August 9, 2019 Reference No. 11137172

Mr. Michael Belveg
Assistant Engineer (Environmental)
Division of Environmental Remediation
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204

Dear Mr. Belveg:

Re: Monitoring Well Assessment and LNAPL Gauging Event Letter Report
Southern Terminals
Cold Springs Terminal Site, Hillside Road
Lysander, New York

1. Introduction

GHD has prepared the following letter report on behalf of Southern Terminals. GHD was retained to perform an evaluation of the Cold Springs Terminal Site located along Hillside Road in Lysander, New York (Site). A Site Location Map is presented on Figure 1. The Site contains two portions, the Northern Terminal (NT) and the Southern Terminals (ST). The NT portion of the Site consists of approximately 2.75 acres and is located north of Hillside Road. The majority of the former terminal infrastructure has been demolished. The ST portion of the Site consists of approximately 1.6 acres and is located south Hillside Road, to the southwest and southeast of the Northern Terminal. Aboveground storage tank (AST) removal on the ST was completed in July 2017.

The purpose of GHD's evaluation was to assess the Site and current monitoring well network conditions. Figure 2 illustrates the locations of all known wells on the NT and ST portion of the Site, and was compiled from historical documents. The objectives of this assessment were to gain an up-to-date understanding of current Site features and conditions following the removal of the ASTs, as well as light non-aqueous phase liquid (LNAPL) conditions at the Site. Prior to this assessment, the most recent LNAPL monitoring data was collected in 2014 and reported in the Remedial Action Work Plan for the Site (GES, 2015).

This letter contains a summary of the field activities performed, findings and observations collected during the assessment, and conclusions. The information obtained will assist with determining the feasibility of implementing remedial activities as outlined in the New York State Department of Environmental Conservation (NYSDEC) -approved RAWP, or whether modifications to the design will be required to address current Site conditions.

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2. Field Activities

Site and monitoring well network assessment activities were completed by GHD personnel between June 5 and June 7, 2019, under the full-time oversight of NT's environmental consultant, Arcadis.

2.1 Monitoring Well Network Assessment

Monitoring wells on the NT portion of the Site that were able to be located were photographed on June 5, 2019 and are summarized in the Northern Terminal Photographic Log included as Attachment A. No NT monitoring wells were opened, and their conditions were not recorded.

Monitoring wells on the ST portion of the Site that were able to be located were also photographed on June 5, 2019 and are summarized in the Southern Terminal Photographic Log included as Attachment B. In addition, monitoring wells located on the ST were assessed by:

- Documenting conditions of each well's surface features
- Opening well covers or manholes to document conditions of riser pipes and J-plugs
- Taking photographs

Results of the monitoring well network assessment are summarized in Table 1 and on Figure 3.

2.2 LNAPL Gauging

In order to collect a contemporaneous data set, the LNAPL gauging event was completed in a single day on June 6, 2019. LNAPL gauging activities included:

- Accessing the wells
- Measuring and recording a headspace volatile organic vapor reading upon removal of the J-plug, if present, using a MiniRAE 3000 photoionization detector (PID)
- Measuring and recording the depth to water, depth to the LNAPL surface, and total depth of well using a Solinst Interface Meter

Down-well equipment was decontaminated between each monitoring well location by wiping with an Alconox and water solution and drying with a cloth rag.

LNAPL gauging data is summarized in Table 2 and approximate extents of LNAPL are presented on Figure 4.

3. Findings and Observations

3.1 Overall Site Conditions

The NT was densely vegetated with a chain-link fence surrounding the majority of the terminal north of Hillside Road. The fence was in generally good condition with several readily accessible entry points. An

apparent recovery system building and associated piping and electrical system was abandoned adjacent to the northern edge of Hillside Road and was in poor condition.

The ST portion of the Site was surrounded by chain-link fence and concrete block containment walls that appeared to be in good condition. The chain-link fence appeared to have been recently repaired. The Site is covered with dense vegetation (along the southern portions adjacent to the river), asphalt pavement, buildings, and secondary AST containment areas. The ASTs and their associated features have been removed; however, the piping, loading racks, Site buildings, and secondary containment walls remain. Several sections of the secondary containment walls were either knocked over or filled over with stone, likely for equipment access for AST removal activities. The floors of the containment areas contained ponded water with visual evidence of phragmites and cattail in segmented areas. Monitoring wells reported to be within the central portions of the containment areas were either destroyed or covered by feet of stone and could not be located. Monitoring wells within containment areas that were found and identified were located primarily along the outer edges of containment structures with the majority being damaged to varying degrees by AST removal activities.

Several unlabeled 55-gallon steel drums were encountered on the ST, as follows:

- Four drums, in poor condition, were identified in the northeast corner of the southwestern terminal secondary containment area. The contents of those drums are unknown. There was no staining observed in the vicinity.
- One drum, in poor condition, was identified in the southwest corner of the southwestern terminal secondary containment area. The contents of the drum is unknown. There was no staining observed in the vicinity of the drum.
- Four drums appearing to be in fair condition were identified inside the trailer located near the westernmost extent of the ST. The drums were closed-top style and contained unknown materials. Staining was observed on the floor of the trailer in their vicinity. Based on the presence of various debris in the trailer, it was not possible to determine if the staining was associated with the drums or another source.

Various surface debris, including refuse, old drums and containers, metal, concrete debris, office supplies, etc., were located across the Site and within the on-Site buildings.

3.2 Northern Terminal Monitoring Wells

In total, 52 of the 53 anticipated monitoring wells on the NT portion of the Site were located. Each of the monitoring wells was photographed and generally appeared to be in good condition based on exterior observations, with the exception of several wells that were visibly damaged. Several of the monitoring wells located east of Hillside Road - HD1, HD3A, HD6, HD7, and HD8 - were 1-inch diameter PVC pipes with no protective casings or covers. The monitoring wells located adjacent to the northern edge of Hillside Road, designated B1 through B18, were connected via PVC piping likely associated with a historical recovery system.

One unknown/unexpected monitoring well was located near the southeastern-most corner of the NT portion of the Site, adjacent to Hillside Road and north of the easternmost edge of the ST. The monitoring well - which was not shown on any available Site drawings and was unknown to the Arcadis representative - was completed with a 4-inch diameter steel casing set in a concrete pad and had a locked cover.

