Client ID: K-OF Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acetophenone	22		ug/l	20	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
P-Chloro-M-Cresol	ND		ug/l	5.0	--	1
2-Chlorophenol	ND		ug/l	6.0	--	1
2,4-Dichlorophenol	ND		ug/l	10	--	1
2,4-Dimethylphenol	19		ug/l	10	--	1
2-Nitrophenol	ND		ug/l	20	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	30	--	1
4,6-Dinitro-o-cresol	ND		ug/l	20	--	1
Phenol	8.3		ug/l	7.0	--	1
2-Methylphenol	11		ug/l	6.0	--	1
3-Methylphenol/4-Methylphenol	29		ug/l	6.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	10	--	1
Carbazole	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	73		33-120

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02 D
Client ID: K-OF
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water
Analytical Method: 1,8270C
Analytical Date: 09/10/10 19:24
Analyst: JC

Date Collected: 09/03/10 12:00
Date Received: 09/03/10
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	4.0	--	20
2-Chloronaphthalene	ND		ug/l	4.0	--	20
Fluoranthene	19		ug/l	4.0	--	20
Hexachlorobutadiene	ND		ug/l	10	--	20
Naphthalene	130		ug/l	4.0	--	20
Benzo(a)anthracene	6.1		ug/l	4.0	--	20
Benzo(a)pyrene	5.6		ug/l	4.0	--	20
Benzo(b)fluoranthene	10		ug/l	4.0	--	20
Benzo(k)fluoranthene	ND		ug/l	4.0	--	20
Chrysene	8.6		ug/l	4.0	--	20
Acenaphthylene	ND		ug/l	4.0	--	20
Anthracene	9.8		ug/l	4.0	--	20
Benzo(ghi)perylene	5.3		ug/l	4.0	--	20
Fluorene	42		ug/l	4.0	--	20
Phenanthrene	62		ug/l	4.0	--	20
Dibenzo(a,h)anthracene	ND		ug/l	4.0	--	20
Indeno(1,2,3-cd)Pyrene	8.2		ug/l	4.0	--	20
Pyrene	15		ug/l	4.0	--	20
2-Methylnaphthalene	14		ug/l	4.0	--	20
Pentachlorophenol	ND		ug/l	16	--	20
Hexachlorobenzene	ND		ug/l	16	--	20
Hexachloroethane	ND		ug/l	16	--	20

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02 D Date Collected: 09/03/10 12:00

Client ID: K-OF Date Received: 09/03/10

Sample Location: FOOD CENTER DRIVE, BRONX, NY Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	21-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	15-120
2,4,6-Tribromophenol	**0**	Q	10-120
4-Terphenyl-d14	**0**	Q	33-120

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 09/10/10 19:24
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG431353-1					
Acenaphthene	ND		ug/l	5.0	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	5.0	--
Bis(2-chloroethyl)ether	ND		ug/l	5.0	--
2-Chloronaphthalene	ND		ug/l	6.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
3,3'-Dichlorobenzidine	ND		ug/l	50	--
2,4-Dinitrotoluene	ND		ug/l	6.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Fluoranthene	ND		ug/l	5.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	5.0	--
4-Bromophenyl phenyl ether	ND		ug/l	5.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	10	--
Hexachlorocyclopentadiene	ND		ug/l	30	--
Hexachloroethane	ND		ug/l	5.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	5.0	--
Nitrobenzene	ND		ug/l	5.0	--
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/l	15	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
Bis(2-Ethylhexyl)phthalate	ND		ug/l	5.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	5.0	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 09/10/10 19:24
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG431353-1					
Benzo(a)pyrene	ND		ug/l	5.0	--
Benzo(b)fluoranthene	ND		ug/l	5.0	--
Benzo(k)fluoranthene	ND		ug/l	5.0	--
Chrysene	ND		ug/l	5.0	--
Acenaphthylene	ND		ug/l	5.0	--
Anthracene	ND		ug/l	5.0	--
Benzo(ghi)perylene	ND		ug/l	5.0	--
Fluorene	ND		ug/l	5.0	--
Phenanthrene	ND		ug/l	5.0	--
Dibenzo(a,h)anthracene	ND		ug/l	5.0	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	7.0	--
Pyrene	ND		ug/l	5.0	--
Biphenyl	ND		ug/l	5.0	--
4-Chloroaniline	ND		ug/l	5.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	7.0	--
Dibenzofuran	ND		ug/l	5.0	--
2-Methylnaphthalene	ND		ug/l	5.0	--
1,2,4,5-Tetrachlorobenzene	ND		ug/l	20	--
Acetophenone	ND		ug/l	20	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
P-Chloro-M-Cresol	ND		ug/l	5.0	--
2-Chlorophenol	ND		ug/l	6.0	--
2,4-Dichlorophenol	ND		ug/l	10	--
2,4-Dimethylphenol	ND		ug/l	10	--
2-Nitrophenol	ND		ug/l	20	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	30	--
4,6-Dinitro-o-cresol	ND		ug/l	20	--
Pentachlorophenol	ND		ug/l	10	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 09/10/10 19:24
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG431353-1					
Phenol	ND		ug/l	7.0	--
2-Methylphenol	ND		ug/l	6.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	10	--
Carbazole	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	27		10-120
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	66		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	77		33-120

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 09/09/10 00:35
Analyst: JC

Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG431355-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 09/09/10 00:35
Analyst: JC

Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-02 Batch: WG431355-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	92		10-120
4-Terphenyl-d14	**127**	Q	33-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG431353-2 WG431353-3								
Acenaphthene	76		73		46-118	4		30
1,2,4-Trichlorobenzene	65		63		39-98	3		30
2-Chloronaphthalene	81		75		40-140	8		30
1,2-Dichlorobenzene	70		65		40-140	7		30
1,4-Dichlorobenzene	69		64		36-97	8		30
2,4-Dinitrotoluene	86		84		24-96	2		30
2,6-Dinitrotoluene	74		71		40-140	4		30
Fluoranthene	85		82		40-140	4		30
4-Chlorophenyl phenyl ether	78		75		40-140	4		30
n-Nitrosodi-n-propylamine	69		64		41-116	8		30
Butyl benzyl phthalate	80		77		40-140	4		30
Anthracene	82		81		40-140	1		30
Pyrene	78		77		26-127	1		30
P-Chloro-M-Cresol	78		75		23-97	4		30
2-Chlorophenol	71		66		27-123	7		30
2-Nitrophenol	73		66		30-130	10		30
4-Nitrophenol	44		37		10-80	17		30
2,4-Dinitrophenol	70		71		20-130	1		30
Pentachlorophenol	77		75		9-103	3		30
Phenol	38		35		12-110	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG431353-2 WG431353-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	49		45		21-120
Phenol-d6	33		32		10-120
Nitrobenzene-d5	70		62		23-120
2-Fluorobiphenyl	70		64		15-120
2,4,6-Tribromophenol	79		79		10-120
4-Terphenyl-d14	77		74		33-120

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG431355-2 WG431355-3								
Acenaphthene	88		80		37-111	10		40
2-Chloronaphthalene	**224**	Q	**204**	Q	40-140	9		40
Fluoranthene	135		128		40-140	5		40
Anthracene	112		101		40-140	10		40
Pyrene	127		120		26-127	6		40
Pentachlorophenol	100		100		9-103	0		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-02 Batch: WG431355-2 WG431355-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	76		62		21-120
Phenol-d6	60		51		10-120
Nitrobenzene-d5	97		86		23-120
2-Fluorobiphenyl	129	Q	97		15-120
2,4,6-Tribromophenol	154	Q	136	Q	10-120
4-Terphenyl-d14	145	Q	127	Q	33-120

PCBS

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID:	L1013727-01	Date Collected:	09/03/10 11:25
Client ID:	K-CB	Date Received:	09/03/10
Sample Location:	FOOD CENTER DRIVE, BRONX, NY	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8082	Extraction Date:	09/08/10 09:19
Analytical Date:	09/09/10 16:02	Cleanup Method1:	EPA 3665A
Analyst:	KB	Cleanup Date1:	09/09/10
		Cleanup Method2:	EPA 3660B
		Cleanup Date2:	09/09/10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Polychlorinated Biphenyls by GC - Westborough Lab						
Aroclor 1016	ND		ug/l	0.083	--	1
Aroclor 1221	ND		ug/l	0.083	--	1
Aroclor 1232	ND		ug/l	0.083	--	1
Aroclor 1242	ND		ug/l	0.083	--	1
Aroclor 1248	ND		ug/l	0.083	--	1
Aroclor 1254	ND		ug/l	0.083	--	1
Aroclor 1260	ND		ug/l	0.083	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	91		30-150	B

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID:	L1013727-02	Date Collected:	09/03/10 12:00
Client ID:	K-OF	Date Received:	09/03/10
Sample Location:	FOOD CENTER DRIVE, BRONX, NY	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8082	Extraction Date:	09/08/10 09:19
Analytical Date:	09/09/10 16:17	Cleanup Method1:	EPA 3665A
Analyst:	KB	Cleanup Date1:	09/09/10
		Cleanup Method2:	EPA 3660B
		Cleanup Date2:	09/09/10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Polychlorinated Biphenyls by GC - Westborough Lab						
Aroclor 1016	ND		ug/l	0.083	--	1
Aroclor 1221	ND		ug/l	0.083	--	1
Aroclor 1232	ND		ug/l	0.083	--	1
Aroclor 1242	ND		ug/l	0.083	--	1
Aroclor 1248	ND		ug/l	0.083	--	1
Aroclor 1254	ND		ug/l	0.083	--	1
Aroclor 1260	ND		ug/l	0.083	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	60		30-150	B

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 09/09/10 17:55
Analyst: KB

Extraction Method: EPA 3510C
Extraction Date: 09/08/10 09:19
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/09/10
Cleanup Method2: EPA 3660B
Cleanup Date2: 09/09/10

