APPENDIX C-2

Groundwater Monitoring and Remediation Report for the Fourth Quarter 2016

January 25, 2017

Mr. Vadim Brevdo, P.E., Environmental Engineer 3
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, New York 11101

RE: NYCDDC UST Program
Contract PW 348-63
Bridges Juvenile Justice Center
1221 Spofford Avenue, Bronx, New York
Groundwater Monitoring and Remediation Report for the Fourth Quarter 2016
Spill Number 0812579

Dear Mr. Brevdo:

URS Corporation (URS) is under contract with the New York City Department of Design and Construction (NYCDDC) to provide environmental investigation and remediation consulting services at various City-owned facilities. The Bridges Juvenile Justice Center located at 1221 Spofford Avenue in Bronx, New York is a remediation site assigned to URS. A Site Location Map is included as Figure 1 and the Site Plan illustrating significant site features is included as Figure 2. Photos of the site investigation area are included in Attachment A.

The Bridges Juvenile Justice Center site is managed by the New York City Administration for Children's Services (ACS) and/or the New York City Department of Citywide Administrative Services (DCAS). In June 2015, the New York City Economic Development Corporation (NYCEDC) released a Request for Expressions of Interest for redevelopment of this site. In October 2016, NYCEDC announced that a development team had been selected for the site. Plans include demolition of the facility and construction of a five-building campus for housing, commercial, and retail uses. Construction may begin as early as 2017 with completion of the first phase in 2021. The remedial actions proposed for this site may be revised based on the future redevelopment activities and plans for the existing facilities.

This report presents a summary of the site history, previous remedial actions at the site, free product recovery data, and groundwater monitoring data for the fourth quarter of 2016 (through October). The status of remedial actions proposed for this site is also included in this report.

Site Description

The Bridges Juvenile Justice Center is a former youth detention facility located in the Hunt's Point section of the Bronx. Site operations were discontinued in 2011. The facility consists of a multi-winged, multi-story building with parking and recreational areas occupying approximately 3.5 acres. Based on the October 2016 announcement by NYCEDC, it appears existing buildings will be demolished and the site will be redeveloped.

Land use in the vicinity of the site is mixed residential/commercial. The site area is relatively flat and gently sloping to the west. The East River is located approximately 3,000 feet to the south. The Bronx

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River, which flows into the East River, is located approximately 2,000 feet east of the site. Surface drainage from the site is collected by storm sewers located along the bordering streets.

Figure 2 shows the layout of the site and Figure 3 shows the location of existing monitoring wells and soil borings advanced at the site. The area of concern is the underground storage tank (UST) area and the basement of the east wing located immediately north of the USTs. The UST area is covered with a concrete slab, while the remainder of the parking lot is covered with asphalt. The asphalt/concrete is underlain by approximately 16 to 19 feet of sand and gravel fill with some brick and concrete. The fill is underlain by schist bedrock.

Former Bridges Juvenile Justice Center

The east wing basement floor is approximately 21 feet below the exterior grade. The basement has a concrete floor slab underlain by approximately 3 feet of sand and gravel fill with some crushed concrete. Schist bedrock underlies the fill. The bedrock slopes slightly to the north. Some of the bedrock beneath the building footprint may have been excavated during building construction. Figure 4 presents a geologic cross-section through the UST area. The line of the cross-section is shown on Figure 3.

Groundwater occurs at or within a couple feet above the bedrock surface at depths ranging from approximately 13 to 19 feet below ground surface (bgs). Groundwater flow at the site is generally to the northwest. The estimated hydraulic gradient is fairly steep, ranging from approximately 0.13 to 0.28 foot/foot. Based on slug tests performed on wells MW-01 and MW-02, the hydraulic conductivity at the site, primarily representative of the bedrock, ranges from approximately 1.56×10^{-4} to 2.49×10^{-5} centimeters per second.

View north of UST area

Site History and Background

As shown on Figure 2, there are three USTs at the site; two active 12,000 gallon fuel oil tanks (Tank Nos. 002 and 003) and a closed in-place diesel tank located northeast of the two fuel oil tanks. The diesel tank was reportedly filled with concrete prior to 2004. The two active USTs provide fuel oil to three boilers and an emergency generator located to the north in the east wing basement. Supply and return piping conveys fuel oil to and from the boilers and emergency generator. It is unknown if the USTs are located within a concrete vault. However, a review of the UST installation design drawings indicates that a concrete vault was not constructed. In addition, there are no wells located in the concrete top slab, suggesting that the USTs are not located within a concrete vault. An as-built drawing for the UST installation provided by the NYCDDC is contained in Attachment B.

On February 14, 2009, facility operators intended to close Tank No. 002 and open Tank No. 003, a process that was routinely completed manually with valves. However, the return line from the boilers to Tank 002 was inadvertently left open. Fuel oil that should have been circulating to Tank No. 003 was diverted to Tank No. 002, which was already at capacity. Records from the UST inventory monitoring system (Veeder Root) indicate that approximately 2,000 gallons of fuel oil were released.

On February 18, 2009, fuel oil was observed seeping into the basement in the vicinity of the supply lines from the USTs to the boilers. The spill was called into the New York State Department of Environmental Conservation (NYSDEC), who assigned Spill Number 0812579 to the site. The initial spill investigations at the site were conducted by Louis Berger & Associates, PC (LBA). In March 2014, NYCDDC requested that

URS evaluate the work completed to date and implement additional investigations/remedial actions at the site.

2009 Remedial Investigation

In March 2009, LBA performed a remedial investigation (RI) to delineate the extent of soil and groundwater impacts from the fuel oil release that occurred in February 2009. The RI findings were presented in a Remedial Investigation Report dated May 15, 2009.

Figure 3 shows the soil borings and temporary monitoring wells installed by LBA in 2009. A total of 24 direct-push soil borings were installed; 11 were located in the area of the USTs and 13 were advanced in the basement of the east wing near the boilers and the wall adjacent to the USTs. Temporary monitoring wells were installed at four of the soil boring locations in the basement.

LBA performed the drilling using a step-out approach. If evidence of contamination [i.e., petroleum-like staining/odors, elevated volatile organic vapors measured using a photoionization detector (PID), and/or free product] was observed in the initial borings, additional borings were advanced at distances radiating away from the presumed source area. Evidence of petroleum contamination was observed in three basement borings (SB-01B, SB-02 and SB-03) and four exterior borings (SB-14, SB-15, SB-16 and SB-18). Lower levels of petroleum contamination were noted by LBA in basement borings SB-06, SB-08, SB-09, SB-11 and SB-12 which were attributed to a historical release associated with the previous boiler system.

LBA submitted 27 soil samples for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and total petroleum hydrocarbons (TPH). The soil samples were collected from the interval just above the groundwater or from the bottom of the boring, whichever was encountered first. In borings with apparent contamination, an additional soil sample was collected from the interval of greatest evidence of contamination. Nine of the 27 soil samples contained VOCs at a concentration above the Soil Cleanup Objectives (SCOs) for Unrestricted Use as presented in Title 6 of the New York Codes, Rules and Regulations (6NYCRR) Part 375.6. The highest total VOC concentrations were detected in soil borings SB-15 and SB-16 located immediately east of the USTs. SVOCs exceeded the SCOs only in soil samples SB-18 and SB-20, located immediately to the north and west of the USTs.

Temporary groundwater monitoring wells TWP01 through TWP04 were installed at basement boring locations SB-05B, SB-08, SB-10 and SB-12, respectively. Groundwater samples were collected from the temporary monitoring wells. The samples from TWP03 and TWP04 were analyzed for VOCs, SVOCs, and TPH. The samples collected from TWP01 and TWP02 were only analyzed for VOCs because there was insufficient groundwater volume to analyze for SVOCs and TPH. All four of the groundwater samples contained VOCs in excess of the NYSDEC Division of Water, Technical and Operational Guidance Series (1.1.1) Memorandum, "Ambient Water Quality Standards and Guidance Values" (TOGS), revised April 2000. Total VOC concentrations ranged from 107 parts per billion (ppb) in TWP04 to 369 ppb in TWP02. The only SVOC detected at a concentration above the groundwater criteria was naphthalene at a concentration of 12 ppb in sample TWP03.

In the RI report, LBA concluded the following:

- The gravel sub-base of the concrete basement floor and the assumed gravel sub-base beneath the (presumed) UST vault likely provide a preferential pathway for the fuel oil release.

- Free product was present in basement borings SB-01B, SB-02, and SB-03.
- Free product was observed in two exterior borings, SB-15 and SB-16, located approximately 3 feet east of the UST vault.
- There were indications that a historical release occurred below the basement slab.
- Only localized pockets of perched water were observed and only beneath the basement; no groundwater was observed in the exterior borings.

Based on the findings of the RI, LBA prepared a Remedial Action Plan (RAP), dated May 21, 2010. LBA proposed a dual-phase extraction system to remove as much of the free product as feasible. Since contaminated soil would likely remain following implementation of the dual-phase extraction system, LBA concluded that engineering and institutional controls would be required to prevent unnecessary direct contact with the soil. This remedial approach was never implemented.

2014 Site Specific Investigation (SSI)

In July 2014, URS submitted a Site Specific Investigation Plan (SSIP) to the NYSDEC for additional investigation of the site. The SSIP proposed the installation of four groundwater monitoring wells on the exterior of the building in the area of the USTs and two wells in the basement of the building. The NYSDEC approved the SSIP on July 8, 2014.

SSI drilling activities were completed between September 2 and 5, 2014 by AARCO Environmental Services Corp. (AARCO) under the direction of a URS geologist. Four exterior soil borings, designated as MW-01 through MW-04, were advanced using a Deeprock combination hollow stem auger/air rotary drill rig at the locations shown on Figure 3. Two borings, designated as MW-05 and MW-06, were advanced in the basement of the building using a portable air rotary drilling assembly. All boring locations were first manually cleared to a depth of 5 feet bgs, or to refusal on bedrock in the case of the interior borings.

The URS geologist conducted field screening of the retrieved soils to evaluate potential petroleum contamination including measuring volatile organic vapors using a PID. The fill encountered in most borings contained petroleum odors, primarily near the water table. PID readings measured over 200 parts per million (ppm) in all borings except MW-06 where the highest PID reading was just over 71 ppm.

