Department of Environmental Conservation

DNAPL RECOVERY LETTER REPORT

WORK ASSIGNMENT D007622-30

FORMER SPIC AND SPAN CLEANERS & DYERS, INC. SITE
GREENPOINT/EAST WILLIAMSBURG INDUSTRIAL AREA

SITE NO. 224129
KINGS (C), NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

Basil Seggos, Acting Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION
REMEDIAL BUREAU B

URS Corporation
257 West Genesee Street, Suite 400
Buffalo, New York 14202-2657

G4771A

February 2016

URS

February 18, 2016

Mr. David Harrington, P.E., Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, 12th Floor
Albany, NY 12233-7016

RE: Contract D007622, Work Assignment No. 30
Former Spic and Span Cleaners & Dyers, Inc. Site No. 224129, Brooklyn, New York
DNAPL Recovery Status Letter Report

Dear Mr. Harrington:

URS Corporation – New York (URS) has prepared this letter updating on the status of DNAPL removal activities at the former Spic and Span Cleaners & Dyers, Inc. site, located at 315 Kingsland Avenue (Figure 1). DNAPL removal activities began on September 14, 2015, and continued through October 30, 2015 (Table 1). DNAPL removal was performed at wells DEC-136, DEC-136D, DEC-092D, EW-01, EW-02, DEC-024, DEC-024D, and DEC-024DR (Figure 2). At the end of October 2015, DNAPL removal was temporarily suspended due to only trace quantities of DNAPL accumulation and recovery during the latter part of October 2015. The temporary hiatus should allow the formation to re-equilibrate.

DNAPL Removal

DNAPL removal at DEC-136 was performed using a Waterra Inertial Hydrolift pump with dedicated/disposable HDPE tubing and check valves. At DEC-136D, DEC-092D, EW-01, EW-02, DEC-024, DEC-024D, and DEC-024DR, DNAPL removal was performed using dedicated/disposable, 36 inch long 1-liter HDPE bailers. In total 267.50 gallons (3,357.44 lbs) of DNAPL was removed at the site through October 30, 2015 (Table 2). The majority of DNAPL was removed from one well, DEC-136. Attachment I provides DNAPL product recovery summaries for each well and Attachment II provides the well construction logs. A photographic log is provided as Attachment III.

Well Redevelopment/Surging

Well redevelopment took place at wells DEC-024, DEC-024D, DEC-024DR, DEC-092D and EW-02. Redevelopment was performed using a Waterra Inertial Hydrolift pump with dedicated/ disposable HDPE tubing and check valves to induce a hydraulic gradient to the wells and promote DNAPL accumulation. The purge water removed from all wells had visible sheens, with occasional blebs of product, and also exhibited concentrated levels of dissolved phase chlorinated volatile organic compounds (CVOCs) as evidenced by high photoionization detector (PID) readings. Total groundwater purge volumes were: 165 gallons was removed from DEC-024 over three days; 110

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gallons was removed from DEC-024D on a single day; 105 gallons was removed from DEC-024DR on a single day; 110 gallons was removed from DEC-092D over two days; and 110 gallons was removed from EW-02 on a single day.

Air Monitoring

Throughout DNAPL removal activities, air monitoring was performed using a combination of PID readings, as well as substance-specific monitoring using a Dräger Chip Measurement System (CMS). CMS chips employed included Vinyl Chloride, Tetrachloroethene, Trichloroethene, and Benzene. At no point during DNAPL removal did concentrations of these four substances exceed Occupational Health Safety Administration (OSHA) permissible exposure limits (PELs) or short-term exposure limits (STELs). Additionally, breathing zone and downwind PID measurements ranged from background to 2.3 ppm and were within community air monitoring requirements at all times per the Health and Safety Plan.

Recommendations

DNAPL monitoring and removal activities (if DNAPL is present) should resume in February 2016. If DNAPL remains at only trace quantities, DNAPL monitoring should be conducted at monthly intervals. One or two additional shallow DNAPL extraction wells should be installed in the area north of DEC-136 and constructed similarly to target the DNAPL-contaminated upper sand layer observed during drilling at other nearby soil borings as part of the remedial investigation and pilot study. The new wells should be included in DNAPL monitoring and removal activities.

We appreciate working with the Department on this challenging project.

Sincerely,

URS Corporation

Michael Gutmann
Project Manager

Enc. Figure 1 – Site Location
Figure 2 – Monitoring Well and Soil Boring Locations
Table 1 – Daily Summary of DNAPL Recovery at Well Location
Table 2 – Combined Summary of DNAPL Observations/DNAPL Recovery
Attachment I – DNAPL Product Recovery Summaries
Attachment II – Well Construction Logs
Attachment III – Photographic Log

cc: George Kisluk, URS Buffalo, NY

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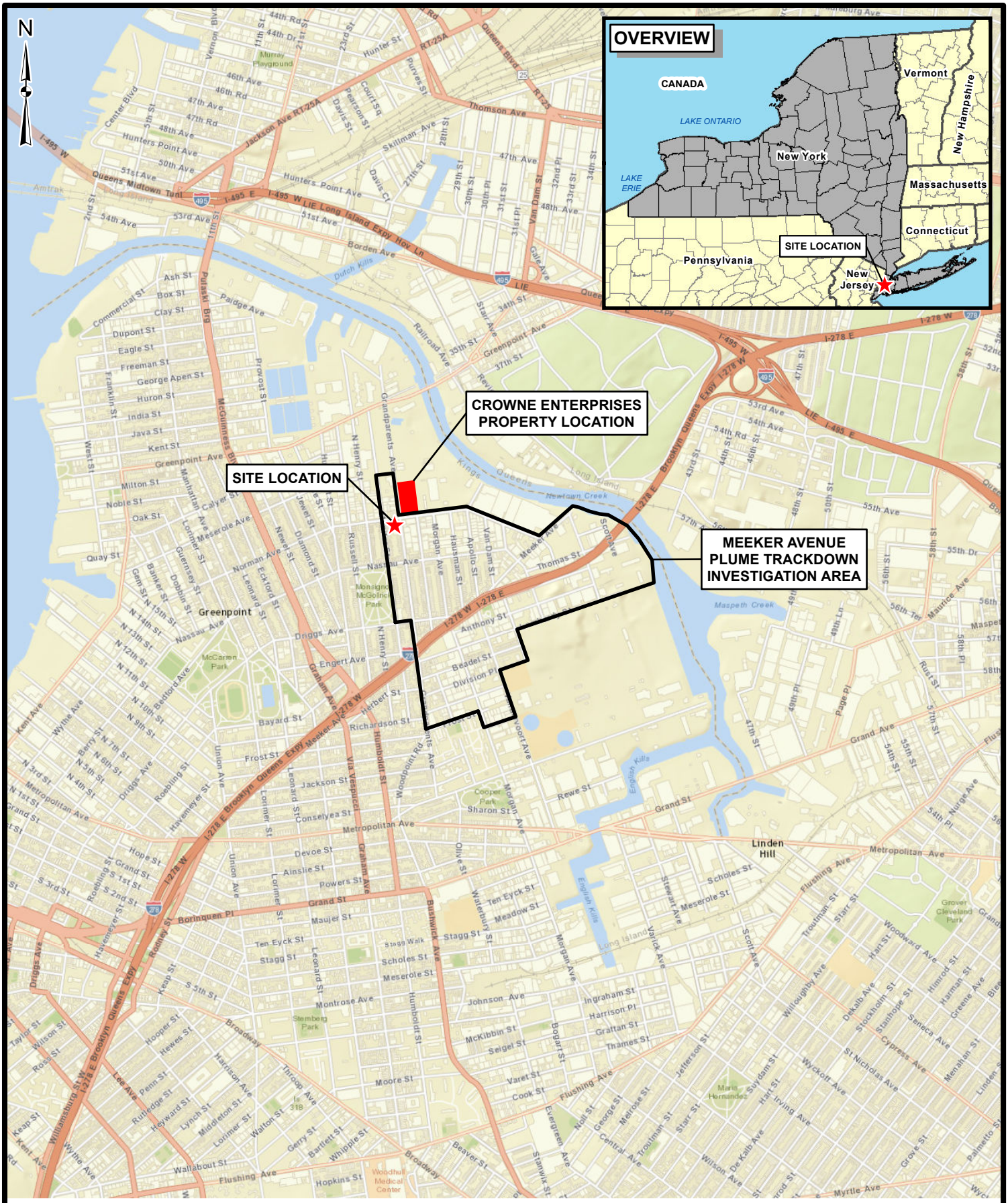
FIGURES