Parameter	Result	Qualifier	Units	RL	MDL
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-02 Batch: WG431358-1					
Aroclor 1016	ND		ug/l	0.083	--
Aroclor 1221	ND		ug/l	0.083	--
Aroclor 1232	ND		ug/l	0.083	--
Aroclor 1242	ND		ug/l	0.083	--
Aroclor 1248	ND		ug/l	0.083	--
Aroclor 1254	ND		ug/l	0.083	--
Aroclor 1260	ND		ug/l	0.083	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	106		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG431358-2 WG431358-3								
Aroclor 1016	79		73		40-140	9		30
Aroclor 1260	83		88		40-140	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		78		30-150	A
Decachlorobiphenyl	91		95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		82		30-150	B
Decachlorobiphenyl	102		105		30-150	B

METALS

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01
Client ID: K-CB
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water
Date Collected: 09/03/10 11:25
Date Received: 09/03/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	43		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Antimony, Total	ND		mg/l	0.0020	--	4	09/04/10 15:00	09/08/10 08:19	EPA 3005A	1,6020	BM
Arsenic, Total	0.018		mg/l	0.005	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Barium, Total	0.040		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Beryllium, Total	0.0049		mg/l	0.0020	--	4	09/04/10 15:00	09/08/10 08:19	EPA 3005A	1,6020	BM
Cadmium, Total	0.008		mg/l	0.005	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Calcium, Total	230		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Chromium, Total	0.93		mg/l	0.01	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Cobalt, Total	0.027		mg/l	0.020	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Copper, Total	0.027		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Iron, Total	600		mg/l	0.05	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Lead, Total	0.053		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Magnesium, Total	36		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Manganese, Total	3.73		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Mercury, Total	ND		mg/l	0.0002	--	1	09/09/10 17:30	09/10/10 12:52	EPA 7470A	1,7470A	TD
Nickel, Total	0.122		mg/l	0.025	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Potassium, Total	18		mg/l	2.5	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Selenium, Total	0.016		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Silver, Total	ND		mg/l	0.007	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Sodium, Total	73		mg/l	2.0	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Thallium, Total	ND		mg/l	0.0020	--	4	09/04/10 15:00	09/08/10 08:19	EPA 3005A	1,6020	BM
Vanadium, Total	0.053		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:56	EPA 3005A	1,6010B	AI
Zinc, Total	1.51		mg/l	0.500	--	10	09/04/10 14:30	09/07/10 17:58	EPA 3005A	1,6010B	AI

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02
Client ID: K-OF
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water
Date Collected: 09/03/10 12:00
Date Received: 09/03/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	47		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Antimony, Total	0.0147		mg/l	0.0020	--	4	09/04/10 15:00	09/08/10 08:37	EPA 3005A	1,6020	BM
Arsenic, Total	0.134		mg/l	0.005	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Barium, Total	0.168		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Beryllium, Total	0.0045		mg/l	0.0020	--	4	09/04/10 15:00	09/08/10 08:37	EPA 3005A	1,6020	BM
Cadmium, Total	0.009		mg/l	0.005	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Calcium, Total	240		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Chromium, Total	1.0		mg/l	0.01	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Cobalt, Total	0.030		mg/l	0.020	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Copper, Total	0.329		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Iron, Total	620		mg/l	0.05	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Lead, Total	0.318		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Magnesium, Total	38		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Manganese, Total	3.95		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Mercury, Total	0.0003		mg/l	0.0002	--	1	09/09/10 17:30	09/10/10 12:54	EPA 7470A	1,7470A	TD
Nickel, Total	0.140		mg/l	0.025	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Potassium, Total	20		mg/l	2.5	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Selenium, Total	0.017		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Silver, Total	ND		mg/l	0.007	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Sodium, Total	79		mg/l	2.0	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Thallium, Total	ND		mg/l	0.0020	--	4	09/04/10 15:00	09/08/10 08:37	EPA 3005A	1,6020	BM
Vanadium, Total	0.069		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 15:09	EPA 3005A	1,6010B	AI
Zinc, Total	1.67		mg/l	0.500	--	10	09/04/10 14:30	09/07/10 18:11	EPA 3005A	1,6010B	AI

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01-02 Batch: WG431095-1										
Aluminum, Total	ND		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Arsenic, Total	ND		mg/l	0.005	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Barium, Total	ND		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Cadmium, Total	ND		mg/l	0.005	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Calcium, Total	ND		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Chromium, Total	ND		mg/l	0.01	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Cobalt, Total	ND		mg/l	0.020	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Copper, Total	ND		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Iron, Total	ND		mg/l	0.05	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Lead, Total	ND		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Magnesium, Total	ND		mg/l	0.10	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Manganese, Total	ND		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Nickel, Total	ND		mg/l	0.025	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Potassium, Total	ND		mg/l	2.5	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Selenium, Total	ND		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Silver, Total	ND		mg/l	0.007	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Sodium, Total	ND		mg/l	2.0	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Vanadium, Total	ND		mg/l	0.010	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI
Zinc, Total	ND		mg/l	0.050	--	1	09/04/10 14:30	09/07/10 14:50	1,6010B	AI

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01-02 Batch: WG431097-1										
Antimony, Total	ND		mg/l	0.0005	--	1	09/04/10 15:00	09/07/10 22:52	1,6020	BM
Beryllium, Total	ND		mg/l	0.0005	--	1	09/04/10 15:00	09/07/10 22:52	1,6020	BM
Thallium, Total	ND		mg/l	0.0005	--	1	09/04/10 15:00	09/07/10 22:52	1,6020	BM

Project Name: KRASDALE FOODS SITE **Lab Number:** L1013727

Project Number: 80222-0005 **Report Date:** 09/14/10

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01-02 Batch: WG431703-1										
Mercury, Total	ND		mg/l	0.0002	--	1	09/09/10 17:30	09/10/10 12:40	1,7470A	TD

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-02 Batch: WG431095-2								
Aluminum, Total	100		-		80-120	-		
Arsenic, Total	111		-		80-120	-		
Barium, Total	100		-		80-120	-		
Cadmium, Total	111		-		80-120	-		
Calcium, Total	100		-		80-120	-		
Chromium, Total	100		-		80-120	-		
Cobalt, Total	104		-		80-120	-		
Copper, Total	102		-		80-120	-		
Iron, Total	110		-		80-120	-		
Lead, Total	105		-		80-120	-		
Magnesium, Total	100		-		80-120	-		
Manganese, Total	103		-		80-120	-		
Nickel, Total	99		-		80-120	-		
Potassium, Total	99		-		80-120	-		
Selenium, Total	112		-		80-120	-		
Silver, Total	103		-		80-120	-		
Sodium, Total	100		-		80-120	-		
Vanadium, Total	100		-		80-120	-		
Zinc, Total	103		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-02 Batch: WG431097-2					
Antimony, Total	94	-	80-120	-	
Beryllium, Total	95	-	80-120	-	
Thallium, Total	90	-	80-120	-	
Total Metals - Westborough Lab Associated sample(s): 01-02 Batch: WG431703-2					
Mercury, Total	108	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431095-4 QC Sample: L1013727-01 Client ID: K-CB												
Aluminum, Total	43	2	47	**200**		-	-		75-125	-		20
Arsenic, Total	0.018	0.12	0.156	115		-	-		75-125	-		20
Barium, Total	0.040	2	1.98	97		-	-		75-125	-		20
Cadmium, Total	0.008	0.051	0.060	103		-	-		75-125	-		20
Calcium, Total	230	10	250	**200**		-	-		75-125	-		20
Chromium, Total	0.93	0.2	1.1	85		-	-		75-125	-		20
Cobalt, Total	0.027	0.5	0.513	97		-	-		75-125	-		20
Copper, Total	0.027	0.25	0.288	104		-	-		75-125	-		20
Iron, Total	600	1	620	**2000**		-	-		75-125	-		20
Lead, Total	0.053	0.51	0.530	93		-	-		75-125	-		20
Magnesium, Total	36	10	45	90		-	-		75-125	-		20
Manganese, Total	3.73	0.5	4.39	**132**		-	-		75-125	-		20
Nickel, Total	0.122	0.5	0.578	91		-	-		75-125	-		20
Potassium, Total	18	10	28	100		-	-		75-125	-		20
Selenium, Total	0.016	0.12	0.108	76		-	-		75-125	-		20
Silver, Total	ND	0.05	0.051	101		-	-		75-125	-		20
Sodium, Total	73	10	88	**150**		-	-		75-125	-		20
Vanadium, Total	0.053	0.5	0.528	95		-	-		75-125	-		20
Zinc, Total	1.51	0.5	2.03	104		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431097-4 QC Sample: L1013718-01 Client ID: MS Sample									
Antimony, Total	ND	0.5	0.5319	106	-	-	80-120	-	20
Beryllium, Total	ND	0.05	0.0474	95	-	-	80-120	-	20
Thallium, Total	ND	0.12	0.1127	94	-	-	80-120	-	20
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431703-4 QC Sample: L1013807-08 Client ID: MS Sample									
Mercury, Total	ND	0.001	0.0011	108	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431095-3 QC Sample: L1013727-01 Client ID: K-CB						
Aluminum, Total	43	44	mg/l	2		20
Arsenic, Total	0.018	0.019	mg/l	7		20
Barium, Total	0.040	0.044	mg/l	8		20
Cadmium, Total	0.008	0.008	mg/l	1		20
Calcium, Total	230	230	mg/l	0		20
Chromium, Total	0.93	0.94	mg/l	1		20
Cobalt, Total	0.027	0.027	mg/l	1		20
Copper, Total	0.027	0.025	mg/l	7		20
Iron, Total	600	600	mg/l	0		20
Lead, Total	0.053	0.054	mg/l	2		20
Magnesium, Total	36	36	mg/l	0		20
Manganese, Total	3.73	3.81	mg/l	2		20
Nickel, Total	0.122	0.124	mg/l	2		20
Potassium, Total	18	18	mg/l	0		20
Selenium, Total	0.016	0.014	mg/l	15		20
Silver, Total	ND	ND	mg/l	NC		20
Sodium, Total	73	75	mg/l	3		20
Vanadium, Total	0.053	0.054	mg/l	2		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431095-3 QC Sample: L1013727-01 Client ID: K-CB					
Zinc, Total	1.51	1.44	mg/l	5	20
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431703-3 QC Sample: L1013807-08 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-01
Client ID: K-CB
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water