Two soil samples were collected from exterior borings MW-01 through MW-04; one soil sample was collected from interior borings MW-05 and MW-06. The soil samples were analyzed for VOCs and SVOCs and compared to the SCOs for Unrestricted Use. The analytical results indicated that the deeper soil samples from MW-01 and MW-03, and both the shallow and deep samples from MW-04, contained VOCs at concentrations above the NYSDEC SCOs. One SVOC, naphthalene, was detected in the deeper sample from MW-01 at a concentration above the soil cleanup objectives, and seven SVOCs were detected in the deeper sample from MW-03 at concentrations above the SCOs. The SSI soil sampling results are summarized on Figure 5.

Monitoring wells were constructed at all six boring locations following collection of the soil samples. The four exterior wells were constructed of 4-inch diameter, schedule 40 PVC riser and 15-foot lengths of 0.020-inch slotted screen. The two basement wells were constructed of 2-inch diameter, schedule 40 PVC riser and 12-foot lengths of 0.020-inch slotted screen. All well screens span the bedrock and groundwater interfaces. Due to the high water table beneath the basement, the top of these well

screens are only 1 foot bgs to maximize the likelihood that any product floating on the groundwater will be intersected by the monitoring well screen. The wells were developed on September 30, 2014.

On October 20, 2014, URS returned to the site to measure groundwater/product levels and collect groundwater samples. Groundwater samples were collected from wells MW-01, MW-03, and MW-06. Groundwater samples were not collected from wells MW-02, MW-04, and MW-05 due to the presence of product. In addition to the groundwater samples, a product sample was collected from MW-02 and analyzed for petroleum fingerprint analysis. The fingerprint analysis of the product sample from well MW-02 identified the product most closely as No. 4 fuel oil. The NYSDEC Petroleum Bulk Storage (PBS) form states that the USTs were used to store No. 2 fuel oil. The composition of petroleum distillates changes over time due to weathering. Therefore, it is likely that the petroleum product present in well MW-02 was actually a weathered No. 2 fuel oil since the product fingerprint analytical method is not able to distinguish between a weathered No. 2 fuel and a No. 4 fuel oil.

URS summarized the findings of the SSI report in an Investigation Summary and Remedial Plan (ISRP), submitted to the NYSDEC in February 2015. Figure 6 shows the estimated extent of the petroleum impacts and the extent of the free product based on the findings from the SSI and the LBA report. In the ISRP, URS proposed a plan to remediate petroleum impacts at the site using a phased approach with a combination of vacuum-enhanced fluid recovery (VEFR), surfactant flushing, and in-situ chemical oxidation (ISCO). The remedial plan was approved by the NYSDEC in a letter dated February 18, 2015.

In July 2015, URS submitted a Design Analysis Report to provide further details for the proposed remedial actions. The current status of the remedial actions at the site is presented below following a discussion of free product recovery work and groundwater sampling completed by URS.

Free Product Recovery

Groundwater elevation, product thickness measurements, and product recovery data recorded for the past year are presented on Table 1. Since the monitoring wells were installed in September 2014, product has been detected in all wells, and has been consistently detected at monitoring wells MW-02, MW-03, MW-04, and MW-05. URS initiated a monthly product recovery program during the first monitoring event in September 2014. Product was collected using a peristaltic pump, placed into a drum, and disposed of off-site. By June 2015, the product thickness in the monitoring wells had decreased substantially. At that time, URS initiated the use of petroleum absorbent socks in monitoring wells MW-02, MW-03, MW-04, and MW-05 to allow continuous product recovery between site visits.

At well MW-05, it became apparent that the petroleum absorbent socks were not capable of collecting the volume of product collecting in the well each month. The socks were removed from this well and manual collection with a pump resumed in November 2015. From May through August 2016, no product was detected in this well. During the most recent monitoring event on October 18, 2016, product was measured at a thickness of 0.05 feet.

In well MW-06, product was detected for the first time in February 2016 and was detected consistently until the October 18, 2016 monitoring event. A petroleum absorbent sock was installed in this well in April 2016 and replaced monthly until the most recent monitoring event in October 2016.

Total product recovery from each monitoring well is summarized in the table below.

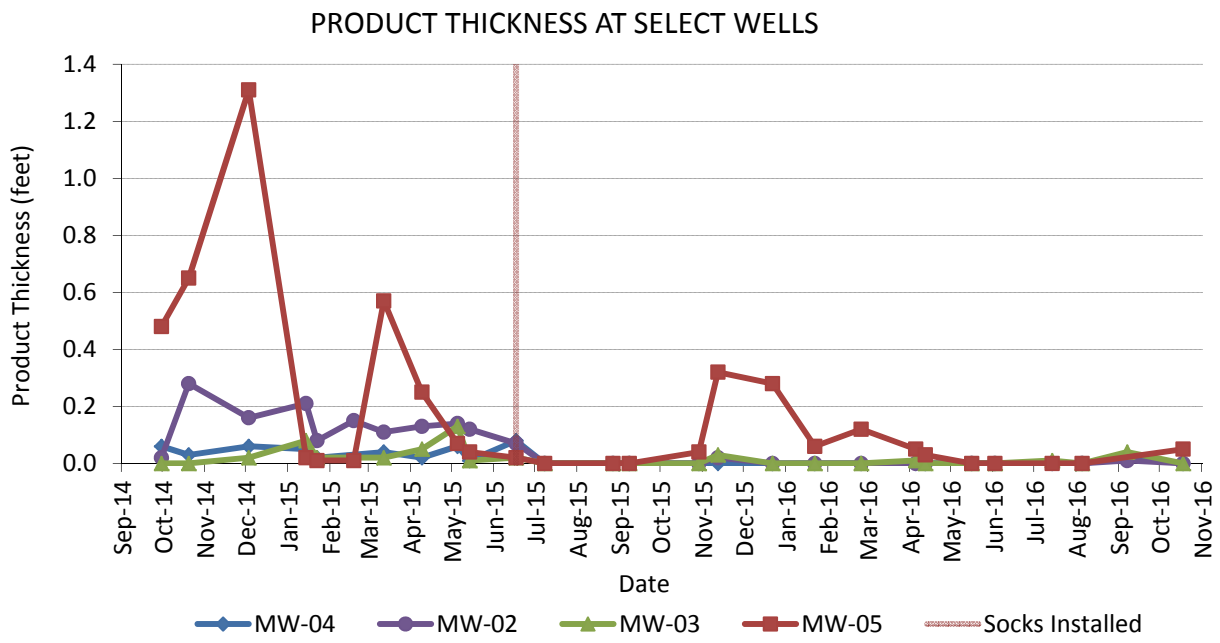
Total Product Recovered (gallons)				
	2014	**2015**	**2016 (thru 10.18.16)**	**Total (thru 10.18.16)**
MW-01	0	0.25	0	0.25
MW-02	0.75	1.75	0*	2.5
MW-03	0.25	1.5	0*	1.75
MW-04	0.5	1.5	0*	2.0
MW-05	1.25	2.75	1.0	5.0
MW-06	0	0	0.25*	0.25
Total	**2.75**	**7.75**	**1.25**	**11.75**

*Does not include collection via petroleum absorbent socks.

As shown, an estimated 11.75 gallons of product have been collected to date. Because petroleum absorbent socks were installed in the wells in June 2015, floating product is not typically detected in the well using an oil/water interface probe. However, it is assumed that product is still present and being collected by the socks. In August 2016, URS removed the petroleum absorbent socks from all monitoring wells to observe whether product was still present at the site. In September, product was measured in wells MW-02, MW-03, and MW-04 at a thickness ranging from 0.01 feet to 0.04 feet, so the socks were reinstalled at these wells.

Since the socks were first installed in June 2015, they have been replaced in well MW-02 ten times, well MW-03 six times, well MW-04 four times, well MW-05 four times, and well MW-06 five times. URS will continue to perform free product gauging/recovery on a monthly basis using petroleum absorbent socks or other methods as appropriate based on the product levels at the site.

The product thickness measured at monitoring wells MW-02 through MW-05 since monitoring began is indicated on the chart below.



The chart shows that product thickness was highest in basement well MW-05 and in well MW-02 located just south of the USTs. Although there was some variability in the product thickness at MW-05, the product at all monitoring wells has decreased as a result of the monthly product recovery program. As shown on Figure 7 and Table 1, groundwater elevations are relatively consistent throughout the year.

Based on data collected during the product recovery program to date, it does not appear that a significant volume of free product is present in the vicinity of the USTs. It is possible that free product is confined to the UST vault (if present) or that free product is pooling up against the building foundation. If such conditions do exist, the volume of free product would likely be greater in those areas. The recent appearance of sustained product at well MW-06 may be an indication that product is slowly migrating to the northwest. Additional investigations are planned to determine the presence of product in these areas as outlined below. It is also possible that the estimated quantity of product released was incorrect.

Groundwater Sampling Program

URS performs quarterly groundwater sampling to document the progress of the remedial activities at this site. Monitoring well locations are shown on Figure 3. All existing monitoring wells (MW-01 through MW-06) are included in the quarterly groundwater sampling program, but groundwater samples are only collected from wells with no free product. URS collects groundwater samples in accordance with the procedures specified in the *Generic Site Investigation Protocol for Underground Petroleum Storage Tank Sites (GSIP)*, February 1995. Groundwater samples are analyzed for petroleum-related VOCs and SVOCs using United States Environmental Protection Agency (USEPA) Methods 8260B and 8270C, respectively.