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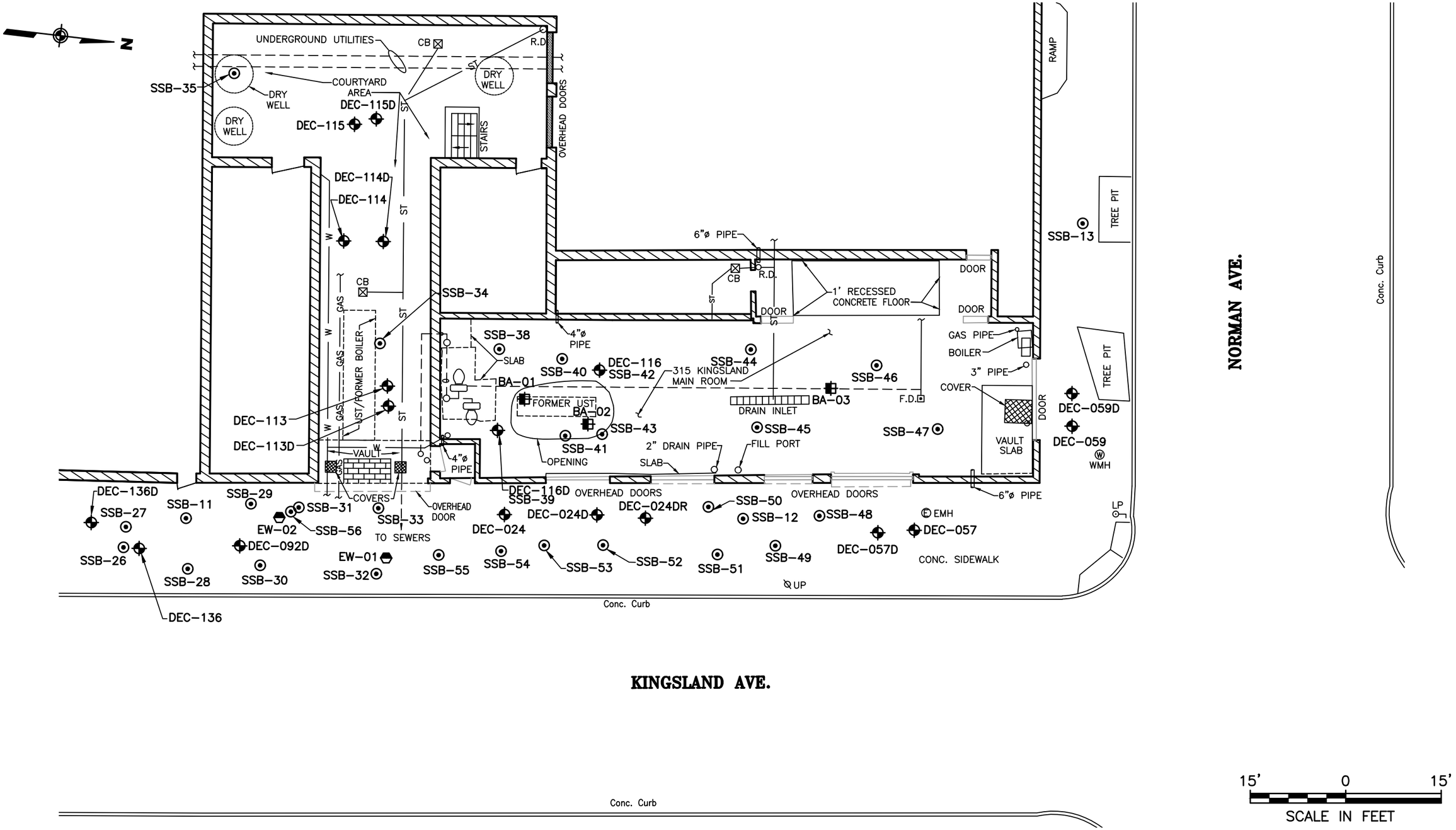
FORMER SPIC & SPAN CLEANERS SITE
SITE LOCATION

FIGURE 1



LEGEND:

CB	CATCH BASIN	GAS	NATURAL GAS LINE
R.D.	ROOF DRAIN	W	WATER LINE
F.D.	FLOOR DRAIN	ST	STORM SEWER
UST	UNDERGROUND STORAGE TANK		UNKNOWN UNDERGROUND UTILITIES

SSB-40	SOIL BORING
DEC-116	NYSDEC MONITORING WELL
EW-01	NYSDEC EXTRACTION WELL
BA-01	BUCKET AUGER

FORMER SPIC AND SPAN CLEANERS SITE
MONITORING WELL AND SOIL BORING LOCATIONS

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FIGURE 2

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TABLES

TABLE 1

DAILY SUMARY OF DNAPL RECOVERY AT WELL LOCATION

FORMER SPIC AND SPAN CLEANERS AND DYERS SITE

Date	DEC-136	DEC-136D	DEC-092D	EW-01	EW-02	DEC-024	DEC-024D	DEC-024DR
2/4/2015	0.35	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2/5/2015	45.42	n/a	n/a	4.03	n/a	n/a	n/a	n/a
2/6/2015	34.07	n/a	n/a	n/a	18.93	n/a	n/a	n/a
6/4/2014	n/a	n/a	0.24	n/a	n/a	n/a	0.42	0.61
6/9/2014	n/a	n/a	0.29	n/a	n/a	n/a	0.85	1.00
6/11/2014	n/a	n/a	0.40	n/a	n/a	n/a	0.42	1.35
2/5/2015	n/a	n/a	0.03	n/a	n/a	n/a	0.03	0.50
2/6/2015	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3/23/2015	102.21	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3/24/2015	90.85	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3/25/2015	94.64	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3/26/2015	140.06	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3/27/2015	85.17	n/a	n/a	n/a	n/a	n/a	n/a	n/a
9/14/2015	trace	0.33	n/a	trace	trace	n/a	n/a	0.14
9/15/2015	39.75	trace	0.33	trace	n/a	n/a	0.08	0.33
9/16/2015	82.33	0.83	0.89	trace	n/a	n/a	trace	1.00
9/17/2015	51.10	0.17	0.29	0.17	trace	n/a	trace	0.11
9/18/2015	14.20	0.14	trace	0.19	trace	n/a	trace	0.11
9/22/2015	54.89	trace	trace	0.69	trace	n/a	n/a	n/a
9/23/2015	34.07	trace	0.11	trace	trace	n/a	0.50	1.22
9/24/2015	34.07	0.11	0.50	trace	0.17	trace	trace	trace
9/25/2015	11.36	trace	trace	0.28	trace	trace	trace	trace
9/28/2015	n/a	trace	trace	trace	trace	trace	trace	n/a
9/29/2015	12.30	trace	trace	trace	trace	0.17	trace	trace
9/30/2015	15.14	trace	trace	trace	trace	0.61	0.17	0.25
10/1/2015	1.32	trace	trace	trace	trace	trace	0.22	trace
10/2/2015	trace	trace	trace	trace	trace	trace	trace	trace
10/5/2015	n/a	trace	trace	trace	trace	trace	trace	trace
10/6/2015	11.36	trace	trace	trace	trace	trace	trace	trace
10/7/2015	1.89	trace	0.17	trace	trace	0.22	trace	trace
10/8/2015	0.00	trace	0.11	trace	trace	trace	trace	trace
10/9/2015	0.00	trace	trace	trace	trace	trace	trace	trace
10/12/2015	0.00	trace	trace	trace	trace	trace	trace	trace
10/13/2015	7.57	trace	trace	trace	trace	trace	trace	trace
10/14/2015	6.62	trace	trace	trace	trace	trace	trace	trace
10/15/2015	2.08	trace	trace	trace	trace	trace	trace	trace
10/16/2015	trace	trace	trace	trace	trace	trace	trace	trace
10/27/2015	trace	trace	trace	trace	trace	trace	trace	trace
10/28/2015	trace	0.03	trace	trace	trace	trace	0.03	trace
10/29/2015	trace	trace	trace	trace	trace	trace	trace	trace
10/30/2015	trace	trace	trace	trace	trace	trace	trace	trace
Total DNAPL Recovery (L)	**972.82**	**1.61**	**3.36**	**5.36**	**19.10**	**1.00**	**2.72**	**6.63**