3.3 Southern Terminal Monitoring Wells

In total, 49 of the 84 anticipated monitoring wells on the ST portion of the Site were located. In addition, two staff gauges that were located on a boat dock extending into the Seneca River west of the Site, were identified and gauged. Each of the located monitoring wells was gauged, with the exception of:

- AMW2 – Stickup protective casing and concrete pad were dislodged and the casing was bent over to ground surface
- S1 – Well riser could not be located within manhole filled with stone
- S22 – Stainless steel riser with no protective casing - riser was bent over to ground surface and crushed flat
- S23 – Stainless steel riser with no protective casing - riser was crushed and the water level meter would not advance beyond that point

Of the 45 monitoring wells that were gauged, the following were in poor condition:

- A3 – Buried in stone within manhole structure with no cover
- A5 – Buried in stone within manhole structure with no cover
- A14 – Stainless steel casing was bent to side and in the edge of a brush/debris pile
- AMW1 – No flush-mount curb box cover, polyvinyl chloride (PVC) riser was broken and the J-plug was missing
- AMW-8 – Buried in stone within flush-mount curb box with no cover
- PZ104S – Flush-mount curb box cover broken
- PZ105D – Concrete pad and flush-mount curb box and cover were cracked and broken
- S3 – Buried in stone within manhole structure with no cover
- SMW-3 – Protective casing was tilted at an angle

At the time of gauging, three unknown/unexpected monitoring wells were identified, as follows:

- 4-inch diameter PVC well in flush-mount curb box that was located in the asphalt pavement area east of the central dispensing rack
- Two 6-inch diameter PVC pipes extending from the ground surface and capped with slip caps, both of which were located near the eastern edge of the ST

Each of the unknown wells were gauged and the information was recorded for reference.

Results of the monitoring well network assessment are summarized in Table 1 and on Figure 3. LNAPL gauging data is summarized in Table 2 and approximate extents of LNAPL are presented on Figure 4.

3.4 Monitoring Well Repairs

Based on observations made during the monitoring well assessment, it was determined that seven monitoring wells on the ST portion of the Site were in need of minor repairs. GHD personnel made the repairs, as described below, on June 7, 2019.

- A3 – A rubber flexible coupling and 16 inches of PVC pipe were installed on top of the existing 2-inch diameter PVC pipe within the manhole structure and the J-plug was reused. The manhole structure, which was missing a cover, was backfilled to grade with stone that was initially removed to locate the monitoring well for gauging.
- A5 – A rubber flexible coupling and 14 inches of PVC pipe were installed on top of the existing 4-inch diameter PVC pipe within the manhole structure and the J-plug was reused. The manhole structure, which was missing a cover, was backfilled to grade with stone that was initially removed to locate the monitoring well for gauging.
- AMW1 – 1.5 inches of the existing 2-inch diameter PVC well riser was removed and a new J-plug was added. The missing flush-mount curb box cover was replaced with the flush-mount cover from the uprooted and overturned concrete pad and flush-mount curb box from assumed PZ104D. The top of the PVC pipe is cracked and the well is in overall poor condition.
- AMW8 – Removed the slip fitting cap from the top of the PVC well riser (which was 3.25 inches above grade) and added a rubber flexible coupling and 14 inches of PVC pipe on the top of the existing 2-inch diameter PVC well riser. The J-plug was reused. The manhole structure, which was missing a cover, was backfilled to grade with stone that was initially removed to locate the monitoring well for gauging.
- S3 – The existing rubber flexible coupling was reused and 36 inches of PVC pipe was installed on the top of the existing 4-inch diameter PVC pipe within the manhole structure and a new J-plug was added. The manhole structure, which was missing a cover, was backfilled to grade with stone that was initially removed to locate the monitoring well for gauging.
- S5 – The manhole structure that the monitoring well was located in had no cover and was not previously backfilled to grade, creating an unnecessary hazard. A rubber flexible coupling and 27 inches of PVC pipe were installed on top of the existing 4-inch diameter PVC pipe within the manhole structure and the J-plug was reused. The manhole structure, which was missing a cover, was backfilled to grade with concrete rubble and stone from the Site.
- S18 – The manhole structure that the monitoring well was located in and had no cover and was not previously backfilled to grade, creating an unnecessary hazard. As a result, a rubber flexible coupling and 14 inches of PVC pipe were installed on top of the existing 4-inch diameter PVC pipe within the

manhole structure and the J-plug was reused. The manhole structure, which was missing a cover, was backfilled to grade with riprap and stone from the Site.

Photographs documenting the repairs are included in the ST photographic log in Attachment B.

3.5 Monitoring Well Repair or Replacement

The monitoring well assessment activities identified several monitoring wells that were significantly damaged to the point that more extensive measures will need to be taken to repair or replace the wells. Wells proposed for repairs include:

- A3
- A12
- A14

Wells proposed for replacement include:

- A13
- A16
- A17
- A19
- A20
- A25
- HD4A
- S1
- S10
- S12
- S14
- S15
- S16
- S17
- S19
- S21
- S22
- S24
- SMW3

Rationale for repair or replacement of monitoring wells which are damaged or could not be located is summarized in Table 3. Monitoring wells recommended for repair or replacement are shown on Figure 5.

4. Conclusions

AST removal activities appear to have significantly impacted portions of the ST and the condition of specific wells within the monitoring well network. ST respectfully suggests that the remaining piping, loading racks, and miscellaneous drums and other debris and structures on-Site are issues that should be addressed by the property owner and potentially BP and Buckeye.

Approximately half of the monitoring wells previously located on the ST portion of the Site were located and were in sufficient condition to be gauged during this field effort. Of those wells, 15 contained measurable thicknesses of LNAPL ranging from 0.01 to 3.48 feet, which is consistent with previous observations.

Based on the findings of these assessment activities, monitoring well replacement activities and additional data collection are warranted for the Site. A Supplemental Investigation Work Plan will be prepared to outline these additional activities for submittal to, and approval by, NYSDEC.

5. References

Groundwater & Environmental Services, Inc. (GES), 2015. *Remedial Action Work Plan, Cold Springs Terminal, Lysander, New York, NYSDEC Spills Incident #89-04923*.

Please do not hesitate to contact us with questions or if additional information is needed.