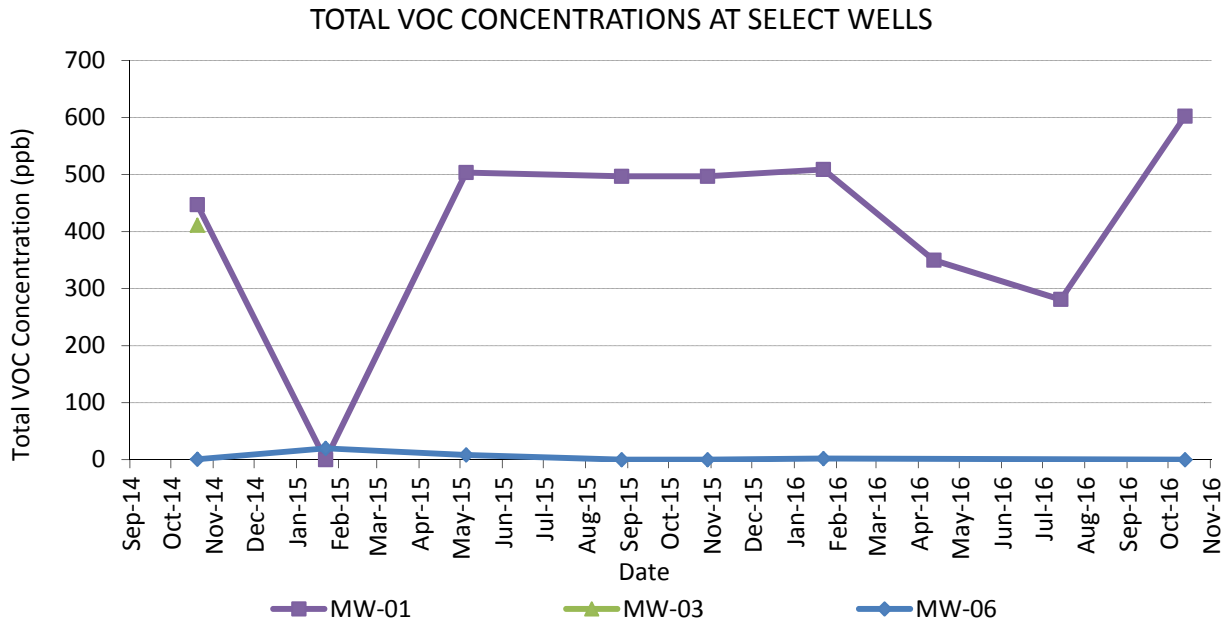
The sampling event for the fourth quarter 2016 was conducted on October 18, 2016. Samples were only collected from monitoring wells MW-01 and MW-06 during this event. Product was present or petroleum absorbent socks were installed in the other four monitoring wells. Since monitoring began in the fourth quarter 2014, groundwater samples have only been collected from wells MW-01, MW-03,

and MW-06. Wells MW-02, MW-04, and MW-05 have contained product or petroleum absorbent socks during all sampling events to date.

Groundwater elevations and product measurements collected over the past year are presented on Table 1. Figure 7 shows the groundwater elevation contours based on the measurements for the last four quarters. Water levels at wells MW-01 through MW-04 were generally within the range of 13 to 19 feet bgs. The depth to water at wells MW-05 and MW-06 was generally less than 2 feet below the boiler room floor. As shown on Figure 4, the ground elevation at these two wells is approximately 21 feet lower than the other wells. The groundwater elevation at individual wells is relatively consistent. As shown on Figure 7, the groundwater flow direction has been consistently to the northwest; product thickness measurements are also shown on Figure 7.

Table 2 presents the analytical results from the last four groundwater sampling events conducted at the site. Groundwater data are compared to groundwater quality criteria in NYSDEC's Division of Water, Technical and Operational Guidance Series (1.1.1) Memorandum, "Ambient Water Quality Standards and Guidance Values" (TOGS), revised April 2000. Total VOC concentrations for the four most recent events are shown on Figure 7. During the most recent sampling event in October 2016, the total VOC concentration in well MW-01 was 603 ppb. There were no VOCs detected in well MW-06.

The chart below illustrates total VOC concentrations over time in monitoring wells MW-01, MW-03, and MW-06:



The total VOC concentrations to date in the samples from well MW-01 have been relatively consistent with the exception of the January 2015 sampling event when no VOCs were detected in this well. Nine VOCs and one SVOC exceeded NYSDEC groundwater criteria. Naphthalene has been the only SVOC to exceed the NYSDEC Groundwater Quality Criteria in well MW-01 with concentrations ranging from 23 ppb to 170 ppb.

Total VOC concentrations at well MW-06 have been much lower. The highest total VOC concentration detected to date in this well was only 20 ppb. No VOCs were detected in this well during the most recent sampling event in October 2016, despite the recent detections of product at this well. Naphthalene, an SVOC, was present above NYSDEC groundwater criteria.

The one sample collected from MW-03 in October 2014 showed a total VOC concentration of 411 ppb and a naphthalene concentration of 140 ppb.

Since only three of the six monitoring wells at the site have been sampled, it is not yet possible to determine whether remedial action will be required to address the dissolved-phase groundwater impacts. Monitoring wells MW-02, MW-04, and MW-05 will be sampled once the free phase contamination has been addressed. Indications from the groundwater samples to date are that the VOC concentrations in groundwater are relatively low, typical of sites with a No. 2 fuel oil release.

Proposed Remedial Actions

The proposed remediation program for this site was presented in the February 2015 ISRP and approved by the NYSDEC on February 18, 2015. In July 2015, URS submitted a Design Analysis Report (DAR) to provide additional details for the proposed remedial actions at the site. As outlined in the DAR, remediation will be achieved using a phased-approach consisting of the following:

Phase 1 - VEFR
Phase 2 - Supplemental Investigation
Phase 3 - Surfactant Flushing
Phase 4 - ISCO

Some overlap of the phases would occur. Information obtained during the first two phases will be used to better define the activities to be performed in Phases 3 and 4. Phases 3 and 4 may be amended or revised as additional information is acquired through Phases 1 and 2. Additionally, based on the redevelopment of the site, the proposed remedial action may be revised to include removal of USTs, excavation, and off-site disposal of impacted soil.

Phase 1 – VEFR involves using a vacuum truck to extract product and incidental groundwater from existing product-bearing wells. VEFR was to initially be performed on a weekly basis, for approximately 4 to 8 hours per event, over a four week period. Following the initial VEFR events, the frequency was to be evaluated and adjusted. However, product levels in the existing monitoring wells have quickly diminished to the point where VEFR would likely provide little benefit. Therefore, URS will proceed with the supplemental investigation activities. If additional product is encountered during Phase 2, implementation of Phase 1 will be re-evaluated based on the conditions at that time.

The Phase 2 - Supplemental Investigation will include the following field activities:

- Test pit excavation near the 12,000-gallon USTs
- Basement borings and well installation
- Monitoring well installation on the exterior of the building
- Soil and groundwater sampling and analysis
- Groundwater/product level monitoring

The Supplemental Investigation proposes installation of up to 18 additional monitoring wells: 13 monitoring wells will be installed at select locations throughout the UST area, three wells will be installed in the basement, and two "contingency wells" will be installed should it be determined that the two 12,000 gallon USTs are located in a vault and the vault contains free product. Proposed investigation locations are shown on Figure 8. Complete details of the investigation were submitted in the July 2015 DAR. URS plans to conduct the Supplemental Investigations in 2017.

Petroleum Storage Tank Inventory

The source of petroleum impacted soil and groundwater is often attributed to releases from petroleum USTs and/or associated underground piping. Tanks on-site that have been registered with the NYSDEC are listed on the site-specific PBS registration. The PBS registration lists each tank by number, capacity, product stored, status and other information. In an effort to better evaluate the potential for on-going environmental impacts from the historical presence of petroleum storage tanks, URS has prepared an inventory of tanks using the PBS registration and information made available to URS.

The PBS registration data for the Bridges Juvenile Justice Center site is contained in Attachment C. Figure 2 shows the locations of current tanks at the site; the location of former tanks is not known. URS developed Table C-1 in Attachment C to summarize the information listed on the PBS registration, and URS' current understanding of the tank inventory. For the Bridges Juvenile Justice Center site, the following conclusions are made with regard to tanks:

- Currently, there are two USTs in service at the site. Tanks 002 and 003 are both 12,000-gallon tanks containing No. 2 Fuel Oil. Both tanks were installed in July 2002, replacing former Tank 001, a 20,000-gallon No. 6 Fuel Oil UST that was closed and removed in 2002.

- A 5,000 gallon diesel tank was closed in place in 2002. The tank is considered to be aboveground in a subterranean vault.

- A 20,000 gallon tank No. 2 fuel oil tank was closed and removed in 2002. The tank was considered to be aboveground in a subterranean vault.

No additional research regarding petroleum storage tanks is warranted.

Summary and Conclusions

The petroleum contamination detected at the site is from a release of No. 2 fuel oil due to an error during the tank filling; an estimated 2,000 gallons of product may have been released. The results of the investigations to date indicate that petroleum contamination is present at the site as free product, as soil contamination in the saturated zone, and as dissolved phase groundwater contamination. Additional investigations are recommended to further delineate the extent of petroleum impacts to soil and groundwater as well as to determine whether there are any other areas where free product may have accumulated.

URS implemented a monthly free product recovery program in September 2014. Initially, product was manually collected from affected monitoring wells on a monthly basis. An estimated 11.75 gallons of product has been recovered to date. Well MW-06, which previously had not contained product, was found to contain small quantities of product beginning in February 2016. Currently, petroleum

absorbent socks are installed at four of the six site monitoring wells due to the small quantities of product that have been found over the past several months. Based on the small quantity of product detected in the monitoring wells, URS will not implement VEFR at this time.

Since groundwater has been sampled at only three of the six monitoring wells, it is not yet possible to determine the need or extent of remedial action to address dissolved phase groundwater impacts. Indications from the groundwater sampling completed to date are that the VOC concentrations in the groundwater are low, typical of No. 2 fuel oil releases.

In October 2016, NYCEDC announced that a redevelopment team had been selected for the site. Plans include demolition of the facility and construction of a five-building campus for housing, commercial, and retail uses. Construction may begin as early as 2017 with completion of the first phase in 2021. The remedial actions proposed for this site may be revised based on the future redevelopment activities and plans for the existing facilities.

Actions and Proposals:

Based on the current status of the site, the on-going remedial actions, the soil sampling data, and the most recent groundwater monitoring data as summarized above, URS recommends the following:

Actions:

- Continue the product recovery program at all affected monitoring wells on a monthly basis.
- Temporarily remove petroleum absorbent socks whenever indications are that minimal free product is being collected to determine whether product remains in the surrounding aquifer.
- Continue the quarterly groundwater monitoring and sampling program. Groundwater samples will be analyzed for petroleum-related VOCs and SVOCs.
- Implement the proposed supplemental investigations as outlined under Phase 2 in the July 2015 DAR.

Proposals/Approvals Required:

- None.