TABLE 2
COMBINED SUMMARY OF DNAPL OBSERVATIONS/DNAPL RECOVERY
FORMER SPIC AND SPAN CLEANERS AND DYERS SITE

Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
DEC-024	17 to 32	9/24/2015	trace	trace	trace	0
		9/25/2015	trace	0.00	trace	0
		9/28/2015	trace	0.00	trace	0
		9/29/2015	0.17	0.17	6	6
		9/30/2015	0.61	0.78	22	28
		10/1/2015	trace	0.78	trace	28
		10/2/2015	trace	0.78	trace	28
		10/5/2015	trace	0.78	trace	28
		10/6/2015	trace	0.78	trace	28
		10/7/2015	0.22	1.00	8	36
		10/8/2015	trace	1.00	trace	36
		10/9/2015	trace	1.00	trace	36
		10/12/2015	trace	1.00	trace	36
		10/13/2015	trace	1.00	trace	36
		10/14/2015	trace	1.00	trace	36
		10/15/2015	trace	1.00	trace	36
		10/16/2015	trace	1.00	trace	36
		10/27/2015	trace	1.00	trace	36
		10/28/2015	trace	1.00	trace	36
		10/29/2015	trace	1.00	trace	36
		10/30/2015	trace	1.00	trace	36

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Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
DEC-024D	44 to 54	6/4/2014	0.42	0.42	15	15
		6/9/2014	0.85	1.27	30.5	45.5
		6/11/2014	0.42	1.69	15.25	60.75
		2/5/2015	0.03	1.72	Trace	60.75
		9/15/2015	0.08	1.80	3	63.75
		9/16/2015	trace	1.80	trace	63.75
		9/17/2015	trace	1.80	trace	63.75
		9/18/2015	trace	1.80	trace	63.75
		9/23/2015	0.50	2.30	18	81.75
		9/24/2015	trace	2.30	trace	81.75
		9/25/2015	trace	2.30	trace	81.75
		9/28/2015	trace	2.30	trace	81.75
		9/29/2015	trace	2.30	trace	81.75
		9/30/2015	0.17	2.47	6	87.75
		10/1/2015	0.22	2.69	8	95.75
		10/2/2015	trace	2.69	trace	95.75
		10/5/2015	trace	2.69	trace	95.75
		10/6/2015	trace	2.69	trace	95.75
		10/7/2015	trace	2.69	trace	95.75
		10/8/2015	trace	2.69	trace	95.75
		10/9/2015	trace	2.69	trace	95.75
		10/12/2015	trace	2.69	trace	95.75
		10/13/2015	trace	2.69	trace	95.75
		10/14/2015	trace	2.69	trace	95.75
		10/15/2015	trace	2.69	trace	95.75
		10/16/2015	trace	2.69	trace	95.75
		10/27/2015	trace	2.69	trace	95.75
		10/28/2015	0.03	2.72	1	96.75
		10/29/2015	trace	2.72	trace	96.75
		10/30/2015	trace	2.72	trace	96.75

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Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
DEC-024DR	43 to 53	6/4/2014	0.61	0.61	22	22
		6/9/2014	1.00	1.61	36	58.00
		6/11/2014	1.35	2.96	48.25	106.25
		2/5/2015	0.50	3.46	18	124.25
		9/14/2015	0.14	3.60	5	129.25
		9/15/2015	0.33	3.93	12	141.25
		9/16/2015	1.00	4.93	36	177.25
		9/17/2015	0.11	5.04	4	181.25
		9/18/2015	0.11	5.15	4	185.25
		9/23/2015	1.22	6.38	44	229.25
		9/24/2015	trace	6.38	trace	229.25
		9/25/2015	trace	6.38	trace	229.25
		9/29/2015	trace	6.38	trace	229.25
		9/30/2015	0.25	6.63	9	238.25
		10/1/2015	trace	6.63	trace	238.25
		10/2/2015	trace	6.63	trace	238.25
		10/5/2015	trace	6.63	trace	238.25
		10/6/2015	trace	6.63	trace	238.25
		10/7/2015	trace	6.63	trace	238.25
		10/8/2015	trace	6.63	trace	238.25
		10/9/2015	trace	6.63	trace	238.25
		10/12/2015	trace	6.63	trace	238.25
		10/13/2015	trace	6.63	trace	238.25
		10/14/2015	trace	6.63	trace	238.25
		10/15/2015	trace	6.63	trace	238.25
		10/16/2015	trace	6.63	trace	238.25
		10/27/2015	trace	6.63	trace	238.25
		10/28/2015	trace	6.63	trace	238.25
		10/29/2015	trace	6.63	trace	238.25
		10/30/2015	trace	6.63	trace	238.25

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Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
DEC-092D	48 to 58	6/4/2014	0.24	0.24	8.5	8.5
		6/9/2014	0.29	0.53	10.5	19.00
		6/11/2014	0.40	0.93	14.5	33.50
		2/5/2015	0.03	0.96	Trace	33.50
		9/15/2015	0.33	1.29	12	45.50
		9/16/2015	0.89	2.18	32	77.50
		9/17/2015	0.29	2.47	10.5	88.00
		9/18/2015	trace	2.47	trace	88.00
		9/22/2015	trace	2.47	trace	88.00
		9/23/2015	0.11	2.59	4	92.00
		9/24/2015	0.50	3.09	18	110.00
		9/25/2015	trace	3.09	trace	110.00
		9/28/2015	trace	3.09	trace	110.00
		9/29/2015	trace	3.09	trace	110.00
		9/30/2015	trace	3.09	trace	110.00
		10/1/2015	trace	3.09	trace	110.00
		10/2/2015	trace	3.09	trace	110.00
		10/5/2015	trace	3.09	trace	110.00
		10/6/2015	trace	3.09	trace	110.00
		10/7/2015	0.17	3.25	6	116.00
		10/8/2015	0.11	3.36	4	120.00
		10/9/2015	trace	3.36	trace	120.00
		10/12/2015	trace	3.36	trace	120.00
		10/13/2015	trace	3.36	trace	120.00
		10/14/2015	trace	3.36	trace	120.00
		10/15/2015	trace	3.36	trace	120.00
		10/16/2015	trace	3.36	trace	120.00
		10/27/2015	trace	3.36	trace	120.00
		10/28/2015	trace	3.36	trace	120.00
		10/29/2015	trace	3.36	trace	120.00
		10/30/2015	trace	3.36	trace	120.00