Sincerely,

GHD

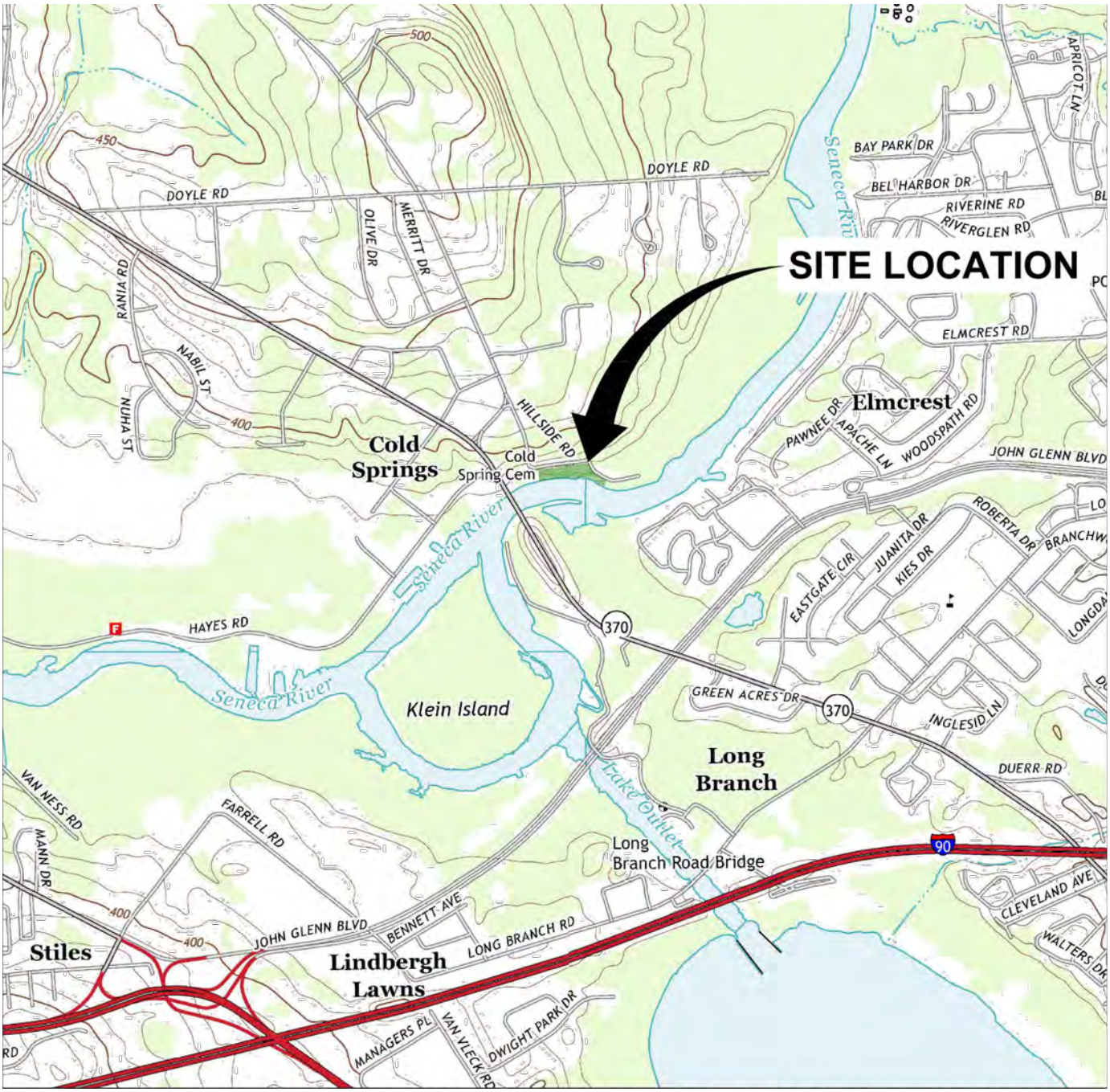
Alyssa Cruikshank

AC/cs/1

Encl.

Figure 1 – Site Location Map
Figure 2 – Well Location Map
Figure 3 – Well Assessment Summary
Figure 4 – LNAPL Thickness in Feet
Figure 5 – Proposed Monitoring Wells to be Repaired or Replaced
Table 1 – Monitoring Well Assessment Status
Table 2 – LNAPL Thicknesses
Table 3 – Monitoring Well Repair or Replacement Rationale
Attachment A – Northern Terminal Site Photographs
Attachment B – Southern Terminal Site Photographs

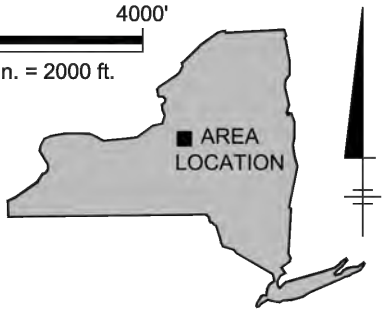
cc: Harry Warner, NYSDEC
Ben Conlon, Esq., NYSDEC
Wendy Marsh, Esq., Hancock Estabrook, LLP
S. David Devaprasad, Esq., Devaprasad pllc
Dennis Hoyt, GHD



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., BALDWINSVILLE, BREWERTON, CAMILLUS & SYRACUSE WEST, NY, 2013.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