Date Collected: 09/03/10 11:25
Date Received: 09/03/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.741		mg/l	0.050	--	10	09/07/10 15:00	09/08/10 12:38	1,9010B/9012A	JO
Cyanide, Amenable	0.340		mg/l	0.050	--	10	09/08/10 11:00	09/10/10 14:52	1,9010B	JO
pH	2.0		SU	-	NA	1	-	09/03/10 22:43	1,9040B	JW

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

SAMPLE RESULTS

Lab ID: L1013727-02
Client ID: K-OF
Sample Location: FOOD CENTER DRIVE, BRONX, NY
Matrix: Water

Date Collected: 09/03/10 12:00
Date Received: 09/03/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.521		mg/l	0.025	--	5	09/07/10 15:00	09/08/10 12:41	1,9010B/9012A	JO
Cyanide, Amenable	0.051		mg/l	0.050	--	10	09/08/10 11:00	09/10/10 14:52	1,9010B	JO
pH	2.1		SU	-	NA	1	-	09/03/10 22:43	1,9040B	JW

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005
Lab Number: L1013727
Report Date: 09/14/10

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG431210-3										
Cyanide, Total	ND		mg/l	0.005	--	1	09/07/10 15:00	09/08/10 12:10	1,9010B/9012A	JO
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG431365-2										
Cyanide, Amenable	ND		mg/l	0.010	--	2	09/08/10 11:00	09/10/10 14:52	1,9010B	JO

Lab Control Sample Analysis

Batch Quality Control

Project Name: KRASDALE FOODS SITE

Project Number: 80222-0005

Lab Number: L1013727

Report Date: 09/14/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG431044-1								
pH	101		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG431210-1 WG431210-2								
Cyanide, Total	94		87		80-120	8		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG431365-1								
Cyanide, Amenable	86		-			-		

Matrix Spike Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431210-4 WG431210-5 QC Sample: L1013727-01 Client ID: K-CB												
Cyanide, Total	0.741	0.2	0.871	**65**	Q	0.886	**72**	Q	80-120	2		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431044-2 QC Sample: L1013727-01 Client ID: K-CB						
pH	2.0	2.0	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG431365-3 QC Sample: L1013727-02 Client ID: K-OF						
Cyanide, Amenable	0.051	0.088	mg/l	53		

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1013727-01A	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-01B	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-01C	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-01D	Amber 1000ml unpreserved	A	<2	3.0	Y	Absent	NYTCL-8082(7)
L1013727-01E	Amber 1000ml unpreserved	A	<2	3.0	Y	Absent	NYTCL-8270(7),NYTCL-8270-SIM(7)
L1013727-01F	Amber 1000ml unpreserved	A	<2	3.0	Y	Absent	NYTCL-8270(7),NYTCL-8270-SIM(7)
L1013727-01G	Plastic 500ml HNO3 preserved	A	<2	3.0	Y	Absent	TL-6020T(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),BE-6020T(180),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),SB-6020T(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1013727-01I	Plastic 250ml unpreserved split	A	<2	3.0	Y	Absent	PH-9040(1)
L1013727-01J	Plastic 250ml NaOH preserved	A	>12	3.0	Y	Absent	TCN-9010(14),ACN-9010(14)
L1013727-02A	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-02B	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-02C	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-02D	Amber 1000ml unpreserved	A	<2	3.0	Y	Absent	NYTCL-8082(7)
L1013727-02E	Amber 1000ml unpreserved	A	<2	3.0	Y	Absent	NYTCL-8270(7),NYTCL-8270-SIM(7)
L1013727-02F	Amber 1000ml unpreserved	A	<2	3.0	Y	Absent	NYTCL-8270(7),NYTCL-8270-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: KRASDALE FOODS SITE
Project Number: 80222-0005

Lab Number: L1013727
Report Date: 09/14/10

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1013727-02G	Plastic 500ml HNO3 preserved	A	<2	3.0	Y	Absent	TL-6020T(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),BE-6020T(180),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),SB-6020T(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1013727-02I	Plastic 250ml unpreserved split	A	<2	3.0	Y	Absent	PH-9040(1)
L1013727-02J	Plastic 250ml NaOH preserved	A	>12	3.0	Y	Absent	TCN-9010(14),ACN-9010(14)
L1013727-03A	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)
L1013727-03B	Vial HCl preserved	A	N/A	3.0	Y	Absent	NYTCL-8260(14)

Container Comments

L1013727-01F

L1013727-02F

*Values in parentheses indicate holding time in days

Project Name:	KRASDALE FOODS SITE	**Lab Number:**	L1013727
Project Number:	80222-0005	**Report Date:**	09/14/10

GLOSSARY

Acronyms

EPA · Environmental Protection Agency.

LCS · Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD · Laboratory Control Sample Duplicate: Refer to LCS.

MDL · Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS · Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD · Matrix Spike Sample Duplicate: Refer to MS.

NA · Not Applicable.

NC · Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI · Not Ignitable.

RL · Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD · Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	KRASDALE FOODS SITE	**Lab Number:**	L1013727
Project Number:	80222-0005	**Report Date:**	09/14/10

Data Qualifiers

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised July 19, 2010 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. ***NELAP Accredited Solid Waste/Soil.***

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))
Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)
Solid Waste/Soil (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3.3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)
Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624, ME DRO, ME GRO, MA EPH, MA VPH.)
*Solid Waste/Soil (*Organic Parameters: ME DRO, ME GRO, MA EPH, MA VPH.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.
Drinking Water
Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)
(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate)
353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.
Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)
(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.
Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; MF-SM9222D
Non-Potable Water
Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)
(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Ti,Tl, V,Zn,Ca,Mg,Na,K)
245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables, 600/4-81-045-PCB-Oil

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)
Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)
Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)
Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)
Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

New York Department of Health Certificate/Lab ID: 11148. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)
Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, S\M3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)
Solid & Hazardous Waste (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
Non-Potable Water (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)
Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NY-DOH.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NY-DOH Certificate for Potable and Non-Potable Water.

Texas Commisson on Environmental Quality Certificate/Lab ID: T104704476-09-1. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 $S2^{-}$D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Department of Defense Certificate/Lab ID: L2217.
Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 9251, 9038, 350.1, 353.2, 351.1, 120.1, 9050A , 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO4-E, 426C, 4500NH3-B, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S2-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035, MassDEP EPH, MassDEP VPH.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No:09141014:38

Date Rec'd in Lab: 9/3/10

ALPHA Job #: L1013727

Client Information

Client: AKRF, Inc.
Address: 440 Park Avenue South 7th Floor
Phone: 646-388-9729
Fax: 212-726-0942
Email: aschwendt@akrf.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Krasdale Foods Site
Project Location: Food Center Drive, Bronx NY
Project #: 80222-0005
Project Manager: Axel Schwendt
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 9/13/10 Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☑ Same as Client info PO #: 80222-0005

Regulatory Requirements/Report Limits

State /Fed Program: NYSDEC TOGS Groundwater Standards
Criteria:

Other Project Specific Requirements/Comments/Detection Limits:
* AKRF Project Manager will call with potential additional Standards to include. Please do pH analysis on both samples in lab.

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs (8260)	TCL SVOCs (8270)	PCBs (8082)	TAL Metals (6000/7000 series) (plus Copper)	Total and Amenable CN (9010B)	pH	Sample Specific Comments	TOTAL # BOTTLES
13727 1	K-CB	9/3/10	1125	SW	SG	X	X	X	X	X	X	X	K-CB = Catch Basin	8
2	K-OF	9/3/10	1200	SW	SG	X	X	X	X	X	X	X	K-OF = Outfall	8
3	K-TB	9/3/10	1210		SG	X							K-TB = Trip Blank	1
													* - AKRF Project Manager will Call with Potential additional Standards to include.	