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FORMER SPIC AND SPAN CLEANERS AND DYERS SITE

Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
DEC-136	12.5 to 27.5	2/4/2015	0.35	0.35	--	--
		2/5/2015	45.42	45.77	--	--
		2/6/2015	34.07	79.84	--	--
		3/23/2015	102.21	182.05	--	--
		3/24/2015	90.85	272.90	--	--
		3/25/2015	94.64	367.54	--	--
		3/26/2015	140.06	507.60	--	--
		3/27/2015	85.17	592.77	--	--
		9/14/2015	trace	592.77	--	--
		9/15/2015	39.75	632.52	--	--
		9/16/2015	82.33	714.85	--	--
		9/17/2015	51.10	765.95	--	--
		9/18/2015	14.20	780.15	--	--
		9/22/2015	54.89	835.04	--	--
		9/23/2015	34.07	869.11	--	--
		9/24/2015	34.07	903.18	--	--
		9/25/2015	11.36	914.54	--	--
		9/29/2015	12.30	926.84	--	--
		9/30/2015	15.14	941.98	--	--
		10/1/2015	1.32	943.30	--	--
		10/2/2015	trace	943.30	--	--
		10/6/2015	11.36	954.66	--	--
		10/7/2015	1.89	956.55	--	--
		10/8/2015	0.00	956.55	--	--
		10/9/2015	0.00	956.55	--	--
		10/12/2015	0.00	956.55	--	--
		10/13/2015	7.57	964.12	--	--
		10/14/2015	6.62	970.74	--	--
		10/15/2015	2.08	972.82	--	--
		10/16/2015	trace	972.82	--	--
		10/27/2015	trace	972.82	--	--
		10/28/2015	trace	972.82	--	--
		10/29/2015	trace	972.82	--	--
		10/30/2015	trace	972.82	--	--

TABLE 2
COMBINED SUMMARY OF DNAPL OBSERVATIONS/DNAPL RECOVERY
FORMER SPIC AND SPAN CLEANERS AND DYERS SITE

Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
DEC-136D	43 to 53	9/14/2015	0.33	0.33	--	--
		9/15/2015	trace	0.33	--	--
		9/16/2015	0.83	1.17	--	--
		9/17/2015	0.17	1.33	--	--
		9/18/2015	0.14	1.47	--	--
		9/22/2015	trace	1.47	--	--
		9/23/2015	trace	1.47	--	--
		9/24/2015	0.11	1.58	--	--
		9/25/2015	trace	1.58	--	--
		9/28/2015	trace	1.58	--	--
		9/29/2015	trace	1.58	--	--
		9/30/2015	trace	1.58	--	--
		10/1/2015	trace	1.58	--	--
		10/2/2015	trace	1.58	--	--
		10/5/2015	trace	1.58	--	--
		10/6/2015	trace	1.58	--	--
		10/7/2015	trace	1.58	--	--
		10/8/2015	trace	1.58	--	--
		10/9/2015	trace	1.58	--	--
		10/12/2015	trace	1.58	--	--
		10/13/2015	trace	1.58	--	--
		10/14/2015	trace	1.58	--	--
		10/15/2015	trace	1.58	--	--
		10/16/2015	trace	1.58	--	--
		10/27/2015	trace	1.58	--	--
		10/28/2015	0.03	1.61	--	--
		10/29/2015	trace	1.61	--	--
		10/30/2015	trace	1.61	--	--

TABLE 2
COMBINED SUMMARY OF DNAPL OBSERVATIONS/DNAPL RECOVERY
FORMER SPIC AND SPAN CLEANERS AND DYERS SITE

Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
EW-01	40 to 55	2/5/2015	4.03	4.03	--	--
		9/14/2015	trace	4.03	trace	0.00
		9/15/2015	trace	4.03	trace	0.00
		9/16/2015	trace	4.03	trace	0.00
		9/17/2015	0.17	4.20	6	6.00
		9/18/2015	0.19	4.39	7	13.00
		9/22/2015	0.69	5.09	25	38.00
		9/23/2015	trace	5.09	trace	38.00
		9/24/2015	trace	5.09	trace	38.00
		9/25/2015	0.28	5.36	10	48.00
		9/28/2015	trace	5.36	trace	48.00
		9/29/2015	trace	5.36	trace	48.00
		9/30/2015	trace	5.36	trace	48.00
		10/1/2015	trace	5.36	trace	48.00
		10/2/2015	trace	5.36	trace	48.00
		10/5/2015	trace	5.36	trace	48.00
		10/6/2015	trace	5.36	trace	48.00
		10/7/2015	trace	5.36	trace	48.00
		10/8/2015	trace	5.36	trace	48.00
		10/9/2015	trace	5.36	trace	48.00
		10/12/2015	trace	5.36	trace	48.00
		10/13/2015	trace	5.36	trace	48.00
		10/14/2015	trace	5.36	trace	48.00
		10/15/2015	trace	5.36	trace	48.00
		10/16/2015	trace	5.36	trace	48.00
		10/27/2015	trace	5.36	trace	48.00
		10/28/2015	trace	5.36	trace	48.00
		10/29/2015	trace	5.36	trace	48.00
		10/30/2015	trace	5.36	trace	48

TABLE 2
COMBINED SUMMARY OF DNAPL OBSERVATIONS/DNAPL RECOVERY
FORMER SPIC AND SPAN CLEANERS AND DYERS SITE

Well ID	Screen Interval (ft bgs)	Date Checked	DNAPL Observation/ Recovery (L)	Total DNAPL Recovered to Date (L)	Total DNAPL Recovered in Bailer (in.)*	Total DNAPL Recovered to Date (in.)*
EW-02	43.5 to 58.5	2/6/2015	18.93	18.93	--	--
		9/14/2015	trace	18.93	trace	0.00
		9/17/2015	trace	18.93	trace	0.00
		9/18/2015	trace	18.93	trace	0.00
		9/22/2015	trace	18.93	trace	0.00
		9/23/2015	trace	18.93	trace	0.00
		9/24/2015	0.17	19.10	6	6.00
		9/25/2015	trace	19.10	trace	6.00
		9/28/2015	trace	19.10	trace	6.00
		9/29/2015	trace	19.10	trace	6.00
		9/30/2015	trace	19.10	trace	6.00
		10/1/2015	trace	19.10	trace	6.00
		10/2/2015	trace	19.10	trace	6.00
		10/5/2015	trace	19.10	trace	6.00
		10/6/2015	trace	19.10	trace	6.00
		10/7/2015	trace	19.10	trace	6.00
		10/8/2015	trace	19.10	trace	6.00
		10/9/2015	trace	19.10	trace	6.00
		10/12/2015	trace	19.10	trace	6.00
		10/13/2015	trace	19.10	trace	6.00
		10/14/2015	trace	19.10	trace	6.00
		10/15/2015	trace	19.10	trace	6.00
		10/16/2015	trace	19.10	trace	6.00
		10/27/2015	trace	19.10	trace	6.00
		10/28/2015	trace	19.10	trace	6.00
		10/29/2015	trace	19.10	trace	6.00
		10/30/2015	trace	19.10	trace	6.00