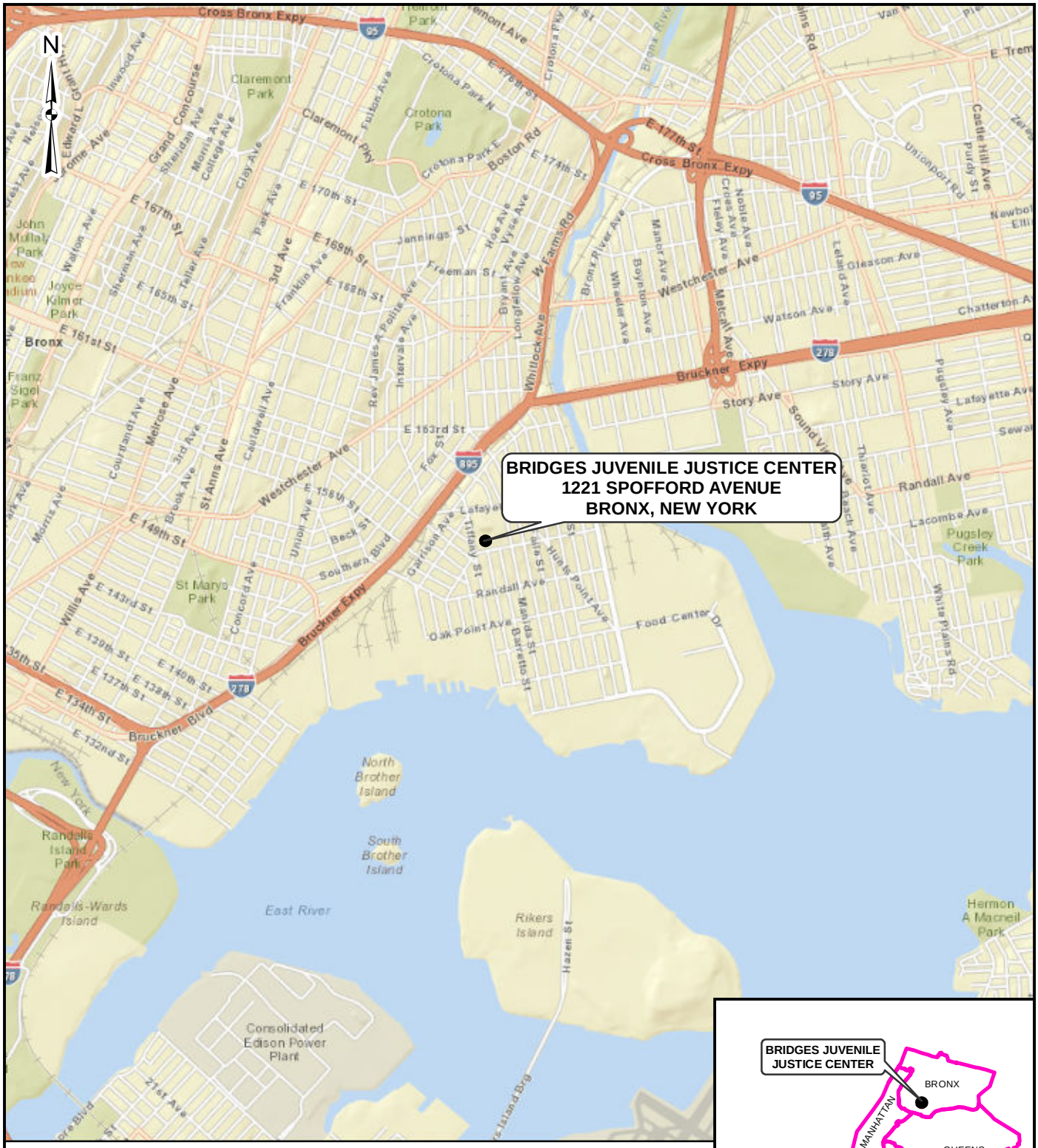
Please call me at (716) 856-5636 with any questions or comments.

Sincerely,
URS Corporation

Kevin J. Shanahan

Kevin Shanahan
Project Manager

cc: M. Asbagh (NYCDDC)
File: 10681461\R-991\C-1



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BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
SITE LOCATION

FIGURE 1

N

NORTH WING

BRIDGES JUVENILE JUSTICE CENTER

SOUTH WING

BASEMENT LEVEL

EAST WING

WEST BOILER

MIDDLE BOILER

EAST BOILER

EMERGENCY DIESEL GENERATOR

ELECTRICAL ROOM

VENTS

FILL PORT

WINDOW WELL

DIESEL UST (CLOSED IN-PLACE)

TANK NO. 002 12,000-GALLON FUEL OIL UST

TANK NO. 003 12,000-GALLON FUEL OIL UST

ASPHALT PARKING LOT

20 0 20 Feet

Basemap Source: Remedial Action Plan by Louis Berger & Associates, May 21, 2010.

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BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
SITE PLAN

URS

FIGURE 2

N

SB-06

BASEMENT LEVEL
EAST WING

SB-07

SB-09

SB-11

WEST
BOILER

MIDDLE
BOILER

EAST
BOILER

SB-05A

SB-05C

SB-05B/TWP01

SB-04

SB-08/TWP02

SB-10/TWP03

EMERGENCY
DIESEL GENERATOR

MW-06

MW-05

ELECTRICAL
ROOM

A

SB-03

SB-01A

SB-01B

SB-02

SB-12/TWP04

SOUTH
WING

SB-19

WINDOW WELL

SB-21

MW-04

SB-18

SB-14A

SB-14B

SB-13

SB-20

SB-15

MW-01

DIESEL UST
(CLOSED IN-PLACE)

ASPHALT
PARKING
LOT

MW-03

SB-16

TANK NO. 002
12,000-GALLON
FUEL OIL UST

TANK NO. 003
12,000-GALLON
FUEL OIL UST

SB-17A

SB-17B

MW-02

A'

Legend

- Monitoring Well (URS 2014)
- Soil Boring (LBA 2009)
- Temporary Monitoring Well (LBA 2009)
- Geologic Cross Section A-A' (See Figure 4)

Basemap Source: Remedial Action Plan by Louis Berger & Associates, May 21, 2010.

10 0 10 Feet

BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
BORING AND WELL LOCATIONS

URS

FIGURE 3

J:\Projects\10681461\DB\GIS\B1016\Cross Section.mxd 2/5/2016

NORTH

A

SOUTH

A’

ELEVATION AMSL (FEET)

60
55
50
45
40
35
30
25
20
15

EXTERIOR BUILDING WALL

PARKING LOT

MW-4

ASPHALT

CONCRETE

ASPHALT

MW-2

SAND AND GRAVEL FILL

SAND AND GRAVEL FILL

WINDOW WELL

TWO 12,000 GALLON NO. 2 FUEL OIL USTs

BASEMENT

CONCRETE

SAND AND GRAVEL FILL

PRODUCT

?

MW-5

CONCRETE

SAND AND GRAVEL FILL

PRODUCT

?

?

?

SCHIST BEDROCK

SCHIST BEDROCK

13’ TD

29’ TD

26’ TD

MW-4 ← Monitoring Well Number

← Potentiometric Surface 07/15/2014

← Screened Interval of Monitoring Well

29’ TD ← Total Depth

Horizontal Scale: 1” = 5’
Vertical Scale: 1” = 5’

Sand & Gravel Fill

Schist Bedrock

BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
GEOLOGIC CROSS SECTION A - A’

URS

FIGURE 4

AG21024-1068146I-012715-GCM

N

BASEMENT LEVEL
EAST WING

MW-06 (0.5'-2.5') (9/2014)
Total Volatiles 26.7
Naphthalene 88

MW-05 (1'-3') (9/2014)
Total Volatiles 4969.7
Naphthalene 3100

WEST BOILER

MIDDLE BOILER

EAST BOILER

EMERGENCY DIESEL GENERATOR

ELECTRICAL ROOM

SOUTH WING

MW-04 (15'-17') (9/2014)
Total Volatiles 7925
Naphthalene 1200

MW-04 (17'-19') (9/2014)
Total Volatiles 22760
Naphthalene 5400

WINDOW WELL

TANK NO. 002
12,000-GALLON
FUEL OIL UST

TANK NO. 003
12,000-GALLON
FUEL OIL UST

MW-01 (11'-13') (9/2014)
Total Volatiles 1542
Naphthalene 460

MW-01 (13'-15') (9/2014)
Total Volatiles 76300
Naphthalene 18000

DIESEL UST
(CLOSED IN-PLACE)

ASPHALT
PARKING
LOT

MW-03 (11'-13') (9/2014)
Total Volatiles 1146
Naphthalene 240

MW-03 (16'-18') (9/2014)
Total Volatiles 72945
Naphthalene 24000

MW-02 (13'-15') (9/2014)
Total Volatiles 4.67
Naphthalene 2.1

MW-02 (15'-17') (9/2014)
Total Volatiles 1200
Naphthalene 420

Legend

■ Soil Boring Location

Sample Depth
Location ID — **MW-02 (13'-15') (9/2014)** — Date
Total Volatiles 4.67
Naphthalene 2.1
Parameter — Concentration (µg/kg)

NOTE:
1. Results shown in red text exceed NYSDEC Soil Cleanup Objectives in 6NYCRR Subpart 375 Unrestricted Use Criteria.

Basemap Source: Remedial Action Plan by Louis Berger & Associates, May 21, 2010.

10 0 10 Feet

BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
TOTAL VOCS & NAPHTHALENE
SOIL ANALYTICAL RESULTS

URS

FIGURE 5

J:\Projects\10681461\DB\GIS\B1016\Soil Analytical September 2014.mxd 2/5/2016

N

SB-06

BASEMENT LEVEL
EAST WING

SB-07

SB-09

SB-11

WEST
BOILER

MIDDLE
BOILER

EAST
BOILER

SB-05A

SB-05C

SB-05B/TWP01

SB-04

SB-08/TWP02

SB-10/TWP03

EMERGENCY
DIESEL GENERATOR

MW-06

MW-05

ELECTRICAL
ROOM

SB-03

SB-01A

SB-01B

SB-02

SB-12/TWP04

SOUTH
WING

SB-19

WINDOW WELL

SB-21

MW-04

SB-18

SB-14A

SB-14B

SB-13

SB-20

SB-15

MW-01

DIESEL UST
(CLOSED IN-PLACE)

MW-03

ASPHALT
PARKING
LOT

TANK NO. 003
12,000-GALLON
FUEL OIL UST

SB-16

TANK NO. 002
12,000-GALLON
FUEL OIL UST

SB-17A

SB-17B

MW-02

Legend

- Monitoring Well (URS 2014)
- Soil Boring (LBA 2009)
- Temporary Monitoring Well (LBA 2009)
- Estimated Extent of Free Product (2014)
- Estimated Extent of Petroleum Impacts (2014)

Basemap Source: Remedial Action Plan by Louis Berger & Associates, May 21, 2010.