SAMPLE HANDLING
Filtration
☐ Done ☒ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

Container Type	V	A	A	P	P	P	
Preservative	B	A	A	C	C	E	

Relinquished By:	Date/Time	Received By:	Date/Time
	9/7/11 1510		
	9/3/10 1635		
	9/3/10 1955		9/4/10 0510

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ARCADIS

Appendix C

Savin CCTV Inspection Logs

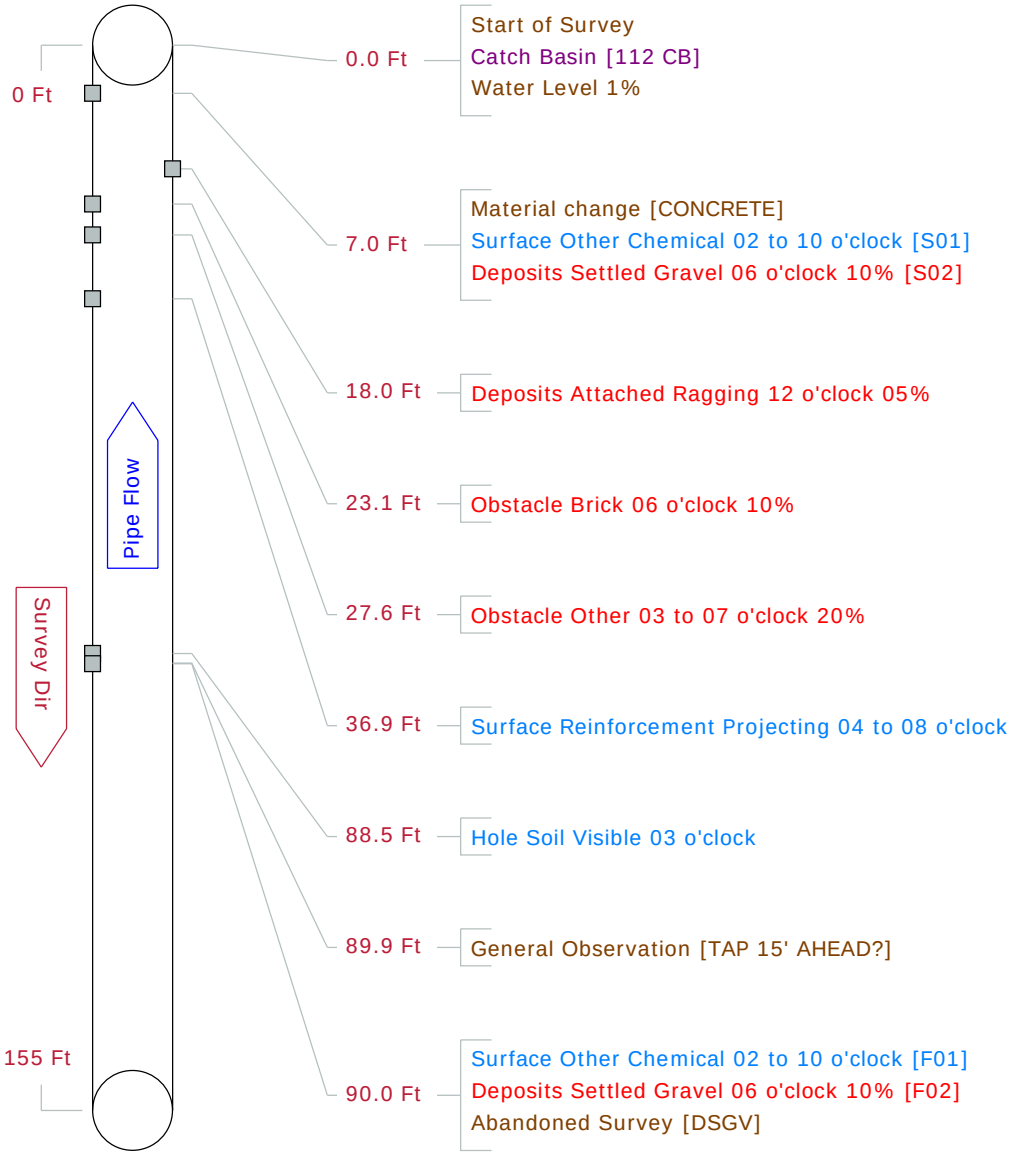
Pipe Graphic Report of PLR 111 CB X **for** ARCADIS

Setup	1/2	**Surveyor**	SAV-JAM	**Certificate #**	U-305-1920	**System Owner**	CON ED
Drainage	PARKING LOT	**Survey Customer**	X0001				
P/O #	NA	**Date**	2010/12/14	**Time**	9:43	**Street**	400 FOOD CENTER DR
Locality	BRONX NY	**Further location details**	VIDEO SHOWS US CB AS 111 CB				

Start	112 CB	**Rim to invert**	45.00	**Grade to invert**		**Rim to grade**	**Ft**
Finish	113 CB	**Rim to invert**	39.00	**Grade to invert**		**Rim to grade**	**Ft**

Use	Storm Water	**Direction**	Upstream	**Flow control**	Not controlled	**Tape/Media #**	X001
Shape	Circular	**Height**	12	**Width**	**ins**	**Preclean**	N
Material	Reinforced Concrete Pipe	**Joint length**	**Ft**	**Total length**	155.0	**Ft**	**Length Surveyed** 90.00
Lining		**Year laid**		**Year rehabilitated**		**Weather**	Dry
Purpose	Post Rehabilitation Survey			**Cat**			

Additional info FIRST 6 FT ARE VC, H2S READINGS OF 15-25	Structural O&M Constructional
Location Parking Lot	Miscellaneous Hydraulic



Savin Engineers, P.C.

Savin Engineers, P.C.
Phone: (914) 769-3200
Fax: (914) 747-6686

Pipe Graphic Report of PLR 111 CB X **for** ARCADIS

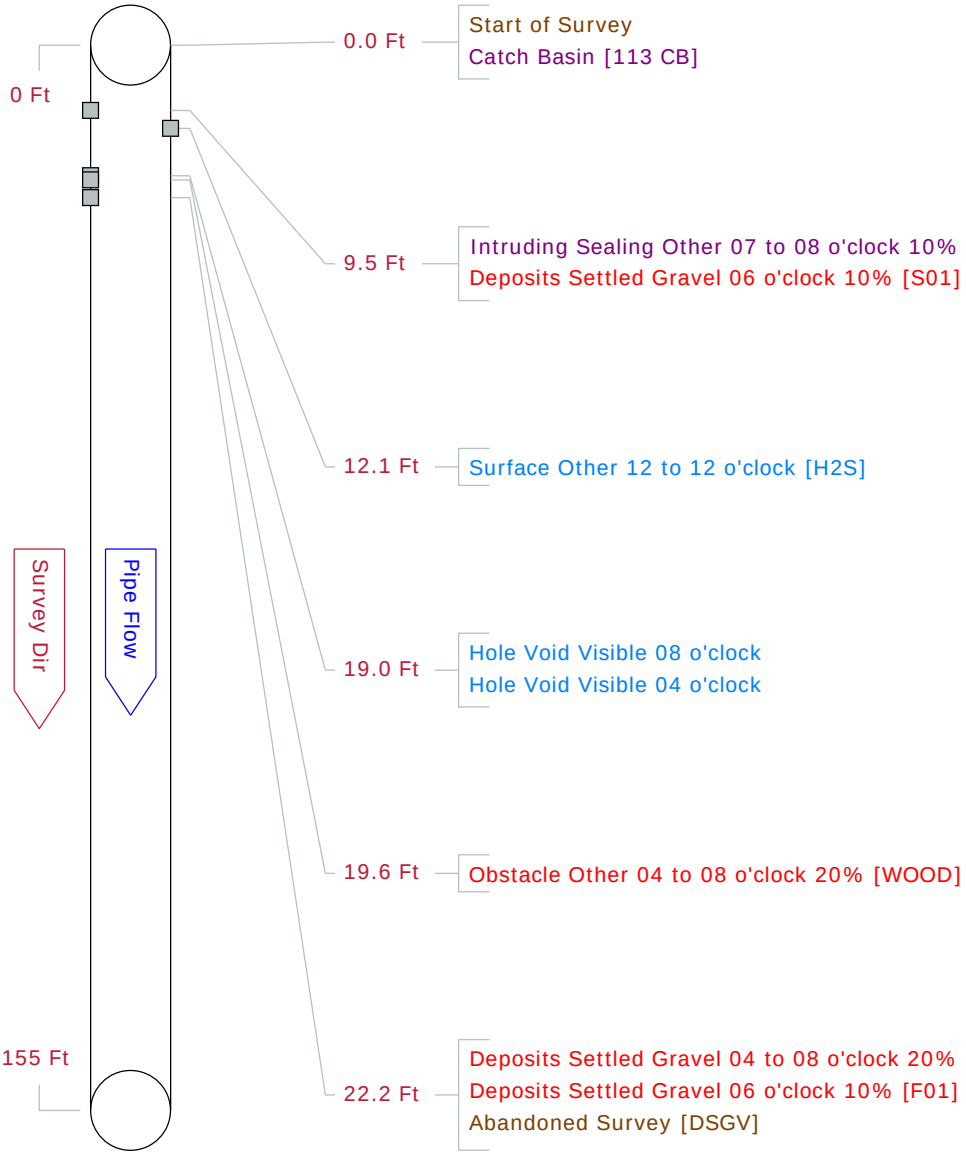
Setup	2/1	**Surveyor**	SAV-JAM	**Certificate #**	U-305-1920	**System Owner**	CON ED
Drainage	PARKING LOT	**Survey Customer**	X0002				
P/O #	NA	**Date**	2010/12/14	**Time**	9:43	**Street**	400 FOOD CENTER DR
Locality	BRONX NY	**Further location details**	VIDEO SHOWS US CB AS 111 CB				

Start	113 CB	**Rim to invert**	39.00	**Grade to invert**		**Rim to grade**	**Ft**
Finish	112 CB	**Rim to invert**	45.00	**Grade to invert**		**Rim to grade**	**Ft**

Use	Storm Water	**Direction**	Downstream	**Flow control**	Not controlled	**Tape/Media #**	X001
Shape	Circular	**Height**	12	**Width**	**ins**	**Preclean**	N
Material	Reinforced Concrete Pipe	**Joint length**	**Ft**	**Total length**	155.0	**Ft**	**Length Surveyed** 22.20
Lining		**Year laid**		**Year rehabilitated**		**Weather**	Dry
Purpose	Post Rehabilitation Survey			**Cat**			