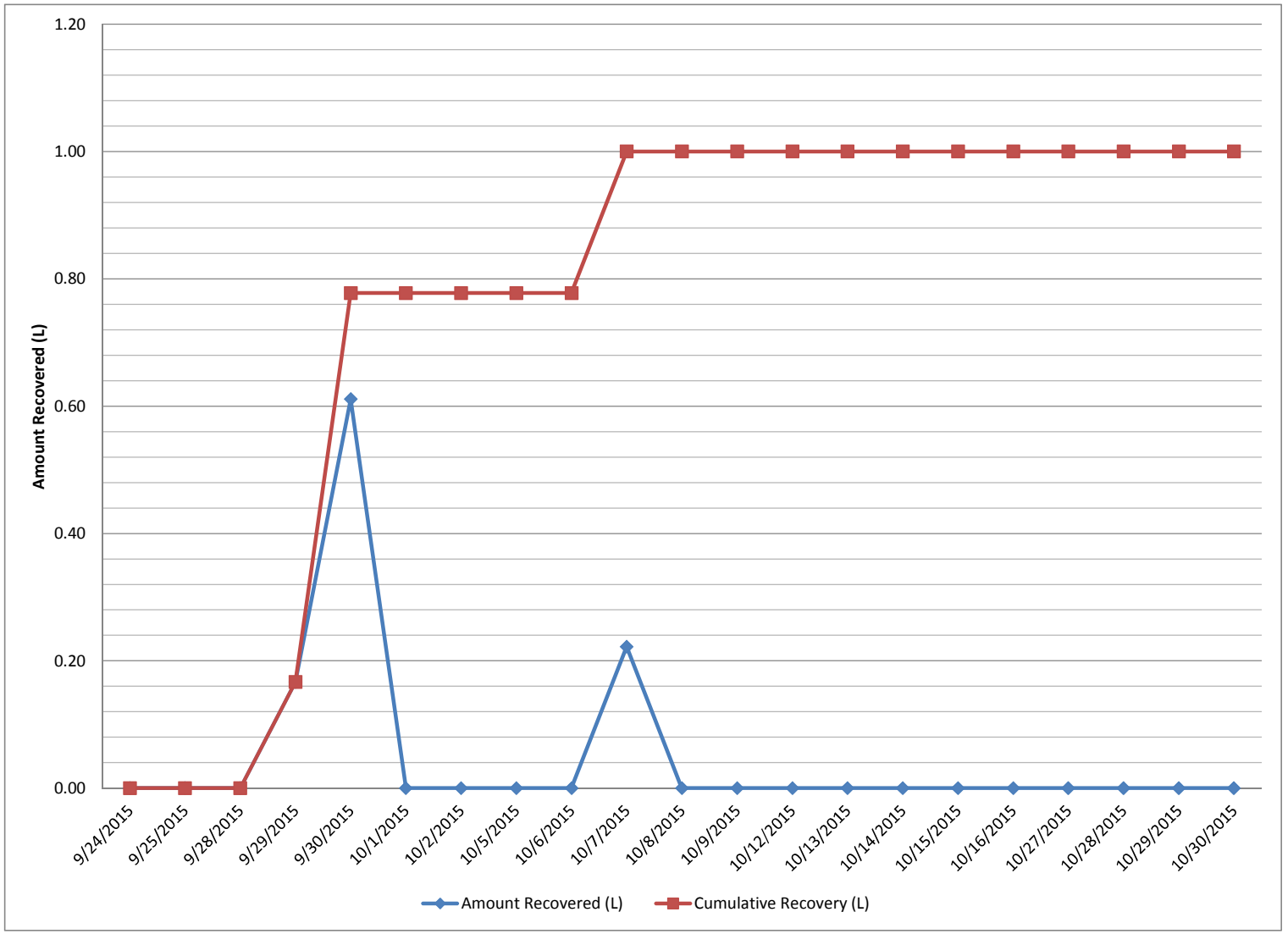
Total DNAPL Recovered to Date (L)	**1012.60**		
Total DNAPL Recovered to Date (Gals)	**267.50**	**DNAPL Mass Recovered to Date (Lbs)**	**3357.44**

* - DNAPL in DEC-024D, DEC-024DR, and DEC-092D was collected using a dedicated HDPE bailer.
DNAPL in DEC-136, EW-01, and EW-02 was collected using a hydrolift pump.
ft bgs - feet below ground surface
L - liters
in. - inches