10 0 10 Feet

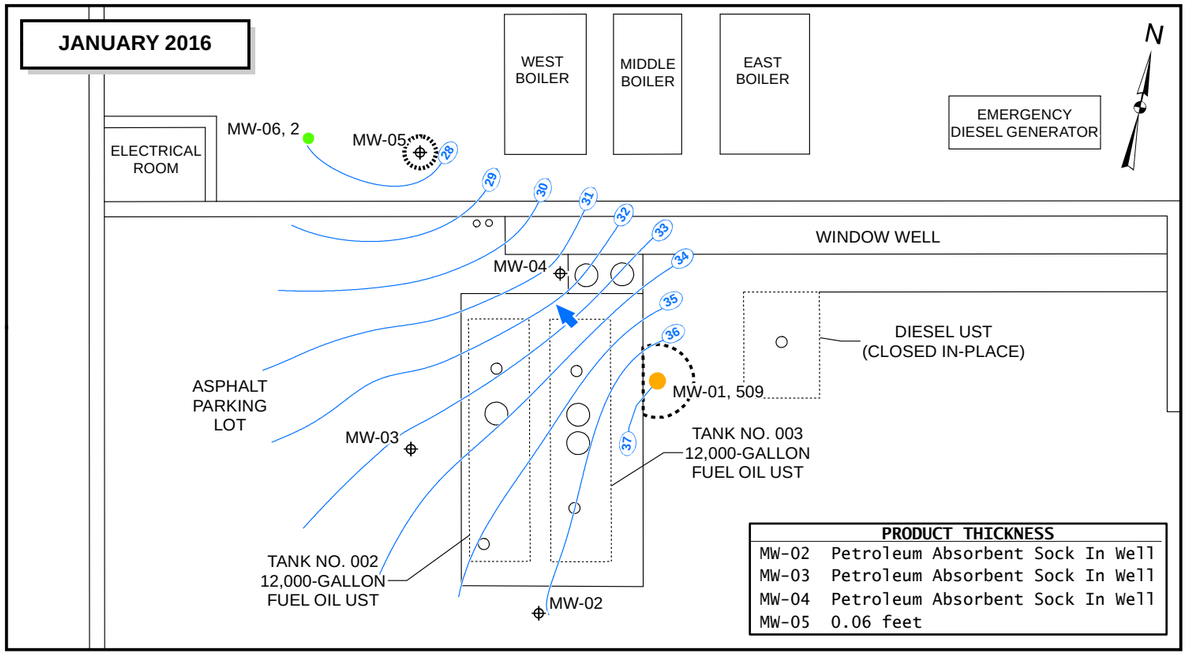
BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
ESTIMATED EXTENT OF PETROLEUM
IMPACTS AND FREE PRODUCT

URS

FIGURE 6

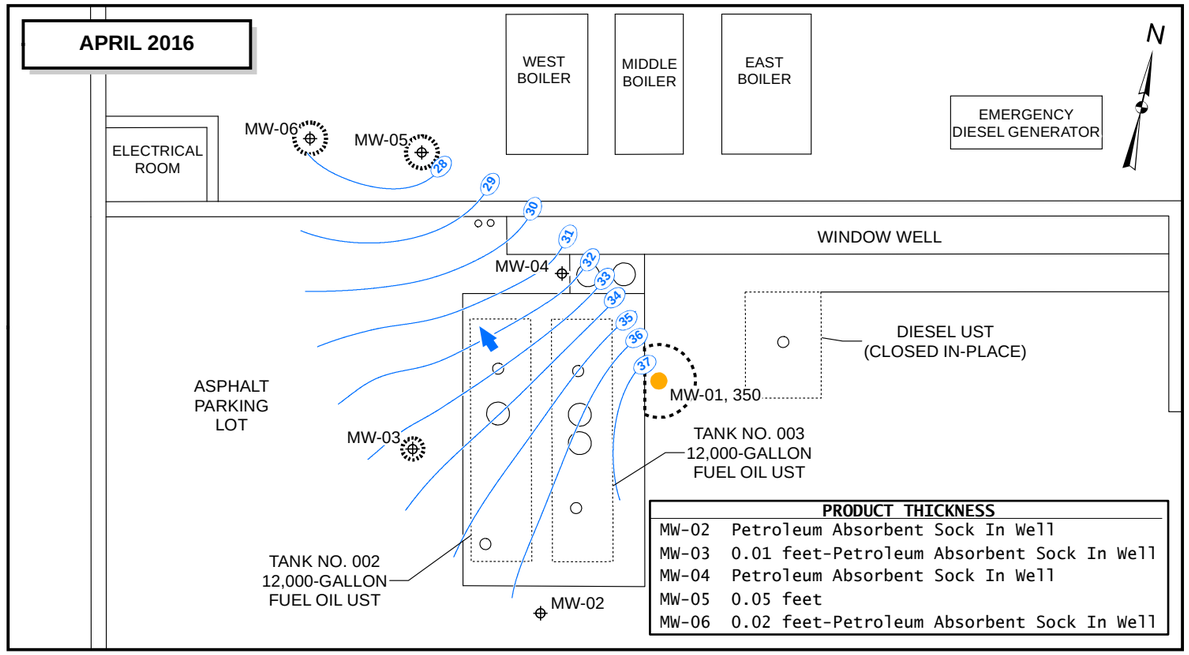
J:\Projects\10683461\DB\GIS\B1016\Petroleum Impacts and Free Product.mxd 10/26/2016

JANUARY 2016



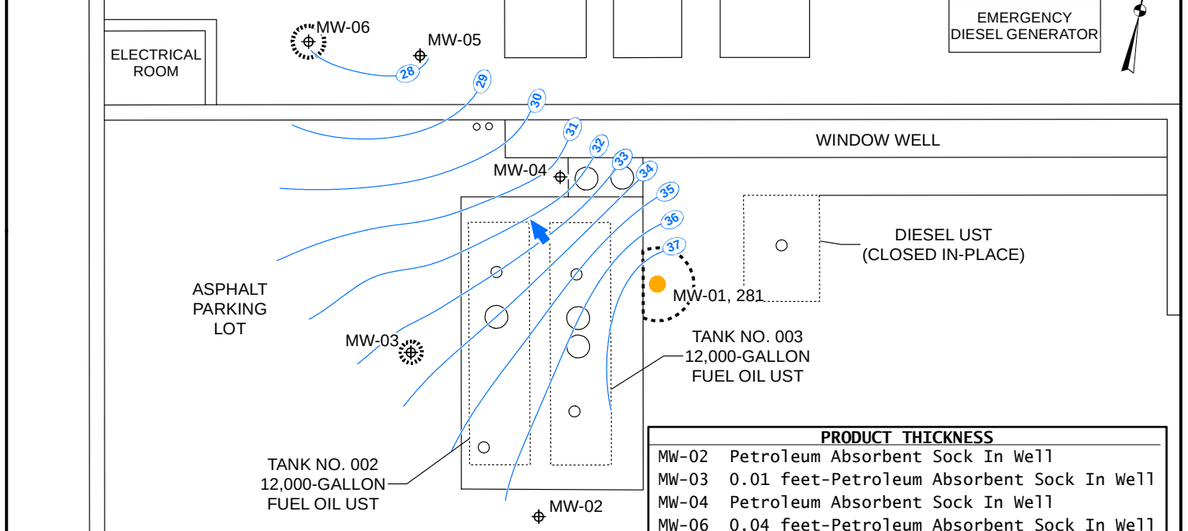
PRODUCT THICKNESS	
MW-02	Petroleum Absorbent Sock In Well
MW-03	Petroleum Absorbent Sock In Well
MW-04	Petroleum Absorbent Sock In Well
MW-05	0.06 feet

APRIL 2016



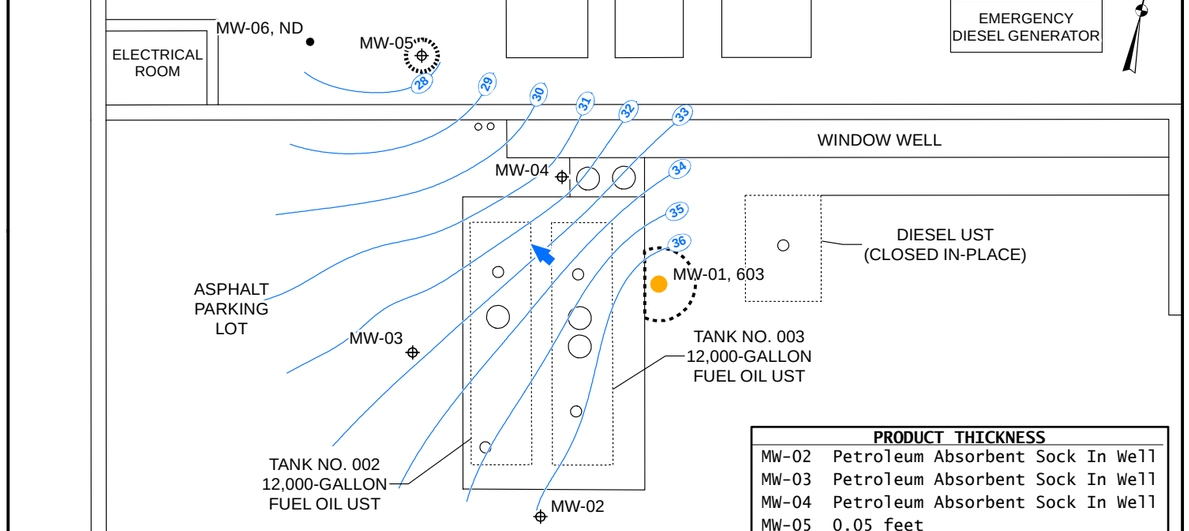
PRODUCT THICKNESS	
MW-02	Petroleum Absorbent Sock In Well
MW-03	0.01 feet-Petroleum Absorbent Sock In Well
MW-04	Petroleum Absorbent Sock In Well
MW-05	0.05 feet
MW-06	0.02 feet-Petroleum Absorbent Sock In Well