NEW YORK

2019Q1-Title Block

SOUTHERN TERMINALS GROUP
COLD SPRINGS TERMINAL SITE
HILLSIDE ROAD, LYSANDER, NEW YORK

SITE LOCATION MAP

Project No. 111-37172
Report No. 001
Date JUL 19

FIGURE 1

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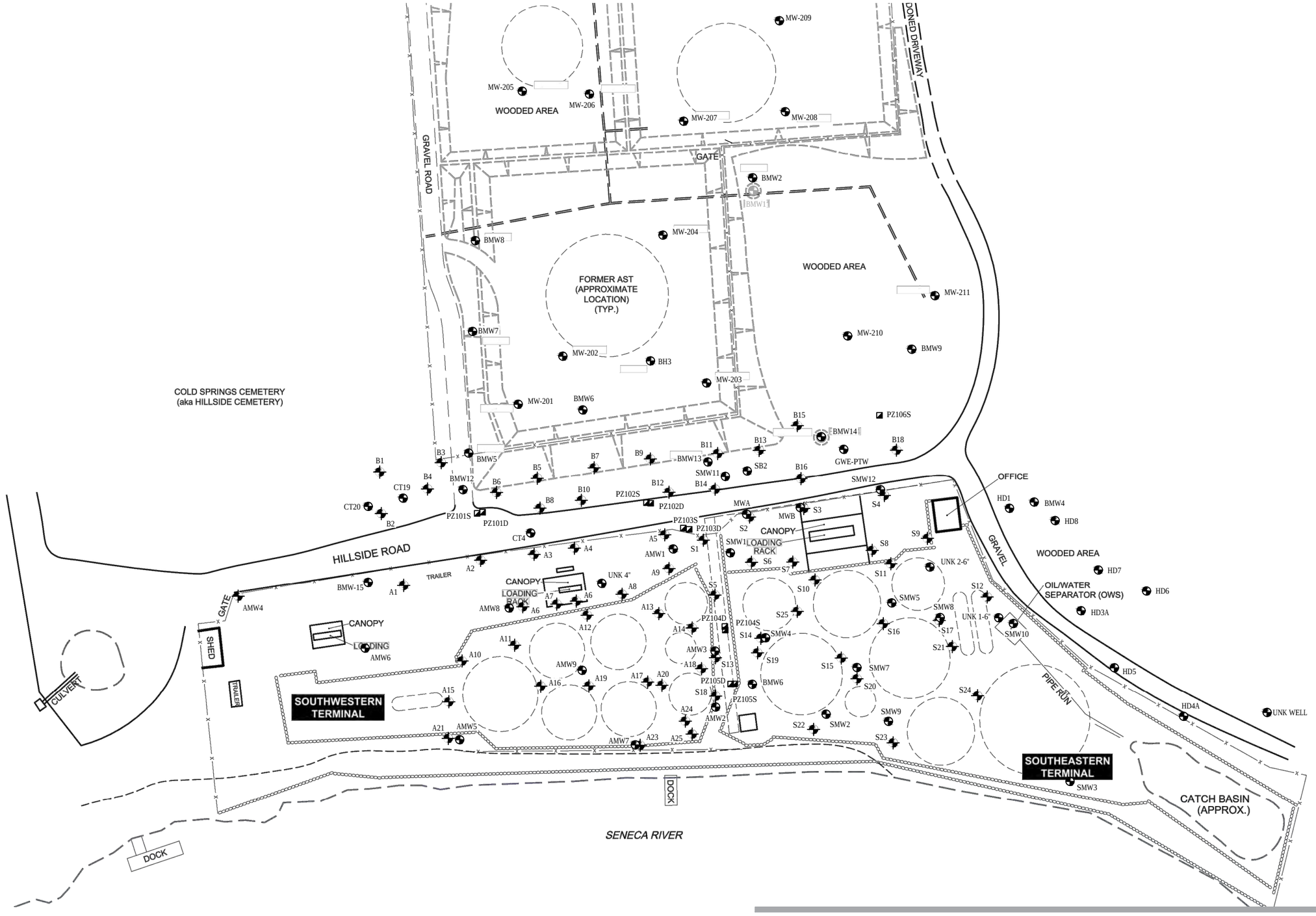

GHD

SOUTHERN TERMINALS GROUP
COLD SPRINGS TERMINAL SITE
HILLSIDE ROAD, LYSANDER, NEW YORK

WELL LOCATION MAP

Project No. 111-37172
Report No. 001
Date AUG 19

FIGURE 2

Filename: P:\Drawings\10000000s\11137172 - Cold Springs\Report 1\CADD\Drawings\Figures\Report Figures\11137172 - Figures.dwg
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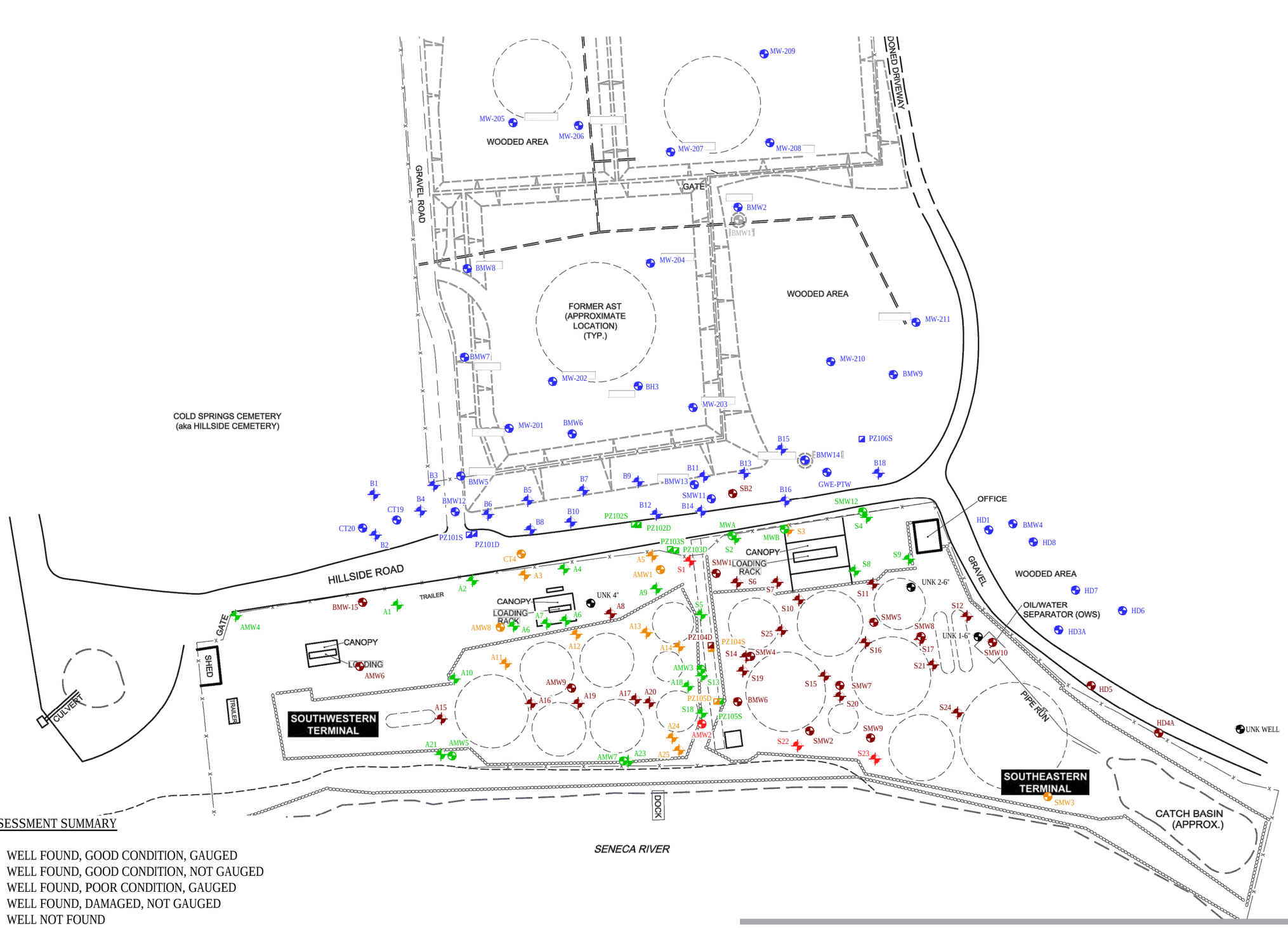