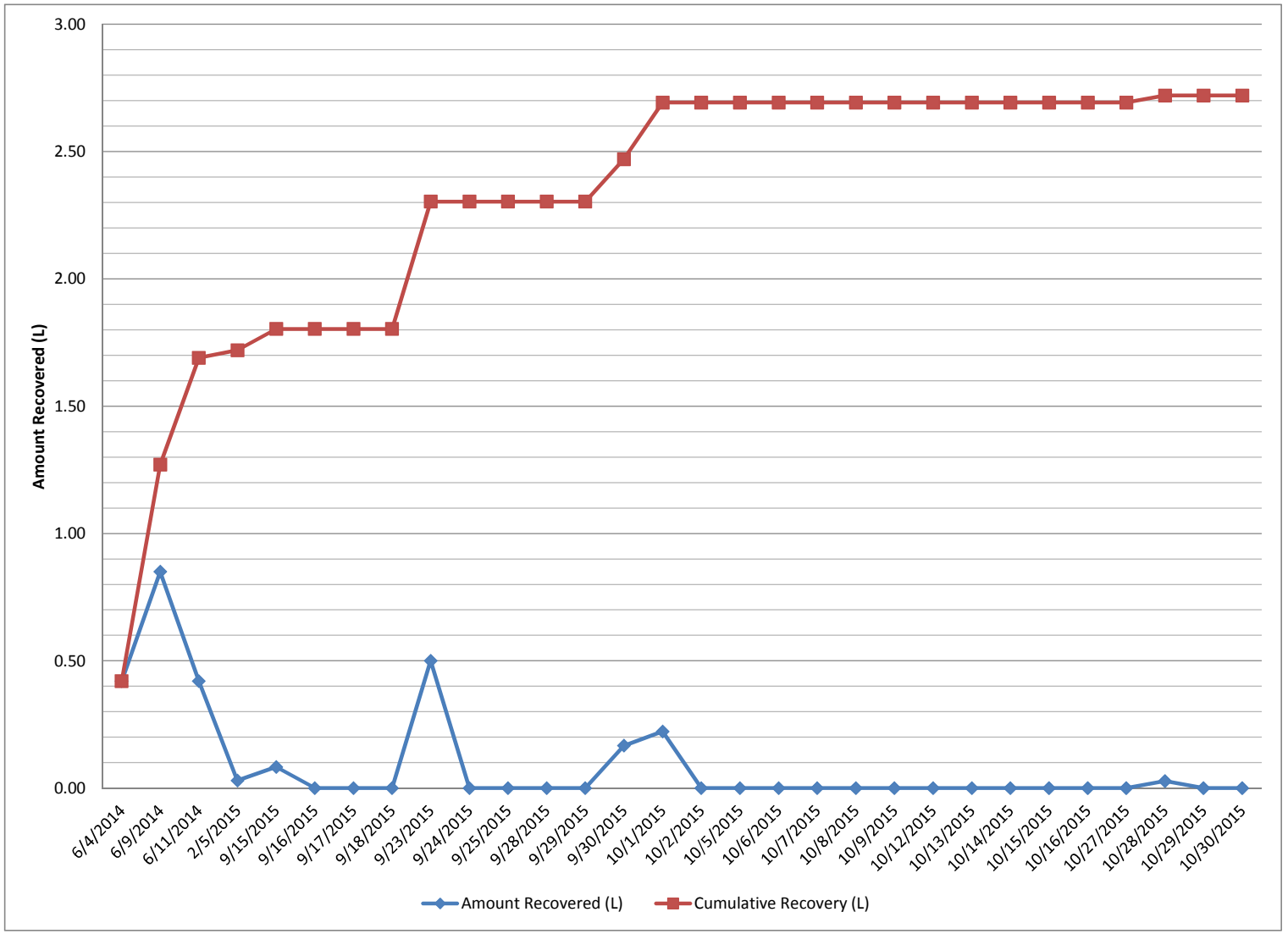
ATTACHMENT I

DNAPL PRODUCT RECOVERY SUMMARIES

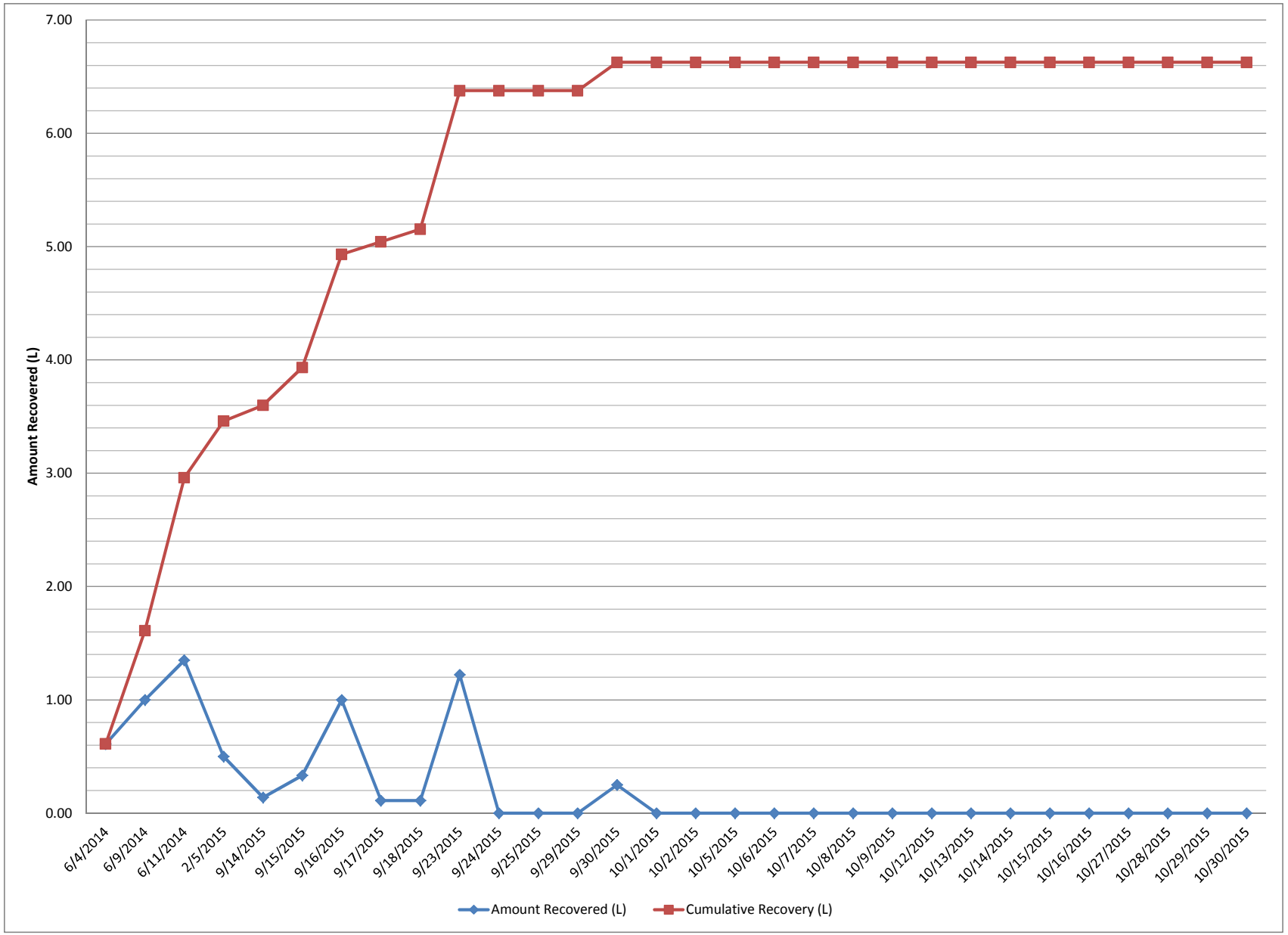
SUMMARY OF DNAPL PRODUCT RECOVERY IN DEC-024
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



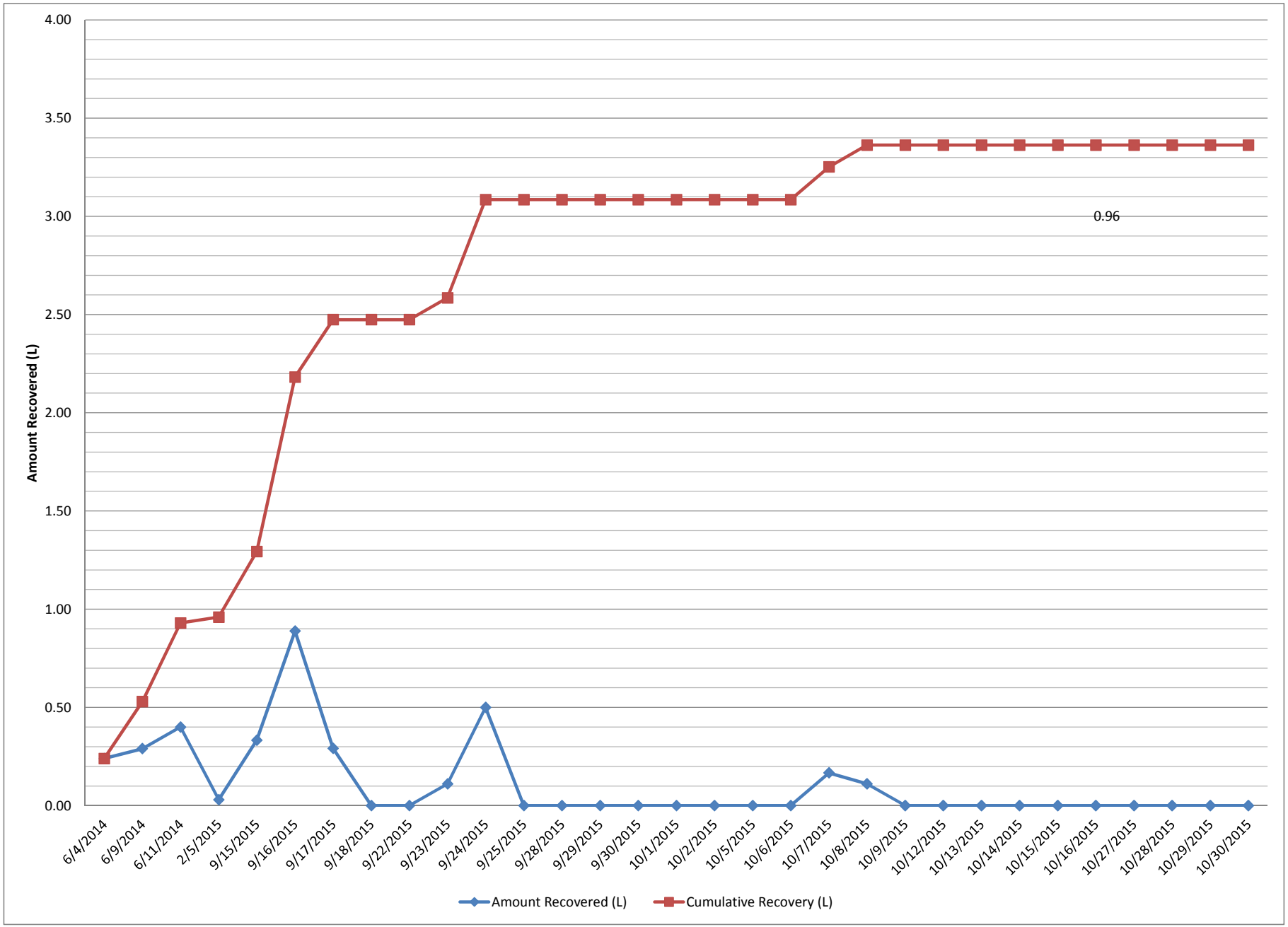
SUMMARY OF DNAPL PRODUCT RECOVERY IN DEC-024D
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