JULY 2016



PRODUCT THICKNESS	
MW-02	Petroleum Absorbent Sock In Well
MW-03	0.01 feet-Petroleum Absorbent Sock In Well
MW-04	Petroleum Absorbent Sock In Well
MW-06	0.04 feet-Petroleum Absorbent Sock In Well

OCTOBER 2016



PRODUCT THICKNESS	
MW-02	Petroleum Absorbent Sock In Well
MW-03	Petroleum Absorbent Sock In Well
MW-04	Petroleum Absorbent Sock In Well
MW-05	0.05 feet

Legend

- Monitoring Well
- Groundwater Flow Direction
- Groundwater Elevation Contour (33)
- Estimated Extent of Free Product
- Estimated Extent of Dissolved Phase Groundwater Contamination
- MW-01, 603 (Location ID / Concentration (µg/L))

Total VOC Concentration (µg/L):

- ND
- < 10
- 10 - 100
- 100 - 1,000
- 1,000 - 10,000
- > 10,000

NOTE: ND - Not Detected

20 0 20 Feet

BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
TOTAL VOC CONCENTRATIONS OVER TIME

URS

FIGURE 7

J:\Projects\10681461\DB\GIS\B1016\1016 TOTAL VOC.mxd 1/24/2017

N

SB-06

BASEMENT LEVEL
EAST WING

SB-07

SB-09

SB-11

SB-05A

SB-05C

SB-05B/TWP01

SB-04

MW-06

WEST
BOILER

MIDDLE
BOILER

EAST
BOILER

SB-08/TWP02

SB-10/TWP03

EMERGENCY
DIESEL GENERATOR

ELECTRICAL
ROOM

MW-05

SB-03

SB-01A

SB-01B

SB-02

SB-12/TWP04

SOUTH
WING

SB-19

WINDOW WELL

SB-21

MW-04

SB-18

SB-14A

SB-14B

SB-13

SB-20

SB-15

MW-01

DIESEL UST
(CLOSED IN-PLACE)

ASPHALT
PARKING
LOT

MW-03

TANK NO. 003
12,000-GALLON
FUEL OIL UST

SB-16

TANK NO. 002
12,000-GALLON
FUEL OIL UST

SB-17A

SB-17B

MW-02

Legend

- Proposed Monitoring Well
- Proposed Contingency Well*
- Proposed Basement Boring/Well
- Monitoring Well (URS 2014)
- Soil Boring (LBA 2009)
- Temporary Monitoring Well (LBA 2009)
- Proposed Test Pit
- Estimated Extent of Free Product (2014)
- Estimated Extent of Petroleum Impacts (2014)

* To be installed if vault is present and product is present in vault.

Basemap Source: Remedial Action Plan by Louis Berger & Associates, May 21, 2010.

10 0 10 Feet

BRIDGES JUVENILE JUSTICE CENTER
SPILL NO. 0812579
PROPOSED INVESTIGATION LOCATIONS

URS

FIGURE 8

J:\Projects\10683461\DB\GIS\B1016\Proposed Investigation Locations.mxd 10/26/2016

TABLE 1
BRIDGES JUVENILE CENTER
GROUNDWATER ELEVATION/PRODUCT THICKNESS MEASUREMENTS

Location I.D.	Measurement Date/Time	Measuring Point Elevation	Depth to Water (feet)	Water Elevation (feet)	Product Thickness (feet)	Specific Gravity	Corrected Water Elevation (feet)	Remarks
MW-01	11/12/2015	50.31	13.21	37.10	0.00		37.10	
	12/22/2015		13.08	37.23	0.00		37.23	
	1/22/2016		13.31	37.00	0.00		37.00	
	2/25/2016		11.93	38.38	0.00		38.38	
	4/5/2016		12.73	37.58	0.00		37.58	
	4/12/2016		12.55	37.76	0.00		37.76	
	5/16/2016		12.53	37.78	0.00		37.78	
	6/2/2016		12.34	37.97	0.00		37.97	
	7/14/2016		12.44	37.87	0.00		37.87	
	8/5/2016		12.38	37.93	0.00		37.93	
	9/7/2016		13.47	36.84	0.00		36.84	
	10/18/2016		13.50	36.81	0.00		36.81	
MW-02	11/12/2015	50.10	14.23	35.87	0.02		35.87	Petroleum Abs. Sock 100% Sat. - Replaced
	12/22/2015		13.99	36.11	0.00		36.11	Petroleum Absorbent Sock 25% Saturated
	1/22/2016		14.15	35.95	0.00		35.95	Petroleum Absorbent Sock 50% Saturated
	2/25/2016		13.20	36.90	0.00		36.90	Petroleum Abs. Sock 75% Sat. - Replaced
	4/5/2016		13.93	36.17	0.00		36.17	Petroleum Abs. Sock 50% Sat. - Replaced
	4/12/2016		13.76	36.34	0.00		36.34	Petroleum Abs. Sock 50% Sat. - Replaced
	5/16/2016		13.80	36.30	0.00		36.30	Petroleum Abs. Sock 50% Sat. - Replaced
	6/2/2016		13.67	36.43	0.00		36.43	Petroleum Abs. Sock 50% Sat. - Replaced
	7/14/2016		13.69	36.41	0.00		36.41	Petroleum Absorbent Sock 50% Saturated
	8/5/2016		13.58	36.52	0.00		36.52	Removed Petroleum Absorbent Sock
	9/7/2016		14.07	36.03	0.01		36.03	Installed Petroleum Absorbent Sock
	10/18/2016		14.06	36.04	0.00		36.04	Petroleum Abs. Sock 100% Sat. - Replaced
MW-03	11/12/2015	50.23	17.62	32.61	0.03		32.61	Petroleum Abs. Sock 100% Sat. - Replaced
	12/22/2015		17.47	32.76	0.00		32.76	Petroleum Absorbent Sock 50% Saturated
	1/22/2016		16.92	33.31	0.00		33.31	Petroleum Absorbent Sock 50% Saturated
	2/25/2016		16.29	33.94	0.00		33.94	Petroleum Abs. Sock 100% Sat. - Replaced
	4/5/2016		17.10	33.13	0.01		33.13	Petroleum Abs. Sock 100% Sat. - Replaced

NOTES:
1. NM - No measurement was taken.

TABLE 1
BRIDGES JUVENILE CENTER
GROUNDWATER ELEVATION/PRODUCT THICKNESS MEASUREMENTS

Location I.D.	Measurement Date/Time	Measuring Point Elevation	Depth to Water (feet)	Water Elevation (feet)	Product Thickness (feet)	Specific Gravity	Corrected Water Elevation (feet)	Remarks
MW-03	4/12/2016	50.23	16.85	33.38	0.00		33.38	Petroleum Absorbent Sock 25% Saturated
	5/16/2016		16.86	33.37	0.00		33.37	Petroleum Absorbent Sock 50% Saturated
	6/2/2016		16.65	33.58	0.00		33.58	Petroleum Absorbent Sock 50% Saturated
	7/14/2016		16.78	33.45	0.01		33.45	Petroleum Abs. Sock 100% Sat. - Replaced
	8/5/2016		16.28	33.95	0.00		33.95	Removed Petroleum Absorbent Sock
	9/7/2016		17.50	32.73	0.04		32.73	Installed Petroleum Absorbent Sock
	10/18/2016		17.43	32.80	0.00		32.80	Petroleum Abs. Sock 100% Sat. - Replaced
MW-04	11/12/2015	50.08	18.89	31.19	0.00		31.19	Petroleum Abs. Sock 100% Sat. - Replaced
	12/22/2015		18.65	31.43	0.00		31.43	Petroleum Absorbent Sock 25% Saturated
	1/22/2016		18.73	31.35	0.00		31.35	Petroleum Absorbent Sock 50% Saturated
	2/25/2016		18.47	31.61	0.00		31.61	Petroleum Absorbent Sock 50% Saturated
	4/5/2016		18.85	31.23	0.00		31.23	Petroleum Absorbent Sock 50% Saturated
	4/12/2016		18.61	31.47	0.00		31.47	Petroleum Absorbent Sock 50% Saturated
	5/16/2016		18.76	31.32	0.00		31.32	Petroleum Absorbent Sock 50% Saturated
	6/2/2016		18.76	31.32	0.00		31.32	Petroleum Absorbent Sock 50% Saturated
	7/14/2016		18.69	31.39	0.00		31.39	Petroleum Abs. Sock 100% Sat. - Replaced
	8/5/2016		18.68	31.40	0.00		31.40	Removed Petroleum Absorbent Sock
	9/7/2016		18.63	31.45	0.02		31.45	Installed Petroleum Absorbent Sock
	10/18/2016		18.64	31.44	0.00		31.44	Petroleum Abs. Sock 100% Sat. - Replaced
MW-05	11/12/2015	29.08	1.25	27.83	0.32		27.83	Removed 0.25 gal product
	12/22/2015		1.03	28.05	0.28		28.05	Removed 0.25 gal product
	1/22/2016		1.42	27.66	0.06		27.66	Removed 0.25 gal product
	2/25/2016		1.32	27.76	0.12		27.76	Removed 0.25 gal product
	4/5/2016		1.68	27.40	0.05		27.40	Removed 0.25 gal product
	4/12/2016		1.45	27.63	0.03		27.63	Removed 0.25 gal product
	5/16/2016		1.22	27.86	0.00		27.86	
	6/2/2016		1.16	27.92	0.00		27.92	
	7/14/2016		1.18	27.90	0.00		27.90	
	8/5/2016		1.14	27.94	0.00		27.94	

NOTES:
1. NM - No measurement was taken.

TABLE 1
BRIDGES JUVENILE CENTER
GROUNDWATER ELEVATION/PRODUCT THICKNESS MEASUREMENTS

Location I.D.	Measurement Date/Time	Measuring Point Elevation	Depth to Water (feet)	Water Elevation (feet)	Product Thickness (feet)	Specific Gravity	Corrected Water Elevation (feet)	Remarks
MW-05	9/7/2016	29.08	NM	0.00	NM		0.00	No Access to Building
	10/18/2016		1.36	27.72	0.05		27.72	
MW-06	11/12/2015	29.18	0.89	28.29	0.00		28.29	
	12/22/2015		0.63	28.55	0.00		28.55	
	1/22/2016		1.22	27.96	0.00		27.96	
	2/25/2016		1.18	28.00	0.04		28.00	Removed 0.25 gal product
	4/5/2016		1.39	27.79	0.01		27.79	Installed Petroleum Absorbent Sock
	4/12/2016		1.28	27.90	0.02		27.90	Petroleum Abs. Sock 100% Sat. - Replaced
	5/16/2016		1.23	27.95	0.04		27.95	Petroleum Abs. Sock 100% Sat. - Replaced
	6/2/2016		1.13	28.05	0.02		28.05	Petroleum Abs. Sock 100% Sat. - Replaced
	7/14/2016		1.20	27.98	0.04		27.98	Petroleum Abs. Sock 100% Sat. - Replaced
	8/5/2016		1.18	28.00	0.03		28.00	Petroleum Abs. Sock 100% Sat. - Replaced
	9/7/2016		NM	0.00	NM		0.00	No Access to Building
	10/18/2016		1.43	27.75	0.00		27.75	

NOTES:
1. NM - No measurement was taken.