Additional info	Reverse set up on sheet:1
Location	Parking Lot

Structural O&M Constructional
Miscellaneous Hydraulic



Savin Engineers, P.C.
Phone: (914) 769-3200
Fax: (914) 747-6686

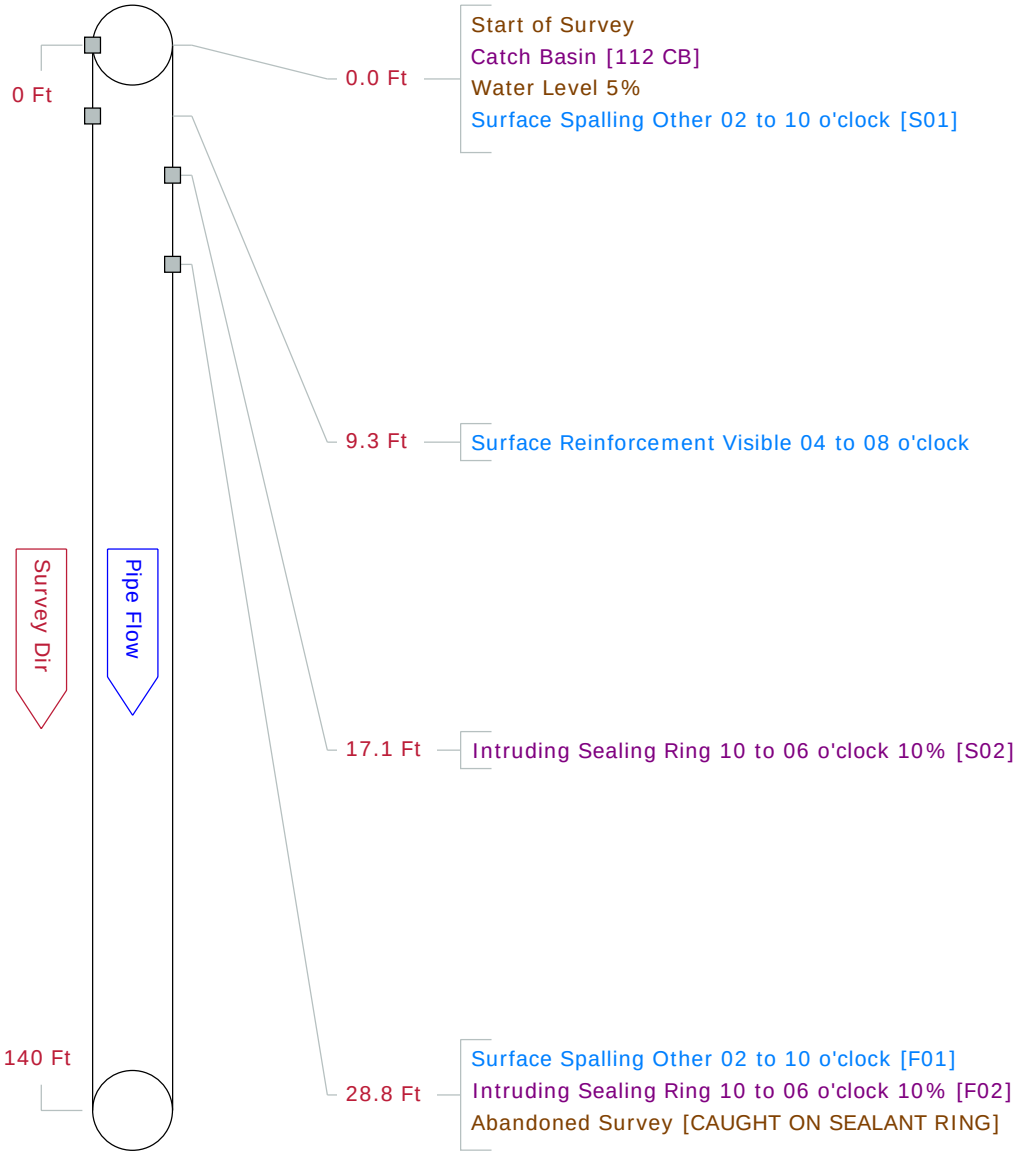
Pipe Graphic Report of PLR 112 CB X **for** ARCADIS

Setup	3/4	**Surveyor**	SAV-JAM	**Certificate #**	U-305-1920	**System Owner**	CON ED
Drainage	PARKING LOT	**Survey Customer**	X0003				
P/O #	NA	**Date**	2010/12/14	**Time**	11:24	**Street**	400 FOOD CENTER DR
Locality	BRONX NY	**Further location details**					

Start	112 CB	**Rim to invert**	39.00	**Grade to invert**		**Rim to grade**	**Ft**
Finish	111 CB	**Rim to invert**		**Grade to invert**		**Rim to grade**	**Ft**

Use	Storm Water	**Direction**	Downstream	**Flow control**	Not controlled			**Tape/Media #**	X001
Shape	Circular	**Height**	16	**Width**	**ins**	**Preclean**	N	**Year Cleaned**	
Material	Reinforced Concrete Pipe	**Joint length**	**Ft**	**Total length**	140.0	**Ft**	**Length Surveyed**	28.80	
Lining		**Year laid**		**Year rehabilitated**		**Weather**	Dry		
Purpose	Post Rehabilitation Survey			**Cat**					

Additional info H2S READINGS OF 15-25	Structural O&M Constructional
Location Parking Lot	Miscellaneous Hydraulic



Savin Engineers, P.C.

Savin Engineers, P.C.
Phone: (914) 769-3200
Fax: (914) 747-6686

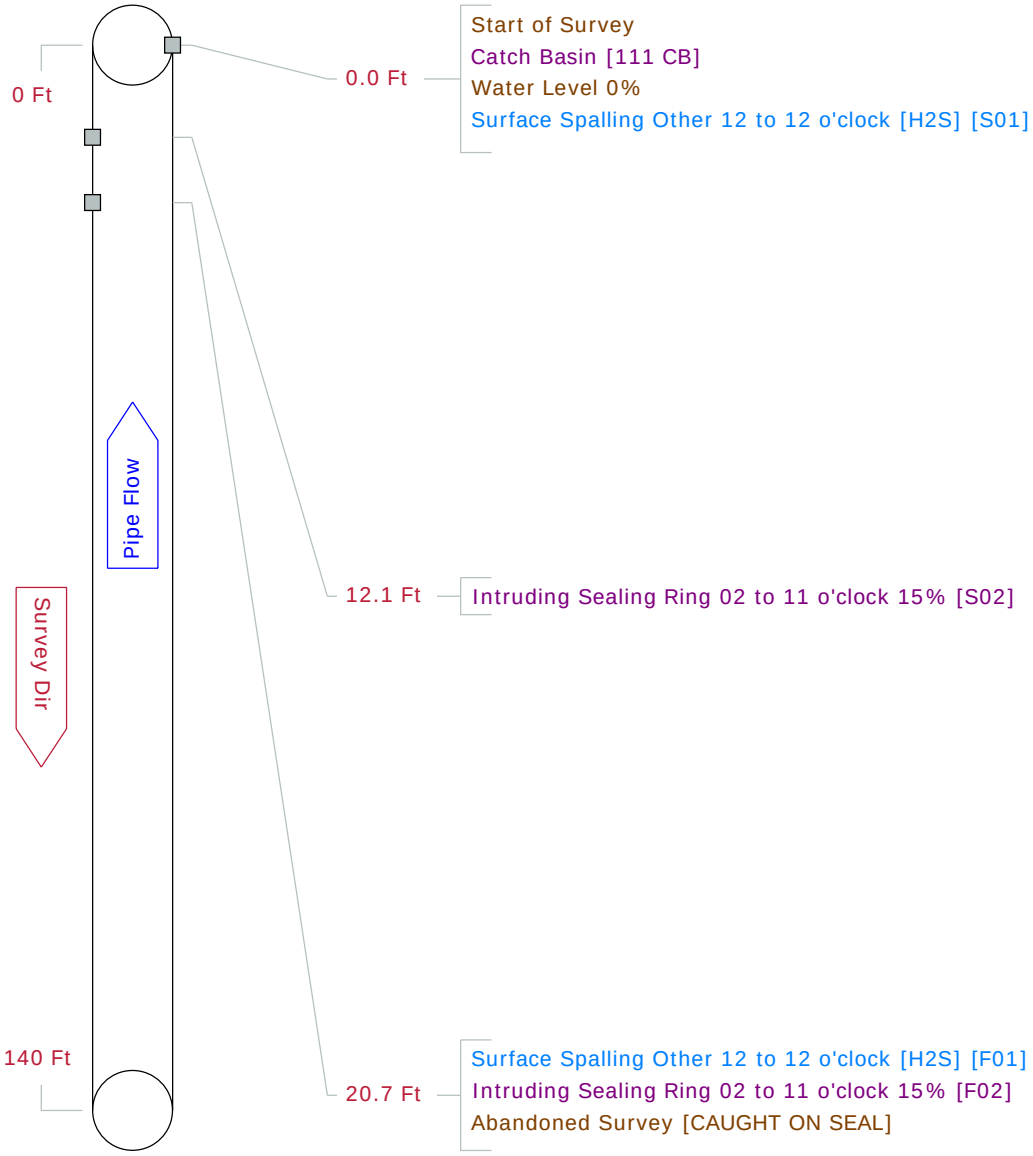
Pipe Graphic Report of PLR 112 CB X **for** ARCADIS

Setup	4/3	**Surveyor**	SAV-JAM	**Certificate #**	U-305-1920	**System Owner**	CON ED
Drainage	PARKING LOT	**Survey Customer**	X0004				
P/O #	NA	**Date**	2010/12/14	**Time**	11:57	**Street**	400 FOOD CENTER DR
Locality	BRONX NY	**Further location details**					

Start	111 CB	**Rim to invert**		**Grade to invert**		**Rim to grade**		**Ft**	
Finish	112 CB	**Rim to invert**	39.00	**Grade to invert**		**Rim to grade**		**Ft**	
Use	Storm Water	**Direction**	Upstream	**Flow control**	Not controlled	**Tape/Media #**	X001		
Shape	Circular	**Height**	16	**Width**	**ins**	**Preclean**	N	**Year Cleaned**	
Material	Reinforced Concrete Pipe	**Joint length**	**Ft**	**Total length**	140.0	**Ft**	**Length Surveyed**	20.70	
Lining		**Year laid**		**Year rehabilitated**		**Weather**	Dry		
Purpose	Post Rehabilitation Survey			**Cat**					