WELL ASSESSMENT SUMMARY

- WELL FOUND, GOOD CONDITION, GAUGED
- WELL FOUND, GOOD CONDITION, NOT GAUGED
- WELL FOUND, POOR CONDITION, GAUGED
- WELL FOUND, DAMAGED, NOT GAUGED
- WELL NOT FOUND

NOTE:

1. THERE ARE TWO A6 SHOWN ON FIGURE

GHD

SOUTHERN TERMINALS GROUP
COLD SPRINGS TERMINAL SITE
HILLSIDE ROAD, LYSANDER, NEW YORK

WELL ASSESSMENT SUMMARY

Project No. 111-37172
Report No. 001
Date AUG 19

FIGURE 3

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BMW2 MONITORING WELL

BMW1 MONITORING WELL NOT FOUND

0.06 APPARENT LNAPL THICKNESS

APPARENT LNAPL THICKNESS IN FEET

- 0-1
- 1-2
- 2-3
- 3-4

NOTE:

1. THERE ARE TWO A6 SHOWN ON FIGURE

SOUTHERN TERMINALS GROUP
COLD SPRINGS TERMINAL SITE
HILLSIDE ROAD, LYSANDER, NEW YORK

LNAPL THICKNESS IN FEET
JUNE 6-7, 2019

Project No. 111-37172
Report No. 001
Date AUG 19

FIGURE 4

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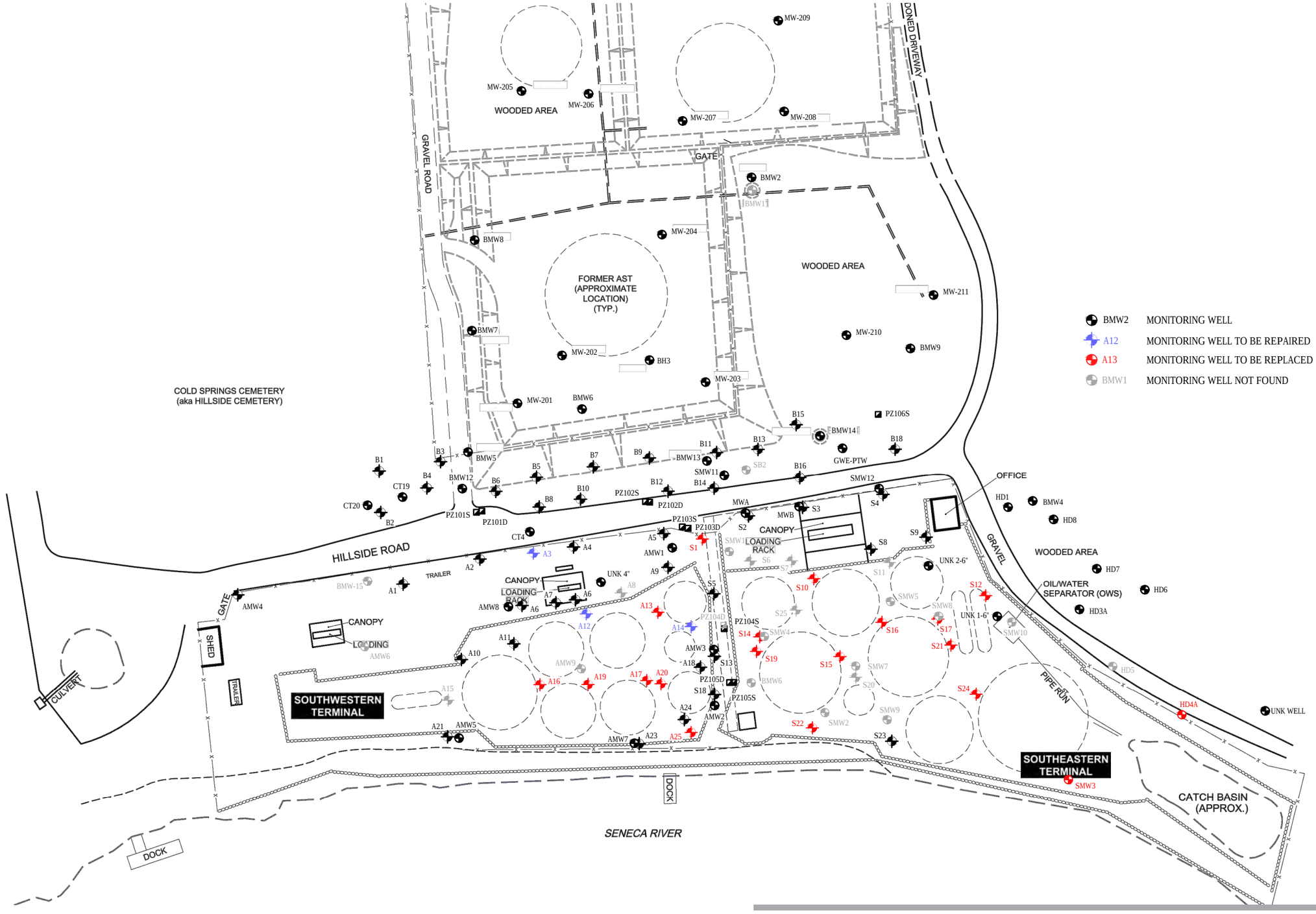