TABLE 2
BRIDGES JUVENILE CENTER
GROUNDWATER ANALYTICAL RESULTS

Sample ID:			MW-01	MW-01	MW-01	MW-01	MW-06
Matrix			Water	Water	Water	Water	Water
Date Sampled:			01/22/16	04/12/16	07/14/16	10/18/16	01/22/16
Parameter	Units	Criteria*					
Volatiles							
Methyl t-Butyl Ether	UG/L	10	ND	ND	ND	ND	ND
Benzene	UG/L	1	3	2	1	3.3	ND
Ethylbenzene	UG/L	5	63	47	32	67.9	ND
Toluene	UG/L	5	ND	ND	ND	ND	ND
Total Xylenes	UG/L	5	66	33	22	79.7	ND
Isopropylbenzene	UG/L	5	13	10	9	17.2	1 J
n-Propylbenzene	UG/L	5	22	18	15	30.1	ND
p-Cymene (p-Isopropyltoluene)	UG/L	5	7	6	5	9.1	ND
tert-Butylbenzene	UG/L	5	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	UG/L	5	250 D	170	150	313	ND
1,3,5-Trimethylbenzene	UG/L	5	64	46	36	70	ND
sec-Butylbenzene	UG/L	5	6	5	4 J	ND	1 J
n-Butylbenzene	UG/L	5	15	13	7	12.2	ND
Total Volatiles	UG/L		509	350	281	602.5	2
Semivolatiles							
Naphthalene	UG/L	10	82	28	23	112	36
Acenaphthene	UG/L	20	ND	4 J	4 J	ND	4 J
Anthracene	UG/L	50	ND	ND	ND	ND	ND
Benzo(a)anthracene	UG/L	0.002	ND	ND	ND	ND	ND
Benzo(a)pyrene	UG/L	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	UG/L	0.002	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	UG/L	0.002	ND	ND	ND	ND	ND
Chrysene	UG/L	0.002	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	UG/L	50	ND	ND	ND	ND	ND
Fluoranthene	UG/L	50	ND	ND	ND	ND	ND
Fluorene	UG/L	50	ND	3 J	3 J	ND	4 J
Phenanthrene	UG/L	50	ND	2 J	ND	ND	5 J
Pyrene	UG/L	50	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	UG/L	50	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	UG/L	0.002	ND	ND	ND	ND	ND
Acenaphthylene	UG/L	50	ND	ND	ND	ND	ND
Total Semivolatiles	UG/L		82	37	30	112	49

*** - NYSDEC Groundwater Criteria,TOGS (1.1.1) June 1998, Revised April 2000, Class GA; and 10NYCRR Part 5, Subpart 5-1, Public Water Systems, NYSDOH.**

Concentration exceeds criteria.

(tblRES.LOGDATE Between #11/1/2015# And #10/18/2016#)

ND - Not Detected.; NA - Sample not analyzed for this analyte

J - Estimated concentration detected below the quantitation limit, or due to quality control outliers.

R - Rejected Value.; B - Compound detected in associated method blank.

D - Concentration reported from a secondary dilution analysis.

TABLE 2
BRIDGES JUVENILE CENTER
GROUNDWATER ANALYTICAL RESULTS

Sample ID:			MW-06
Matrix			Water
Date Sampled:			10/18/16
Parameter	**Units**	**Criteria***	
Volatiles			
Methyl t-Butyl Ether	UG/L	10	ND
Benzene	UG/L	1	ND
Ethylbenzene	UG/L	5	ND
Toluene	UG/L	5	ND
Total Xylenes	UG/L	5	ND
Isopropylbenzene	UG/L	5	ND
n-Propylbenzene	UG/L	5	ND
p-Cymene (p-Isopropyltoluene)	UG/L	5	ND
tert-Butylbenzene	UG/L	5	ND
1,2,4-Trimethylbenzene	UG/L	5	ND
1,3,5-Trimethylbenzene	UG/L	5	ND
sec-Butylbenzene	UG/L	5	ND
n-Butylbenzene	UG/L	5	ND
Total Volatiles	UG/L		ND
Semivolatiles			
Naphthalene	UG/L	10	ND
Acenaphthene	UG/L	20	ND
Anthracene	UG/L	50	ND
Benzo(a)anthracene	UG/L	0.002	ND
Benzo(a)pyrene	UG/L	ND	ND
Benzo(b)fluoranthene	UG/L	0.002	ND
Benzo(k)fluoranthene	UG/L	0.002	ND
Chrysene	UG/L	0.002	ND
Dibenz(a,h)anthracene	UG/L	50	ND
Fluoranthene	UG/L	50	ND
Fluorene	UG/L	50	ND
Phenanthrene	UG/L	50	ND
Pyrene	UG/L	50	ND
Benzo(g,h,i)perylene	UG/L	50	ND
Indeno(1,2,3-cd)pyrene	UG/L	0.002	ND
Acenaphthylene	UG/L	50	ND
Total Semivolatiles	UG/L		ND

*** - NYSDEC Groundwater Criteria,TOGS (1.1.1) June 1998, Revised April 2000, Class GA; and 10NYCRR Part 5, Subpart 5-1, Public Water Systems, NYSDOH.**

Concentration exceeds criteria.

(tblRES.LOGDATE Between #11/1/2015# And #10/18/2016#)

ND - Not Detected.; NA - Sample not analyzed for this analyte

J - Estimated concentration detected below the quantitation limit, or due to quality control outliers.

R - Rejected Value.; B - Compound detected in associated method blank.

D - Concentration reported from a secondary dilution analysis.

ATTACHMENT A

SITE PHOTOGRAPHS

PHOTOGRAPHIC LOG
Bridges Juvenile Justice Center, Bronx, NYC

Client Name:
New York City
Department of Design and Construction

Site Location:
1221 Spofford Avenue
Bronx, New York

Photo No.	Date:
1	6/25/14

Description:

View of concrete top slab and manways for the two 12,000 gallon No. 2 fuel oil USTs located south of the east wing building.

Photo No.	Date:
2	6/25/14

Description:

Boiler room wall closest to USTs showing signs of oil stains.

PHOTOGRAPHIC LOG
Bridges Juvenile Justice Center, Bronx, NYC

Client Name:
New York City
Department of Design and Construction

Site Location:
1221 Spofford Avenue
Bronx, New York

Photo No.	Date:
3	6/25/14

Description:

Area in the boiler room between the wall closest to USTs and the three boilers, facing west.

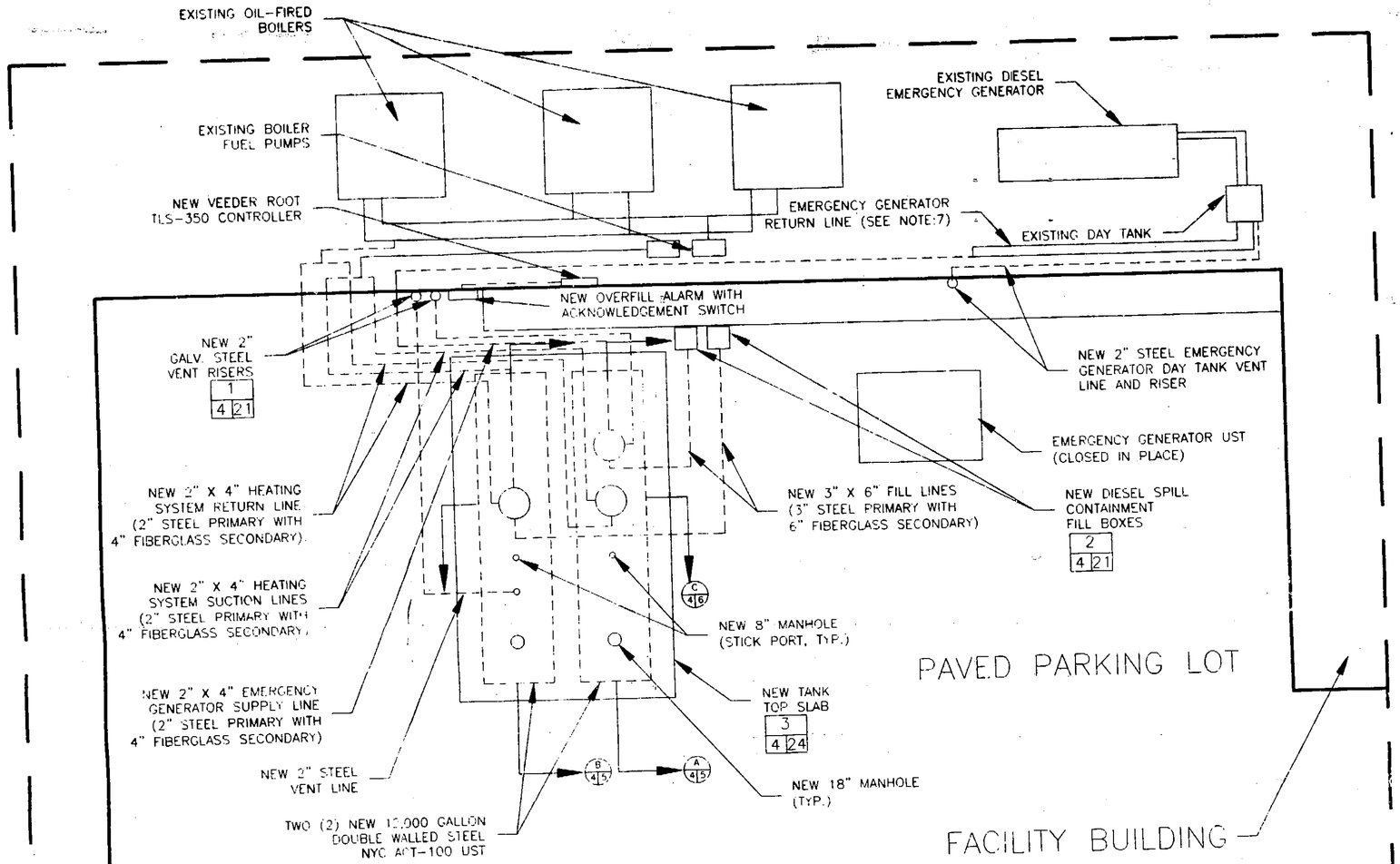
Photo No.	Date:
4	6/25/14

Description:

Area in the boiler room located between boilers and the electric room, facing south.