Additional info	H2S 47, Reverse set up on sheet:3
Location	Parking Lot

Structural O&M Constructional
Miscellaneous Hydraulic

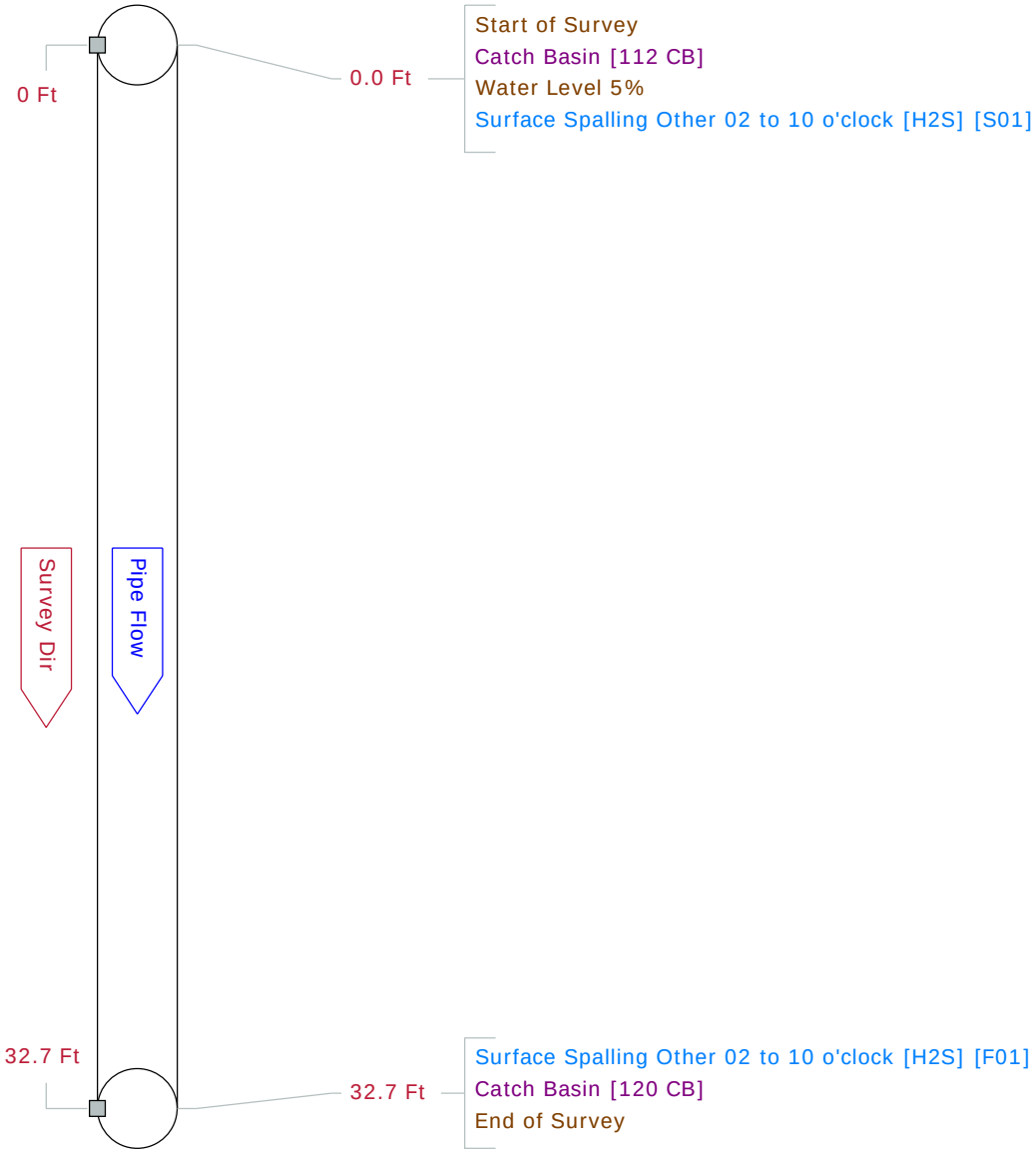


Savin Engineers, P.C.

Savin Engineers, P.C.
Phone: (914) 769-3200
Fax: (914) 747-6686

Pipe Graphic Report of PLR 111 CB A **for** ARCADIS

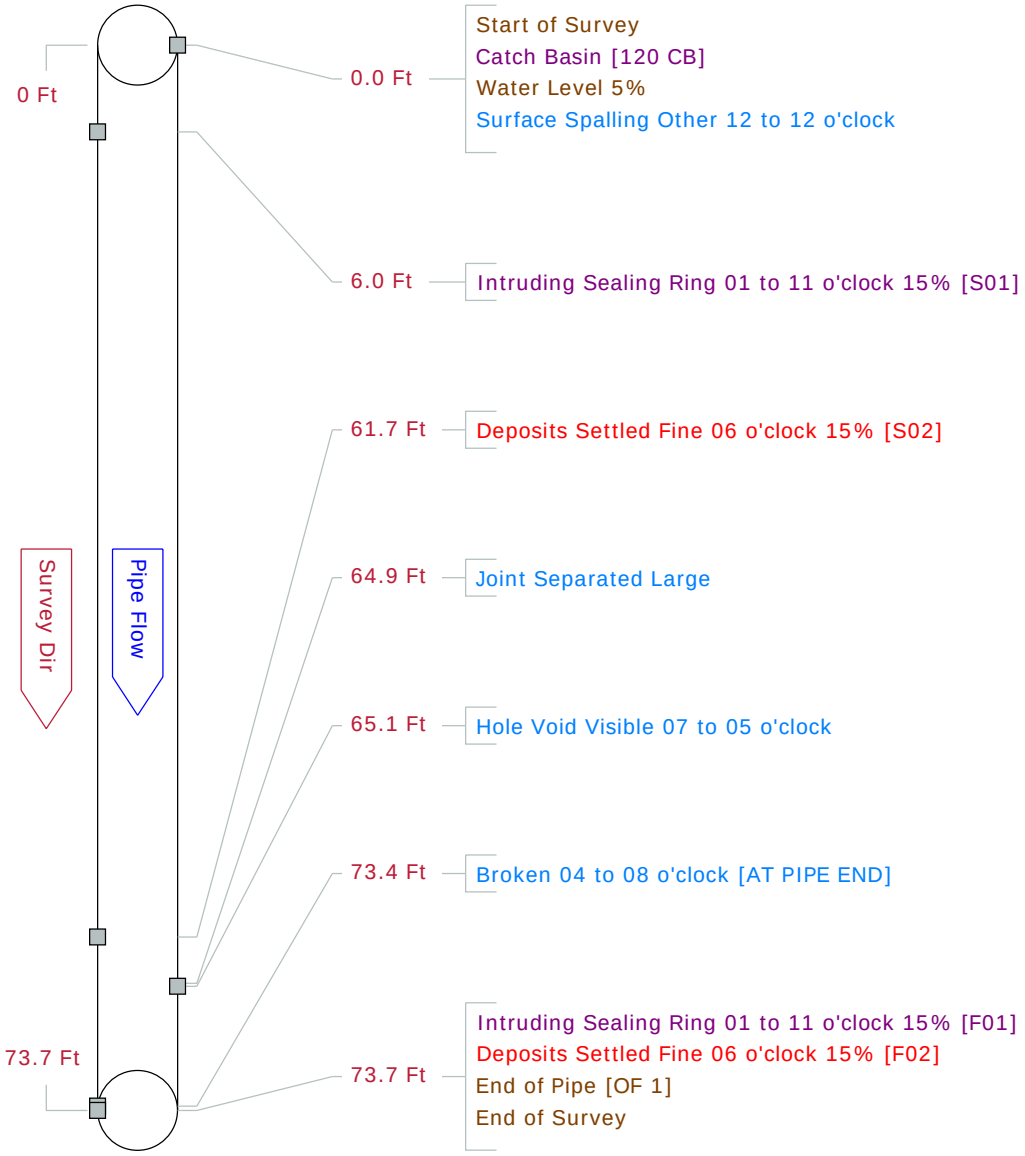
Setup 5	**Surveyor** SAV-JAM	**Certificate #** U-305-1920	**System Owner** CON ED		
Drainage PARKING LOT	**Survey Customer** X0005				
P/O # NA	**Date** 2010/12/14	**Time** 12:41	**Street** 400 FOOD CENTER DR		
Locality BRONX NY	**Further location details**				
Start 111 CB	**Rim to invert** 39.00	**Grade to invert**	**Rim to grade**	**Ft**	
Finish 120 CB	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use Storm Water	**Direction** Downstream	**Flow control** Not controlled	**Tape/Media #** X001		
Shape Circular	**Height** 16	**Width** **ins**	**Preclean** N	**Year Cleaned**	
Material Reinforced Concrete Pipe	**Joint length** **Ft**	**Total length** 32.7 **Ft**	**Length Surveyed** 32.70		
Lining	**Year laid**	**Year rehabilitated**	**Weather** Dry		
Purpose Post Rehabilitation Survey		**Cat**			
Additional info H2S 47,		Structural	O&M	Constructional	
Location Parking Lot		Miscellaneous	Hydraulic		



Savin Engineers, P.C.
Phone: (914) 769-3200
Fax: (914) 747-6686

Pipe Graphic Report of PLR 120 CB A **for** ARCADIS

Setup 6	**Surveyor** SAV-JAM	**Certificate #** U-305-1920	**System Owner** CON ED		
Drainage PARKING LOT	**Survey Customer** X0006				
P/O # NA	**Date** 2010/12/14	**Time** 12:59	**Street** 400 FOOD CENTER DR		
Locality BRONX NY	**Further location details**				
Start 120 CB	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Finish OF 1	**Rim to invert**	**Grade to invert**	**Rim to grade**	**Ft**	
Use Storm Water	**Direction** Downstream	**Flow control** Not controlled	**Tape/Media #** X001		
Shape Circular	**Height** 16	**Width** ins	**Preclean** N	**Year Cleaned**	
Material Reinforced Concrete Pipe	**Joint length** Ft	**Total length** 73.7 Ft	**Length Surveyed** 73.70		
Lining	**Year laid**	**Year rehabilitated**	**Weather** Dry		
Purpose Post Rehabilitation Survey	**Cat**				
Additional info H2S 47,	Structural	O&M	Constructional		
Location Parking Lot	Miscellaneous	Hydraulic			



Savin Engineers, P.C.