BMW2 MONITORING WELL

A12 MONITORING WELL TO BE REPAIRED

A13 MONITORING WELL TO BE REPLACED

BMW1 MONITORING WELL NOT FOUND

SOUTHERN TERMINALS GROUP
COLD SPRINGS TERMINAL SITE
HILLSIDE ROAD, LYSANDER, NEW YORK

PROPOSED MONITORING WELLS TO BE REPAIRED OR REPLACED

Project No. 111-37172
Report No. 001
Date AUG 19

FIGURE 5

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Table 1

Monitoring Well Assessment Status
Southern Terminal
Lysander, New York
June 5 - 7, 2019

Southern Terminals				Northern Terminals			
	Well Located		Poor Condition/		Well Located		Poor Condition/
Monitoring Well ID	Y	N	Damaged	Monitoring Well ID	Y	N	Damaged
A1	X			B1	X		
A2	X			B2	X		
A3	X		Y	B3	X		
A4	X			B4	X		
A5	X		Y	B5	X		
A6	X			B6	X		
A6	X			B7	X		
A7	X			B8	X		
A8[1]		X		B9	X		
A9	X			B10	X		
A10	X			B11	X		
A11	X		Y	B12	X		
A12	X		Y	B13	X		
A13	X		Y	B14	X		
A14	X		Y	B15	X		
A15[1]		X		B16	X		
A16[1]		X		B18	X		
A17[1]		X		BH3	X		
A18	X			BMW1	X		
A19[1]		X		BMW2	X		
A20[1]		X		BMW4	X		
A21	X			BMW5	X		
A23	X			BMW6	X		
A24	X		Y	BMW7	X		
A25	X		Y	BMW8	X		
AMW1	X		Y	BMW9	X		
AMW2	X		Y	BMW12	X		
AMW3	X			BMW13	X		
AMW4	X			BMW14	X		
AMW5	X			CT19	X		
AMW6[1]		X		CT20	X		
AMW7	X			GWE-PTW	X		
AMW8	X		Y	HD1	X		
AMW9[1]		X		HD3A	X		
BMW6[1]		X		HD6	X		
BMW-15[1]		X		HD7	X		
CT4	X		Y	HD8	X		
HD4A[1]		X		MW-201	X		
HD5[1]		X		MW-202	X		
MWA	X			MW-203	X		
MWB	X			MW-204	X		
PZ102D	X			MW-205	X		
PZ102S	X			MW-206	X		
PZ103D	X			MW-207	X		
PZ103S	X			MW-208	X		
PZ104D[1]		X		MW-209	X		
PZ104S	X		Y	MW-210	X		
PZ105D	X		Y	MW-211	X		

Table 1

Monitoring Well Assessment Status
Southern Terminal
Lysander, New York
June 5 - 7, 2019

Monitoring Well ID	Southern Terminals Well Located Y	Well Located N	Poor Condition/ Damaged	Monitoring Well ID	Northern Terminals Well Located Y	Well Located N	Poor Condition/ Damaged
PZ105S	X			PZ101D	X		
S1	X		Y	PZ101S	X		
S2	X			PZ106S	x		
S3	X		Y	SB2[(1)]		X	
S4	X			SMW11	X		
S5	X			Unknown	X		
S6[(1)]		X					
S7[(1)]		X					
S8	X						
S9	X						
S10[(1)]		X					
S11[(1)]		X					
S12[(1)]		X					
S13	X						
S14[(1)]		X					
S15[(1)]		X					
S16[(1)]		X					
S17[(1)]		X					
S18	X						
S19[(1)]		X					
S20[(1)]		X					
S21[(1)]		X					
S22	X		Y				
S23	X		Y				
S24[(1)]		X					
S25[(1)]		X					
SMW1[(1)]		X					
SMW2[(1)]		X					
SMW3	X		Y				
SMW4[(1)]		X					
SMW5[(1)]		X					
SMW7[(1)]		X					
SMW8[(1)]		X					
SMW9[(1)]		X					
SMW10[(1)]		X					
SMW12	X						
UNKNOWN 1	X						
UNKNOWN 2	X						
UNKNOWN 3	X						

Notes:

[(1)] - Monitoring well not located

Table 2

LNAPL Thicknesses
Southern Terminal
Lysander, New York
June 6-7, 2019

Monitoring Well ID	Depth to LNAPL (feet bmp)	Depth to Water (feet bmp)	LNAPL Thickness (feet)	Well Total Depth (feet bmp)
A1	-	9.21	-	11.02
A2	-	9.47	-	12.10
A3	12.69	13.55	0.86	13.81
A4	-	DRY	-	10.60
A5	-	11.98	-	17.99
A6	-	-	-	-
A6	-	11.96	-	12.09
A7	-	11.55	-	11.74
A8[1]	-	-	-	-
A9	-	11.42	-	17.24
A10	7.96	11.44	3.48	14.11
A11	-	6.75	-	14.83
A12	6.01	7.18	1.17	13.95
A13	7.52	10.03	2.51	18.85
A14	9.13	11.52	2.39	21.62
A15[1]	-	-	-	-
A16[1]	-	-	-	-
A17[1]	-	-	-	-
A18	9.49	9.83	0.34	19.18
A19[1]	-	-	-	-
A20[1]	-	-	-	-
A21	-	8.80	-	10.33
A23	-	9.28	-	14.84
A24	-	8.15	-	13.04
A25	8.88	8.95	0.07	14.98
AMW1	-	12.11	-	15.38
AMW2[2]	-	-	-	-
AMW3	8.35	11.04	2.69	15.04
AMW4	-	DRY	-	10.19
AMW5	11.44	14.77	3.33	18.15
AMW6[1]	-	-	-	-
AMW7	-	10.38	-	16.49
AMW8	-	12.22	-	16.17
AMW9[1]	-	-	-	-
BMW6[1]	-	-	-	-
BMW-15[1]	-	-	-	-
CT4	-	14.29	-	14.39
HD4A[1]	-	-	-	-
HD5[1]	-	-	-	-
MWA	11.13	11.19	0.06	14.41
MWB	9.55	9.96	0.41	13.05
PZ102D	-	12.88	-	23.88
PZ102S	-	12.93	-	17.81
PZ103D	-	12.65	-	23.87
PZ103S	-	12.43	-	18.75
PZ104D[1]	-	-	-	-
PZ104S	-	8.07	-	18.83
PZ105D	-	9.35	-	26.73
PZ105S	-	8.27	-	19.71