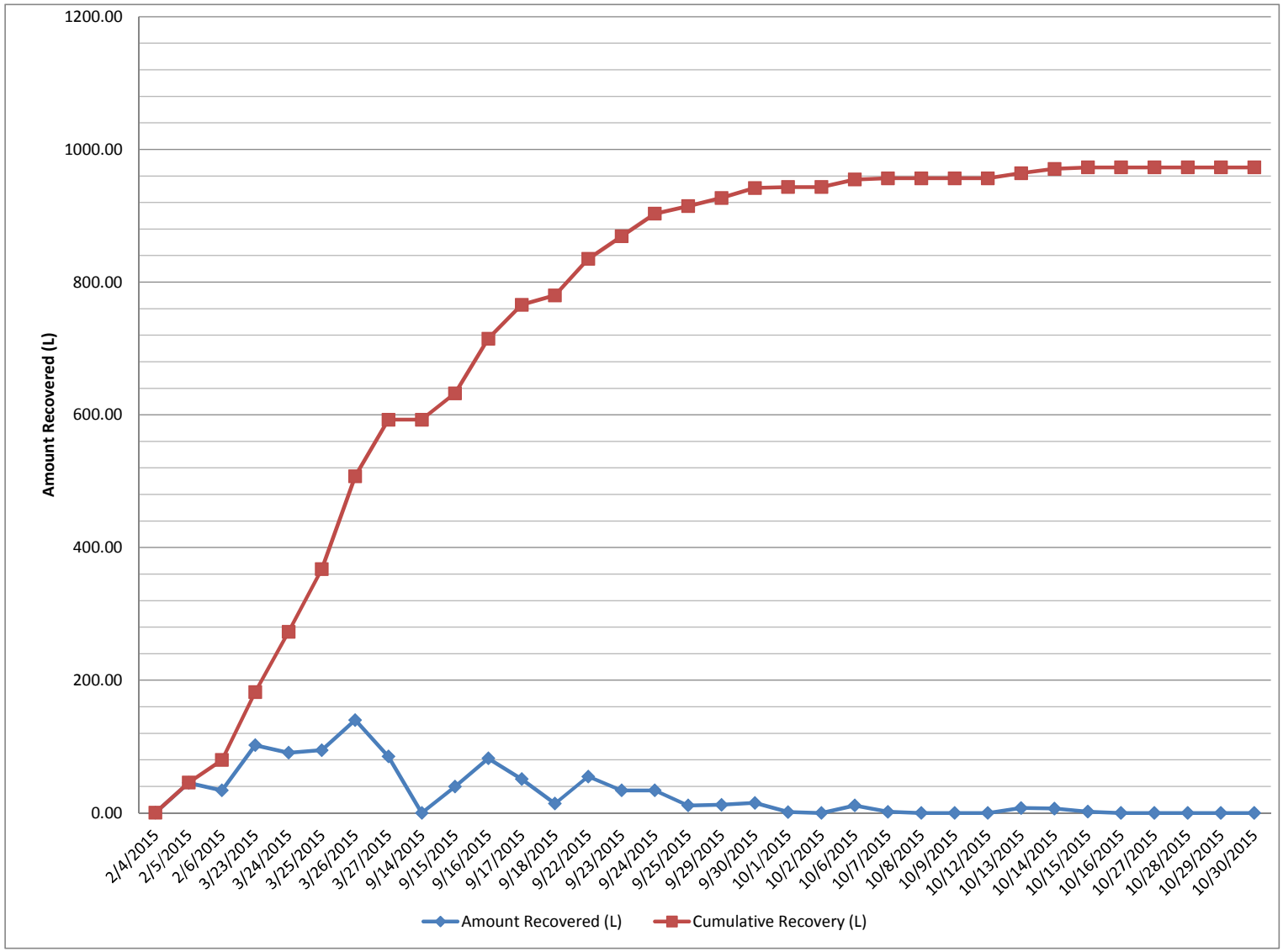
SUMMARY OF DNAPL PRODUCT RECOVERY IN DEC-024DR
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



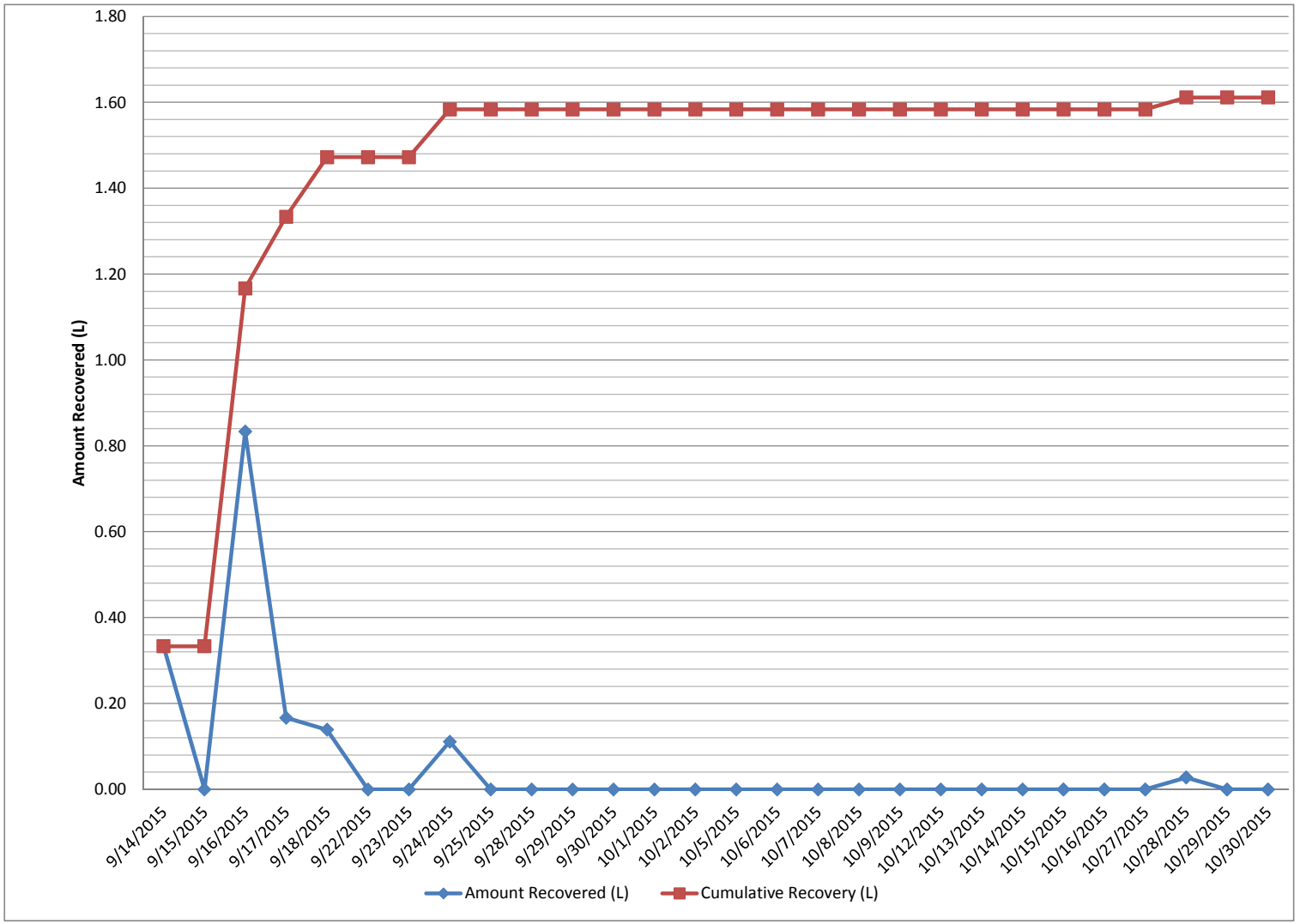
SUMMARY OF DNAPL PRODUCT RECOVERY IN DEC-092D
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