Savin Engineers, P.C.
Phone: (914) 769-3200
Fax: (914) 747-6686

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Appendix D

Construction Cost Estimates

Table D-1
Rehabilitation Measure 1 - Surface Drainage Improvements with Existing Subject Storm Sewer Closure

Dry Weather Discharge Evaluation Work Plan
Consolidated Edison Company of New York, Inc.
Hunts Point Former Manufactured Gas Plant - Bronx, New York

Item #	Description	Quantity	Unit	Unit Price	Amount
1	Treatability Testing for Grout	1	LS	$25,000	$25,000
2	Mobilization/Demobilization	1	LS	$11,000	$11,000
3	Utilities Location and Markout	1	day	$5,000	$5,000
4	Construct and Remove Equipment Decontamination Pad	1	LS	$10,000	$10,000
5	Erosion Control	1	LS	$2,000	$2,000
6	Power Wash Storm Sewer and Catch Basins	500	LF	$50	$25,000
7	Collect Wash Water and Transport Off Site for Treatment and Disposal	1	LS	$5,000	$5,000
8	Sawcut Asphalt	1,000	LF	$12	$12,000
9	Construct New Drainage Swale	350	SY	$25	$8,750
10	Install HDPE Manhole near Outfall OF-1	1	LS	$2,000	$2,000
11	Survey Control	1	LS	$5,000	$5,000
12	In-Place Closure of Existing Storm Sewer	50	CY	$125	$6,250
13	Waste Characterization	2	each	$1,200	$2,400
14	Transportation and Disposal, Non-Hazardous Waste	125	ton	$150	$18,750
				Subtotal Capital Cost	$138,150
				Administration and Engineering (25%)	$28,288
				Construction Management (20%)	$22,630
				Contingency (25%)	$34,538
				Total Estimated Cost	**$223,605**
				Rounded to	**$223,600**

CY = cubic yard
HDPE = high-density polyethylene
LF = linear feet
LS = lump sum
SY = square yard

General Notes:

1. Cost estimate is based on ARCADIS' past experience and vendor estimates using 2010 dollars.
2. This estimate has been prepared for the purposes of comparing potential sewer rehabilitation alternatives. The information in this cost estimate is based on the available information regarding the sewer inspection and the anticipated scope of the respective alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering/ design. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services, as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Treatability study cost estimate includes labor, equipment, and materials necessary to conduct bench-scale compatibility testing of a grout mixture for closure of the existing storm sewer. Cost assumes that the bench-scale testing will evaluate the grout mixture compatibility with impacted (low pH) site groundwater.
2. Mobilization/demobilization cost estimate includes mobilization and demobilization of all equipment, materials, and labor necessary to complete storm sewer closure and installation of the new drainage swale. Estimated as 10% of subtotal capital costs, excluding disposal.
3. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company at a daily rate of $5,000 per day.
4. Construct and remove equipment decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of 40-mil high-density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a 1-foot high berm and sloped to a collection sump for the collection of decontamination water.
5. Erosion control cost estimate includes all labor, equipment, and materials necessary to purchase, install, and maintain a double-row 3-foot silt fence and hay-bale barrier between the end of the storm sewer and/or bypass discharge pipe and the Bronx River.
6. Power wash storm sewer and catch basin cost estimate includes all labor, materials, and equipment necessary to hydroflush the storm sewers to remove sediments and debris in preparation for in-place closure. Estimate includes costs to collect wash water.
7. Transport wash water off site for treatment and disposal cost estimate includes all labor, materials, and equipment necessary to containerize the wash water and transport off site to a permitted treatment facility. Estimate assumes the wash water will be a non-hazardous liquid.
8. Sawcut asphalt cost includes labor and equipment for the removal of the top 6 inches of existing surface pavement along the length of the proposed drainage swale alignment (assumed to be 500 feet long and 6 feet wide).
9. Construct new drainage swale cost estimate includes labor, equipment, and materials to grade the subsurface materials to create the swale, and install a 6-inch-thick asphalt drainage swale that is 500 feet long and terminates in a new manhole connected to existing outfall OF-1. Estimate assumes existing subgrade materials are suitable for swale construction and that select fill will not be required.
10. Install HDPE Manhole near outfall OF-1 cost assumes all material and labor necessary for installation of a new manhole structure at the terminus of the new drainage swale and connected to existing outfall OF-1. Estimated costs are based on supplier quotes and include cover and installation.
11. Survey control cost estimate includes all labor and equipment necessary to provide on-site survey during construction activities. Cost estimate assumes site survey would be completed to establish pre-construction grades, planned and completed limits, and final site grades and preparation of a final as-built survey.
12. In-Place Closure of Existing Storm Sewer cost estimate includes all labor, equipment, and materials necessary for the placement of flowable fill (40 to 80 pounds per square inch) throughout the entire length of the existing storm sewer. Material volume includes sufficient materials to fill and top dress existing catch basin locations prior to asphalt placement.
13. Waste-characterization cost estimate includes costs for the analysis of solid and liquid waste samples for polychlorinated biphenyls, toxicity characteristic leaching procedure (TCLP) volatile organic compounds, TCLP semivolatile organic compounds (SVOCs), TCLP metals, ignitability, corrosivity, and reactivity.
14. Non-hazardous Waste Transportation and Disposal cost estimate includes all labor, equipment, and materials necessary for the containerization, transportation, and off-site disposal of non-hazardous solid waste generated during the storm sewer closure and swale-installation activities.

Table D-2
Rehabilitation Measure 2 - Slip-Lining of the Existing Subject Storm Sewer

Dry Weather Discharge Evaluation Work Plan
Consolidated Edison Company of New York, Inc.
Hunts Point Former Manufactured Gas Plant - Bronx, New York

Item #	Description	Quantity	Unit	Unit Price	Amount
1	Pre-Design Investigation	1	LS	$50,000	$50,000
2	Mobilization/Demobilization	1	LS	$35,000	$35,000
3	Utilities Location and Markout	2	day	$5,000	$10,000
4	Construct and Remove Equipment Decontamination Pad	1	LS	$10,000	$10,000
5	Erosion Control	1	LS	$2,000	$2,000
6	Construction and Maintenance of Soil Staging Area	1	LS	$15,000	$15,000
7	Power Wash Storm Sewer and Catch Basins	500	LF	$50	$25,000
8	Collect Wash Water and Transport Off Site for Treatment and Disposal	1	LS	$5,000	$5,000
9	Survey Control	1	LS	$5,000	$5,000
10	Bypass Pumping	10	day	$700	$7,000
11	Trench Box Rental	2	weeks	$7,500	$15,000
12	Demolition and Excavation of Existing Catch Basin Structures and Install Launching Pit	225	CY	$100	$22,500
13	Storm Sewer Slip-lining	480	LF	$100	$48,000
14	Pumped Grout	20	CY	$100	$2,000
15	HDPE Catch Basins	4	each	$5,000	$20,000
16	Select Fill	420	CY	$60	$25,200
17	Asphalt Cover	37	SY	$25	$926
18	Waste Characterization	4	EACH	$1,200	$4,800
19	Transportation and Disposal, Non-Hazardous Waste	400	ton	$150	$60,000
				Subtotal Capital Cost	$312,426
				Administration and Engineering (25%)	$55,375
				Construction Management (20%)	$44,300
				Contingency (25%)	$78,106
				Total Estimated Cost	**$490,207**
				Rounded to	**$490,200**

CY = cubic yard
LF = linear feet
LS = lump sum
SY = square yard

General Notes:

1. Cost estimate is based on ARCADIS' past experience and vendor estimates using 2010 dollars.
2. This estimate has been prepared for the purposes of comparing potential sewer rehabilitation alternatives. The information in this cost estimate is based on the available information regarding the sewer inspection and the anticipated scope of the respective alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering/ design. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services, as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Pre-design Investigation includes verifying the diameter and slope of the existing lined sewer for the entire alignment to be rehabilitated and conducting compatibility testing of grout.
2. Mobilization/demobilization cost estimate includes mobilization and demobilization of all equipment, materials, and labor necessary to facilitate remedial activities at the site. Estimated as 15% of subtotal capital costs excluding costs associated with transportation and disposal of excavated/demolition materials.
3. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company at a daily rate of $5,000 per day.
4. Construct and remove equipment decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of 40-mil high-density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a 1-foot high berm and sloped to a collection sump for the collection of decontamination water.
5. Erosion control cost estimate includes all labor, equipment, and materials necessary to purchase, install, and maintain a double-row 3-foot silt fence and hay-bale barrier between the end of the storm sewer and/or bypass discharge pipe and the Bronx River.
6. Construction of an HDPE-lined and bermed soil staging area sufficiently sized to protect and contain all excavated and demolition material as necessary prior to sampling, sorting, and ultimate transportation and disposal.
7. Power wash storm sewer and catch basin cost estimate includes all labor, materials, and equipment necessary to hydroflush the storm sewers to remove sediments and debris in preparation for in-place closure. Estimate includes costs to collect wash water.
8. Transport wash water off site for treatment and disposal cost estimate includes all labor, materials, and equipment necessary to containerize the wash water and transport off site to a permitted treatment facility. Estimate assumes the wash water will be a non-hazardous liquid.
9. Survey control cost estimate includes all labor and equipment necessary to provide on-site survey during construction activities. Cost estimate assumes site survey would be completed to establish pre-construction grades, planned and completed limits, and final site grades. Cost estimate assumes $2,500 per day for two surveyors and equipment.
10. Bypass pumping costs assumes the daily rental of a 1 1/4-inch submersible electric pump (capable of a maximum 55 gallons per minute) and 600 feet of 8-inch discharge conveyance. Estimated cost includes all joints/fixtures associated with conveyance, as well as operation and maintenance of the pump.
11. Trench Box Rental cost estimate includes all labor, equipment, and materials necessary to install and remove temporary excavation support for subsurface excavation areas. Cost estimate assumes the a 20-foot-long, 10-foot-deep steel trench box suitable to support excavation side slopes around the demolition and removal of the existing manhole installations, and a stackable trench box to support installation of the launching pit.
12. Demolition and Excavation of Existing Catch Basin Structures and Install Launching Pit cost assumes all labor and equipment sufficient for the demolition and excavation of four existing concrete manholes. For each location, the cost estimate assumes the excavation of a 8-foot by 8-foot square area to a depth of 8 feet below the existing ground surface for three locations, and the fourth location excavated to install a launch pit that is 20 feet by 10 feet by 8 feet deep.
13. Storm sewer slip lining assumes the installation of HDPE pipe within the existing conveyance pipe. Cost assumes access to existing conveyances will be achieved through manhole excavation areas discussed in Item 9. Costs assume all materials and equipment necessary for installation and fusing of individual pipe lengths, and any unions at manhole locations.
14. Pumped grout quantity estimated based on 2-inch annular space to be filled between new and existing pipe and should be reviewed based on selected pipe material.
15. HDPE catch basin cost assumes all material and labor necessary for installation of manhole/catch basin structures at four locations. Estimated costs are based on supplier quotes and include cover and installation.
16. Select fill cost estimate include labor, equipment, and material necessary to provide, place, grade, and compact fill in the launch pit excavation area and around the new catch basin structures.
17. Replace asphalt pavement includes labor, equipment, and materials necessary to place 6 inches of asphalt around new catch basins and area disturbed by launch pit operations.
18. Waste-characterization cost estimate includes costs for the analysis of solid and liquid waste samples for polychlorinated biphenyls, toxicity characteristic leaching procedure (TCLP) volatile organic compounds, TCLP semivolatile organic compounds, TCLP metals, ignitability, corrosivity, and reactivity.
19. Non-hazardous Waste Transportation and Disposal cost estimate includes all labor, equipment, and materials necessary to transport impacted material off site for disposition at an approved/regulated facility. For the purposes of this cost estimate, all waste materials are assumed non-hazardous.

Table D-3
Rehabilitation Measure 3 - Full Subject Storm Sewer Replacement in the Same Alignment

Dry Weather Discharge Evaluation Work Plan
Consolidated Edison Company of New York, Inc.
Hunts Point Former Manufactured Gas Plant - Bronx, New York

Item #	Description	Quantity	Unit	Unit Price	Amount
1	Pre-Design Investigation	1	LS	$65,000	$65,000
2	Mobilization/Demobilization	1	LS	$41,595	$41,595
3	Utilities Location and Markout	1	day	$5,000	$5,000
4	Construct and Remove Equipment Decontamination Pad	1	LS	$12,000	$12,000
5	Erosion Control	1	LS	$4,000	$4,000
6	Construction and Maintenance of Soil Staging Area	1	LS	$30,000	$30,000
7	Collect Wash Water and Transport Off Site for Treatment and Disposal	1	LS	$5,000	$5,000
8	Survey Control	5	day	$2,500	$12,500
9	Bypass Pumping	4	weeks	$3,000	$12,000
10	Trench Box Rental	4	weeks	$7,500	$30,000
11	Demolition and Excavation of Existing Concrete Storm Sewer	520	CY	$100	$52,000
12	Pipe Bedding - Flowable Fill	80	CY	$250	$20,000
13	HDPE Storm Sewer Pipe and Installation	480	LF	$75	$36,000
14	HDPE Catch Basins	4	each	$5,000	$20,000
15	Select Fill	340	CY	$60	$20,400
16	Asphalt Cover	240	SY	$60	$14,400
17	Waste Characterization	4	each	$1,000	$4,000
18	Transportation and Disposal, Non-hazardous Waste	670	ton	$120	$80,400
19	Transportation and Disposal, C&D Debris	150	ton	$175	$26,250
				Subtotal Capital Cost	$490,545
				Administration and Engineering (25%)	$79,724
				Construction Management (20%)	$63,779
				Contingency (25%)	$122,636
				Total Estimated Cost	**$756,684**
				Rounded to	**$756,700**

CY = cubic yard
HDPE = high-density polyethylene
LF = linear feet
LS = lump sum
SY = square yard

General Notes:

1. Cost estimate is based on ARCADIS' past experience and vendor estimates using 2010 dollars.
2. This estimate has been prepared for the purposes of comparing potential sewer rehabilitation alternatives. The information in this cost estimate is based on the available information regarding the sewer inspection and the anticipated scope of the respective alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering/ design. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services; as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.
3. For the purpose of developing a cost estimate for this alternative, it has been assumed that the existing storm sewer will be replaced with an HDPE pipe. Actual pipe materials would be evaluated and selected as part of the design process.

Assumptions:

1. Pre-Design Investigation includes verifying the dimensions and elevations of existing pipe to be replaced., installing soil borings and temporary well points along the alignment at 3 locations to evaluation subsurface soil and groundwater conditions, and conducting a treatability study to assess compatability of flowable fill with the site groundwater.
2. Mobilization/Demobilization cost estimate includes mobilization and demobilization of all equipment, materials, and labor necessary to facilitate remedial activities at the site. Estimated as 15% of subtotal capital costs excluding costs associated with transportation and disposal of excavated/demolition materials.
3. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company at a daily rate of $5,000 per day.
4. Construct and remove equipment decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 20-foot decontamination pad and appurtenances. The decontamination pad would consist of 40-mil high-density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a 1-foot high berm and sloped to a collection sump for the collection of decontamination water.
5. Erosion control cost estimate includes all labor, equipment, and materials necessary to purchase, install, and maintain a double-row 3-foot silt fence and hay-bale barrier between the end of the storm sewer and/or bypass discharge pipe and the Bronx River. Cost estimate also includes the installation and maintenance of hay bale berms around the perimeter of the excavation area.
6. Construction of an HDPE-lined and bermed soil staging area sufficiently sized to protect and contain all excavated and demolition material as necessary prior to sampling, sorting, and ultimate transportation and disposal.
7. Transport wash water off site for treatment and disposal cost estimate includes all labor, materials, and equipment necessary to containerize the wash water and transport off site to a permitted treatment facility. Estimate assumes the wash water will be a non-hazardous liquid.
8. Survey control cost estimate includes all labor and equipment necessary to provide on-site survey during construction activities. Cost estimate assumes site survey would be completed to establish pre-construction grades, planned and completed limits, and final site grades. Cost estimate assumes $2,500 per day for two surveyors and equipment.
9. Bypass pumping cost estimate includes all labor, equipment, and materials availble on-site during constrruction activities to provide bypass pump storm water flows as needed at a maximum rate of 55 gallons per minute.
10. Trench box rental cost estimate includes all labor, equipment, and materials necessary to install and remove temporary excavation support for subsurface excavation areas. Cost estimate assumes a 20-foot-long, 10-foot-deep steel trench box suitable to support excavation side slopes around the demolition and removal of the existing manhole installations and a stackable trench box to support installation of the launching pit.
11. Demolition and excavation of existing concrete structures cost assumes all labor and equipment sufficient for the demolition and excavation of four existing concrete catch basins and pipe. Cost estimate assumes the excavation of a 4 feet by 500 feet by 6 feet deep along length of sewer and an 8-foot by 8-foot square area to a depth of 8 feet below the existing ground surface at four catch basin locations.
12. Pipe bedding costs assume the installation of 6 inches of flowable fill along the bottom of the excavation area and placing flowable fill as backfill around the pipe to a maximum depth of 9 inches (1/2 the height of the replacement storm sewer pipe). Unit cost also includes labor and materials to brace and weight the storm sewer during backfiling operations to mitigate the potential for pipe float or shifting during placement of flowable fill.
13. Pipe installation costs assume the replacement of the existing storm sewer with S-Type corrugated HDPE, with gasketed bell and spigot piping with a diameter of 15 inches. Costs include all material and labor, as well as all fittings/unions associated with new HDPE catch basin installations.
14. HDPE catch basin cost assumes all material and labor necessary for installation of four catch basins. Estimated costs are based on supplier quotes and include cover and installation.
15. Select fill costs include procurement and placement of clean fill, free from debris and organic material, suitable for compaction around new HDPE storm sewer.
16. Asphalt cover costs assume the restoration of parking lot pavement in area of excavation. Cost assumes material, equipment, and labor for placement of 6 inches of run-a-crush gravel, a 4-inch binder layer, and a 2-inch surface wearing layer.
17. Waste-characterization cost estimate includes costs for the analysis of solid and liquid waste samples for polychlorinated biphenyls, toxicity characteristic leaching procedure (TCLP) volatile organic compounds, TCLP semivolatile organic compounds, TCLP metals, ignitability, corrosivity, and reactivity.
18. Non-hazardous Waste Transportation and Disposal cost estimate includes all labor, equipment, and materials necessary to transport impacted material off site for disposition at an approved/regulated facility. For the purposes of this cost estimate, all waste materials are assumed non-hazardous.
19. C&D Debris Transportation and Disposal cost estimate includes all labor, equipment, and materials necessary to transport the top one foot of removed material (i.e., concrete and asphalt) off site for disposition at an approved/regulated facility. For the purposes of this cost estimate, all waste materials are assumed non-hazardous.