Table 2

LNAPL Thicknesses
Southern Terminal
Lysander, New York
June 6-7, 2019

Monitoring Well ID	Depth to LNAPL (feet bmp)	Depth to Water (feet bmp)	LNAPL Thickness (feet)	Well Total Depth (feet bmp)
S1[2]	-	-	-	-
S2	11.14	11.71	0.57	18.22
S3	-	7.26	-	15.00
S4	-	6.68	-	10.60
S5	5.55	5.56	0.01	14.40
S6[1]	-	-	-	-
S7[1]	-	-	-	-
S8	-	6.20	-	16.63
S9	7.57	9.13	1.56	20.03
S10[1]	-	-	-	-
S11[1]	-	-	-	-
S12[1]	-	-	-	-
S13	8.19	8.66	0.47	15.19
S14[1]	-	-	-	-
S15[1]	-	-	-	-
S16[1]	-	-	-	-
S17[1]	-	-	-	-
S18	-	8.02	-	15.45
S19[1]	-	-	-	-
S20[1]	-	-	-	-
S21[1]	-	-	-	-
S22[2]	-	-	-	-
S23[2]	-	-	-	-
S24[1]	-	-	-	-
S25[1]	-	-	-	-
SMW1[1]	-	-	-	-
SMW2[1]	-	-	-	-
SMW3	-	6.84	-	17.00
SMW4[1]	-	-	-	-
SMW5[1]	-	-	-	-
SMW7[1]	-	-	-	-
SMW8[1]	-	-	-	-
SMW9[1]	-	-	-	-
SMW10[1]	-	-	-	-
SMW12	-	4.84	-	13.55
UNKNOWN 1	-	5.02	-	13.65
UNKNOWN 2	-	3.1	-	12.09
UNKNOWN 3	-	6.56	-	6.63

Notes:

[1]	- Monitoring well not located
[2]	- Monitoring located but not gauged due to damage
LNAPL	- Light non-aqueous phase liquid
ft bmp	- Feet below measuring point
"-"	- No data available
DRY	- Monitoring well dry at time of gauging event

Table 3

Monitoring Well Repair or Replacement Rationale
Southern Terminal
Lysander, New York

Monitoring Well ID	Repair/ Replacement Required	Well Type
A1		
A2		
A3	X	LNAPL[2] to be repaired
A4		
A5		
A6[1]		
A6		
A7		
A8[1]		
A9		
A10		
A11		
A12	X	LNAPL[2] to be repaired
A13	X	Performance Well[3]
A14	X	LNAPL[2] to be repaired
A15[1]		
A16[1]	X	Performance Well[3]
A17[1]	X	LNAPL[2]
A18		
A19[1]	X	LNAPL[2]
A20[1]	X	Performance Well[3]
A21		
A23		
A24		
A25	X	Performance Well[3]
AMW1		
AMW2[1]		
AMW3		
AMW4		
AMW5		
AMW6[1]		
AMW7		
AMW8		
AMW9[1]		
BMW-15[1]		
CT4		
HD4A[1]	X	Performance Well[3]
HD5[1]		
MWA		
MWB		
PZ102D		
PZ102S		
PZ103D		
PZ103S		
PZ104D[1]		
PZ104S		
PZ105D		
PZ105S		

Table 3

Monitoring Well Repair or Replacement Rationale
Southern Terminal
Lysander, New York

Monitoring Well ID	Repair/ Replacement Required	Well Type
S1	X	LNAPL[2]
S2		
S3		
S4		
S5		
S6[1]		
S7[1]		
S8		
S9		
S10[1]	X	Performance Well[3]
S11[1]		
S12[1]	X	Performance Well[3]
S13		
S14[1]	X	LNAPL[2]
S15[1]	X	Performance Well[3]
S16[1]	X	LNAPL[2]
S17[1]	X	LNAPL[2]
S18		
S19[1]	X	LNAPL[2]
S20[1]		
S21[1]	X	Performance Well[3]
S22[1]	X	Performance Well[3]
S23[1]		
S24[1]	X	Performance Well[3]
S25[1]		
SB2[1]		
SMW1[1]		
SMW2[1]		
SMW3	X	Performance Well[3]
SMW4[1]		
SMW5[1]		
SMW7[1]		
SMW8[1]		
SMW9[1]		
SMW10[1]		
SMW12		
UNKNOWN 1		
UNKNOWN 2		
UNKNOWN 3		

Notes:

(1)	- Monitoring well not located
(2)	- Monitoring well historically contained >1 foot of LNAPL
(3)	- Performance well necessary to monitor efficiency of system
LNAPL	- Light non-aqueous phase liquid

Attachment A
Northern Terminal Group
Site Photographs

Photo 1 - View of Northern Terminal PZ106S

Photo 2 - View of Northern Terminal BMW9

Site Photographs

Photo 3 - View of Northern Terminal MW211

Photo 4 View of Northern Terminal MW210

Site Photographs

Photo 5 - View of Northern Terminal BMW2

Photo 6 - View of Northern Terminal MW207

Photo 7 - View of Northern Terminal MW208

Photo 8 - View of Northern Terminal MW209

Site Photographs

Photo 9 - View of Northern Terminal MW206

Photo 10 - View of Northern Terminal MW205

Photo 11 - View of Northern Terminal MW204

Photo 12 - View of Northern Terminal MW203

Photo 13 - View of Northern Terminal BMW3

Photo 14 - View of Northern Terminal BMW6

Photo 15 - View of Northern Terminal MW202

Photo 16 - View of Northern Terminal MW201

Photo 17 - View of Northern Terminal BMW7

Photo 18 - View of Northern Terminal BMW8

Photo 19 - View of Northern Terminal BMW5

Photo 20 - View of Northern Terminal BMW13

Photo 21 - View of Northern Terminal BMW14R

Photo 22 - View of Northern Terminal HD1

Photo 23 - View of Northern Terminal BMW4

Photo 24 - View of Northern Terminal HD8

Photo 25 - View of Northern Terminal HD7

Photo 26 - View of Northern Terminal HD6

Photo 27 - View of Northern Terminal HD3A

Photo 28 - View of Northern Terminal SMW11

Photo 29 - View of Northern Terminal BMW12

Photo 30 - View of Northern Terminal CT20

Photo 31 - View of Northern Terminal CT19

Photo 32 - View of Northern Terminal GWE-PTW

Photo 33 - View of Northern Terminal B4

Photo 34 - View of Northern Terminal B3

Photo 35 - View of Northern Terminal B6

Photo 36 - View of Northern Terminal CT4

Photo 37 - View of Northern Terminal CT4, close-up of broken casing

Photo 38 - View of Northern Terminal B8

Photo 39 - View of Northern Terminal B5

Photo 40 - View of Northern Terminal B10

Photo 41 - View of Northern Terminal B7

Photo 42 - View of Northern Terminal B9

Photo 43 - View of Northern Terminal B12

Photo 44 - View of Northern Terminal B14

Photo 45 - View of Northern Terminal B11

Photo 46 - View of Northern Terminal B13

Photo 47 - View of Northern Terminal B15

Photo 48 - View of Northern Terminal B16

Photo 49 - View of Northern Terminal B18

Photo 50 - View of Northern Terminal unknown well near southeastern corner of property