ATTACHMENT B

LIRO AS-BUILT DRAWING



NOTES:

1. THE CONTRACTOR SHALL MARK OUT ALL UTILITIES PRIOR TO STARTING CONSTRUCTION.

2. THE MAXIMUM CLEARANCE HEIGHT AT THE ENTRANCE TO THE PARKING LOT IS 12'-6".

3. THE LOCATION OF THE TLS-350 CONTROLLER IS APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE THE CONTROLLER AS APPROVED BY THE CONSTRUCTION MANAGER. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY ELECTRICAL WIRE, CONDUIT AND EQUIPMENT REQUIRED TO MAKE A COMPLETE INSTALLATION.

4. THE CONTRACTOR SHALL INSTALL ANTI-SYPHON VALVES AND BALL VALVES IN BOTH THE EMERGENCY GENERATOR AND HEATING SYSTEM SUPPLY LINES AT THE HIGHEST ELEVATION POINT. THE ANTI-SYPHON VALVES SHALL BE UNIVERSAL MODEL 403.10 AS MANUFACTURED BY UNIVERSAL VALVE.

5. THE HEATING SYSTEM BURNER SUCTION LINE SHALL BE INSTALLED AT A HEIGHT ABOVE THE EMERGENCY GENERATOR SUCTION LINE AS TO INSURE A MINIMUM OF 5,000 GALLONS OF FUEL TO SUPPLY THE EMERGENCY GENERATORS AT ALL TIMES.

6. THE CONTRACTOR SHALL MOUNT THE OVERFILL ALARM OUTSIDE THE FACILITY NEARBY AND IN CLEAR SIGHT OF THE FILL BOX AT A HEIGHT OF APPROXIMATELY 10 FEET. THE ACKNOWLEDGEMENT SWITCH FOR THE ALARM SHALL BE PLACED IN CLOSE PROXIMITY OF THE ALARM. THE SWITCH SHALL BE MOUNTED AT A HEIGHT OF APPROXIMATELY 6 FEET.

7. THE EMERGENCY GENERATOR RETURN LINE IS CONNECTED TO THE EMERGENCY GENERATOR SUPPLY LINE IN ITS EXISTING CONDITION. NEW PIPING SHALL BE CONNECTED TO THE EXISTING COMBINATION SUPPLY AND RETURN LINE INSIDE THE BUILDING.

8. THE CONTRACTOR SHALL TEST THE TIGHTNESS OF THE EXISTING EMERGENCY GENERATOR SUPPLY AND RETURN PIPING INSIDE THE BUILDING BEFORE IT MAY BE CONNECTED TO NEW PIPING. IF THE EXISTING PIPING FAILS THE TEST THE CONTRACTOR SHALL REPLACE WITH NEW 1/2" STEEL PIPING IN THE SAME LOCATION AS THE EXISTING.

9. THE CONTRACTOR SHALL TEST THE DAY TANK PUMP'S ABILITY TO DRAW FUEL FROM THE NEW TANK LOCATION BEFORE REMOVING THE EXISTING EMERGENCY GENERATOR UST. THE CONTRACTOR SHALL INSTALL A NEW PUMP AT THE DAY TANK IF THE EXISTING PUMP IS NOT CAPABLE OF DRAWING FUEL FROM THE NEW TANK LOCATION.

ACCEPTABLE FOR PERMIT UNDER DIRECTIVE NO. 14/1979
SEP 14 2001
J.M.

PART SITE PLAN

10 0 10

SCALE IN FEET

FUEL TANK SYSTEM CERTIFICATION

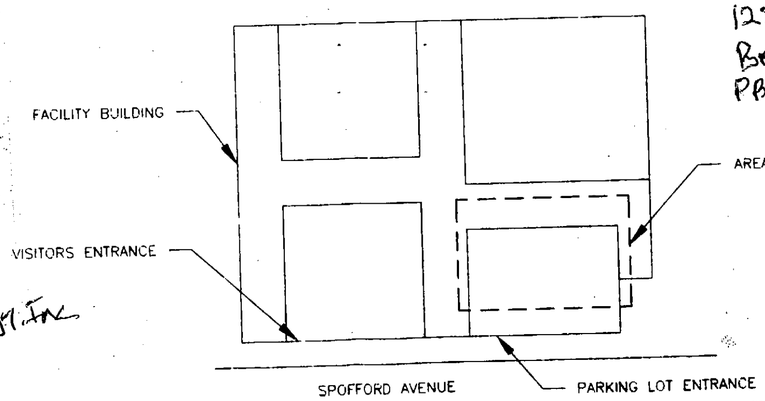
THIS INSTALLATION WAS PERFORMED BY OTHERS WHO ARE NOT AVAILABLE TO SIGN THIS CERTIFICATION REQUIRED BY 6NYCRR PART 614. ACCORDINGLY, THE FOLLOWING CERTIFICATION IS BEING MADE:

"BASED UPON REVIEW OF AVAILABLE DOCUMENTATION, TO THE BEST OF MY KNOWLEDGE, THIS SYSTEM HAS BEEN DESIGNED AND INSTALLED IN COMPLIANCE WITH THE NEW YORK STATE STANDARDS FOR NEW AND SUBSTANTIALLY MODIFIED PETROLEUM STORAGE FACILITIES, 6NYCRR PART 614."

THE DRAWINGS ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED UPON INFORMATION ASCERTAINED THROUGH A REVIEW OF MUNICIPAL RECORDS, A SITE INSPECTION, VISUAL SURVEY AND PREVIOUS PLANS OR DRAWINGS AVAILABLE FOR THIS SITE.

A COPY OF THESE PLANS IS BEING SUBMITTED TO THE NYSDEC AND IS TO BE KEPT ON THE SITE BY THE TANK OWNER AT ALL TIMES FOR THE INSPECTOR'S REFERENCE.

American Resource Technology, Inc
License # 063849251
Robert A Quane



SITE PLAN
N.T.S.

1221 Spofford Ave
Bronx, NY 10474
PBS# 2-604085

200685384
DEPARTMENT OF BUILDINGS

STATE OF NEW YORK
BRANT AIDIKOFF
073459
LICENSED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION

REVISIONS

LiRo-Kassner, Inc.
3 Aerial Way
Syosset, New York

DDC
City of New York
Department of Design And Construction
Transportation Program Unit

JOB TITLE AND LOCATION:
CLOSURE / REMOVAL / REPLACEMENT OF PETROLEUM STORAGE TANKS FOR FDNY AND DJJ

DRAWING TITLE:
SPOFFORD AVENUE FACILITY REPLACEMENT PLAN

DATE: JULY 2001		LIRO JOB NO.: 000-14-205	DRAWING NO.
DESIGNED BY: M.B.	CHECKED BY: B.A.	SCALE: AS SHOWN	4
DRAWN BY: M.B.	PROJ. ENG.: B.A.	SHEET 4 OF 26	

WARNING
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION

STATE OF NEW YORK
COUNTY OF Bronx

Pursuant to CPLR 4518(c), this certification will serve to authenticate this document as a true and accurate copy of a record of the Department of Buildings. This record was made in the regular course of business of the Department of Buildings; it is the regular practice of the Department to make records of this type; and the record was made at or about the same time of occurrence of the event recorded.

ATTACHMENT C

PETROLEUM STORAGE TANK INVENTORY INFORMATION

Table C-1
Petroleum Bulk Storage Tank Records
Former Bridges Juvenile Justice Center
1221 Spofford Avenue, Bronx, New York

PBS Record Information						URS Record Information					Confidence		Action	
Tank ID	Capacity/Type	Contents	Status	Install Date	Closure Date	Tank ID	Capacity/Type	Contents	Status	Closure Date	Level	Discrepancy	Items	Notes
001	20,000 gal UST	#6 Fuel Oil	Removed		7/1/2002	001	20,000 gal UST	#6 Fuel Oil	Removed	7/1/2002	1			
002	12,000 gal UST	#2 Fuel Oil	In Service	7/1/2002		002	12,000 gal UST	#2 Fuel Oil	In Service		1			
003	12,000 gal UST	#2 Fuel Oil	In Service	7/1/2002		003	12,000 gal UST	#2 Fuel Oil	In Service		1			
Diesel	5,000 gal AST	Diesel	Closed In Place	4/1/1969	8/1/2002	Diesel	5,000 gal AST	Diesel	Closed In Place	8/1/2002	1			
Heat	20,000 gal AST	#2 Fuel Oil	Removed	2/1/1950	7/1/2002	Heat	20,000 gal AST	#2 Fuel Oil	Removed	7/1/2002	1			

Confidence Levels:
1 - High
2 - Moderate
3 - Low/none

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Bulk Storage Database Search Details

Facility Information

Site No.: 2-604085
Status: Active
Expiration Date: 05/18/2019
Site Type: PBS
Site Name: BRIDGES JUVENILE FACILITY
Address: 1221 SPOFFORD AVENUE
Locality: BRONX
State: NY
Zipcode: 10474
County: Bronx

Owner(s) Information

Facility Owner: CITY OF NEW YORK
150 WILLIAM STREET . NEW YORK, NY. 10038
Mail Contact: NYC ADIMISTRATION FOR CHILDRENS SERVICES
150 WILLIAM STREET . NEW YORK, NY. 10038

Tank Information

5 Tanks Found

Tank No	Tank Location	Status	Capacity (Gal.)
001	Underground	Closed - Removed	20000
002	Underground	In Service	12000
003	Underground	In Service	12000
DIESEL	Aboveground in Subterranean vault with access for inspections	Closed-In Place	5000
HEAT	Aboveground in Subterranean vault with access for inspections	Closed - Removed	20000

Refine This Search