Photo 51 - View of Northern Terminal site in vicinity of MW209

Photo 52 - View of Northern Terminal site in vicinity of MW206

Photo 53 - View of Northern Terminal site north of MW203

Photo 54 - View of Northern Terminal site east of BMW8

Attachment B
Southern Terminal Group
Site Photographs

Photo 1 - View of PZ101S (left) and PZ101D (right)

Photo 2 - View of PZ102S (left) and PZ102D (right)

Site Photographs

Photo 3 - View of PZ103D (left) and PZ103S (right)

Photo 4 - View of AMW4

Photo 5 - View of AMW4 interior

Photo 6 - View of AMW8 prior to digging out stone

Photo 7 - View of AMW8 after digging out stone

Photo 8 - View of AMW1

Site Photographs

Photo 9 - View of AMW2

Photo 10 - View of AMW7

Photo 11 - View of A23

Photo 12 - View of MWA

Photo 13 - View of MWB

Photo 14 - View of S22

Photo 15 - View of SMW3

Photo 16 - View of SMW12

Photo 17 - View of AMW5

Photo 18 - View of A21

Photo 19 - View of A1

Photo 20 - View of A1, showing ponded water

Photo 21 - View of A2

Photo 22 - View of A6

Photo 23 - View of A3 prior to digging out stone

Photo 24 - View of A3 after digging out stone

Photo 25 - View of A7

Photo 26 - View of A4

Photo 27 - View of A5 after digging out stone

Photo 28 - View of A9

Photo 29 - View of S1 after digging out stone, well no longer present

Photo 30 - View of S5

Photo 31 - View of S13

Photo 32 - View of PZ105D (left) and PZ105S (right)

Photo 33 - View of S18

Photo 34 - View of A18

Photo 35 - View of A14

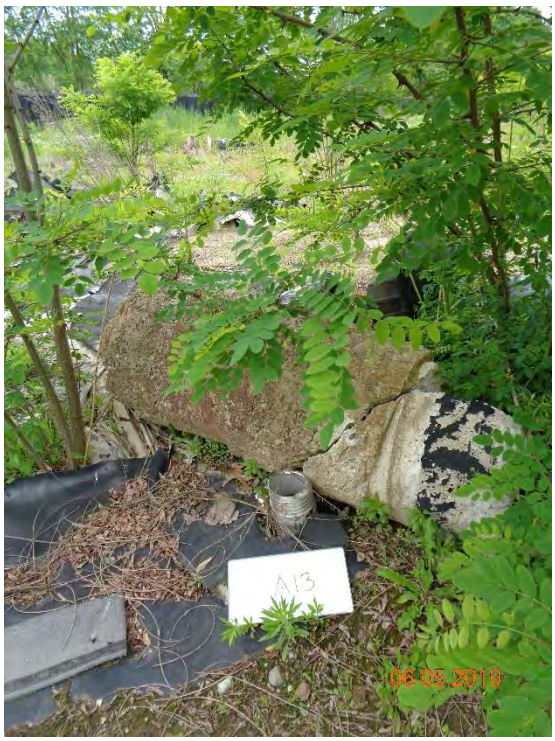

Photo 36 - View of A13

Photo 37 - View of A25

Photo 38 - View of A24

Photo 39 - View of A10

Photo 40 - View of A11

Photo 41 - View of A12

Photo 42 - View of S2

Photo 43 - View of S3 after digging out stone

Photo 44 - View of S4

Photo 45 - View of S8

Photo 46 - View of S23

Photo 47 - View of S23, close-up of crushed casing

Photo 48 - View of AMW3

Photo 49 - View of PZ104S (foreground) and PZ104D (dislodged cover in background, could not locate well)

Photo 50 - View of Unknown 1

Photo 51 - View of SG1 (background) and SG2 (foreground)

Photo 52 - View of unknown 4-inch diameter well east of central dispenser

Photo 53 - View of site south of containment area in vicinity of AMW5 and A21

Photo 54 - View of site east of SMW3

Photo 55 - View of river adjacent to site south of SMW3

Photo 56 - View of former Tank 7 area

Photo 57 - View of southeastern terminal containment area looking southwest

Photo 58 - View of southwestern terminal containment area looking west from eastern edge

Photo 59 - View of drums located in northeastern corner of southwestern terminal containment area

Photo 60 - View of western end of southwestern terminal containment area

Photo 61 - View of drums and various materials located in storage trailer near western edge of site

Photo 62 - View of S5 prior to extending and backfilling manhole

Photo 63 - View of S5 after extending and prior to backfilling manhole

Photo 64 - View of S5 after backfilling manhole with stone

Photo 65 - View of S18 prior to extending and backfilling manhole

Photo 66 - View of S18 after extending and prior to backfilling manhole

Photo 67 - View of S18 after backfilling manhole with stone

Photo 68 - View of S3 after extending and prior to refilling manhole

Photo 69 - View of S3 after refilling manhole with stone

Photo 70 - View of A5 prior to extending and refilling manhole

Photo 71 - View of A5 after extending and prior to refilling manhole

Photo 72 - View of A5 after refilling manhole with stone

Photo 73 - View of A3 prior to extending and refilling manhole

Photo 74 - View of A3 after extending and prior to refilling manhole

Photo 75 - View of A3 after refilling manhole with stone

Photo 76 - View of AMW8 prior to extending and backfilling

Photo 77 - View of AMW8 after extending and prior to backfilling (note slip cap piece removed from well casing prior to extending)

Photo 78 - View of AMW8 after backfilling with stone

Photo 79 - View of AMW1 after cutting down broken PVC casing

Photo 80 - View of AMW1 after placing salvaged cover from dislodged casing of PZ104D