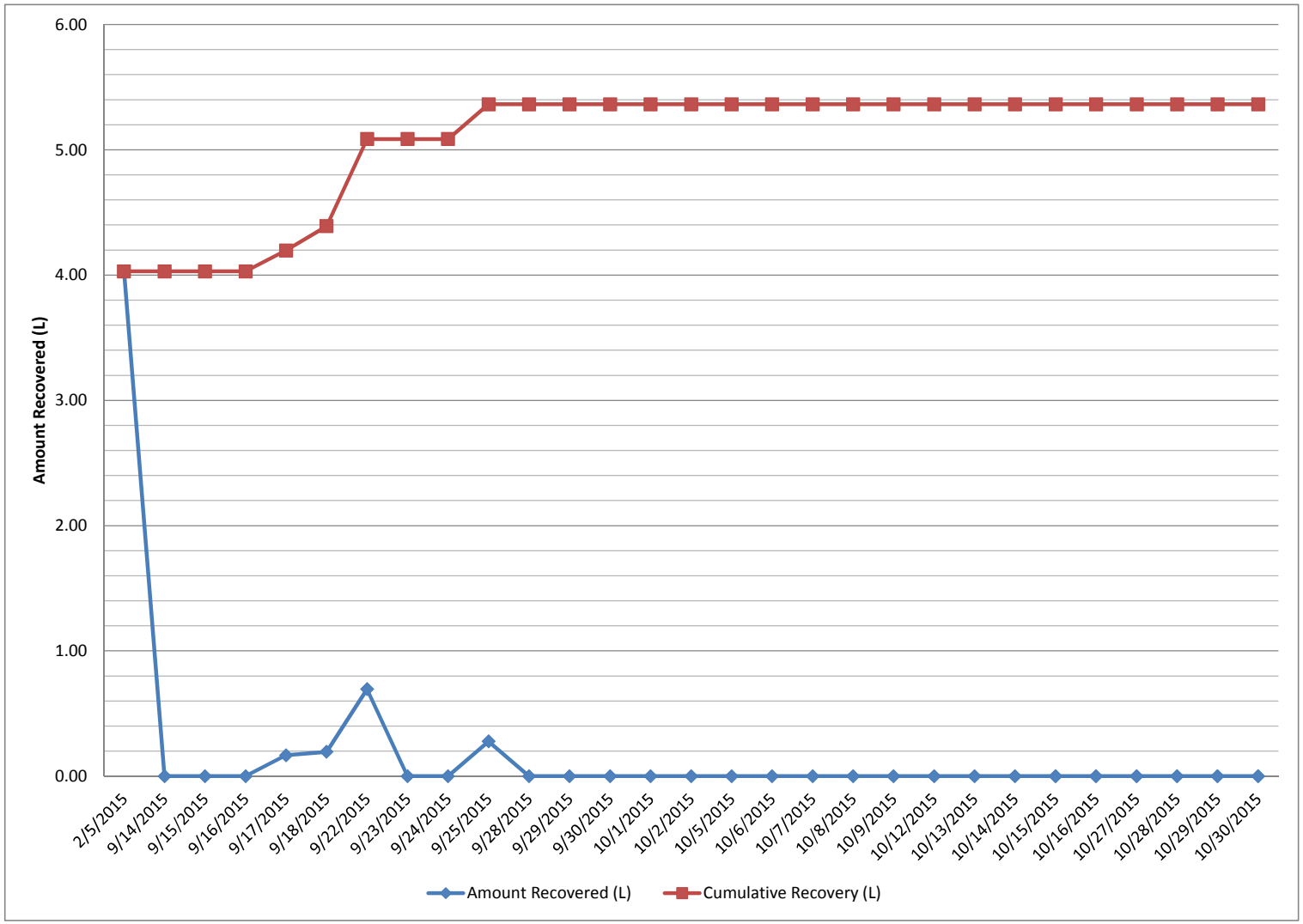
SUMMARY OF DNAPL PRODUCT RECOVERY IN DEC-136
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



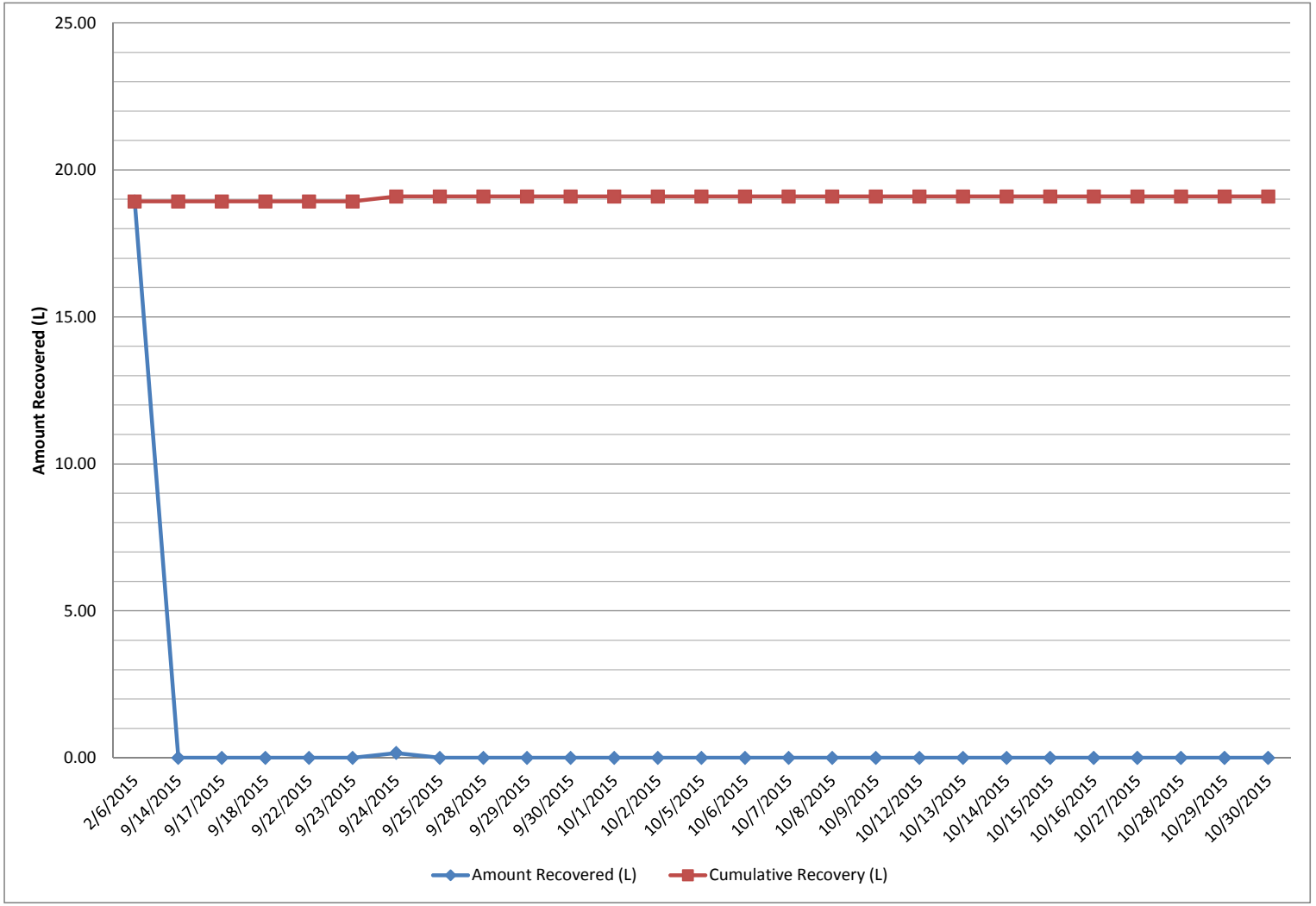
SUMMARY OF DNAPL PRODUCT RECOVERY IN DEC-136D
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



SUMMARY OF DNAPL PRODUCT RECOVERY IN EW-01
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



SUMMARY OF DNAPL PRODUCT RECOVERY IN EW-02
FORMER SPIC AND SPAN CLEANERS AND DRYERS SITE



ATTACHMENT II

WELL CONSTRUCTION LOGS

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling

Driller: M. Schock

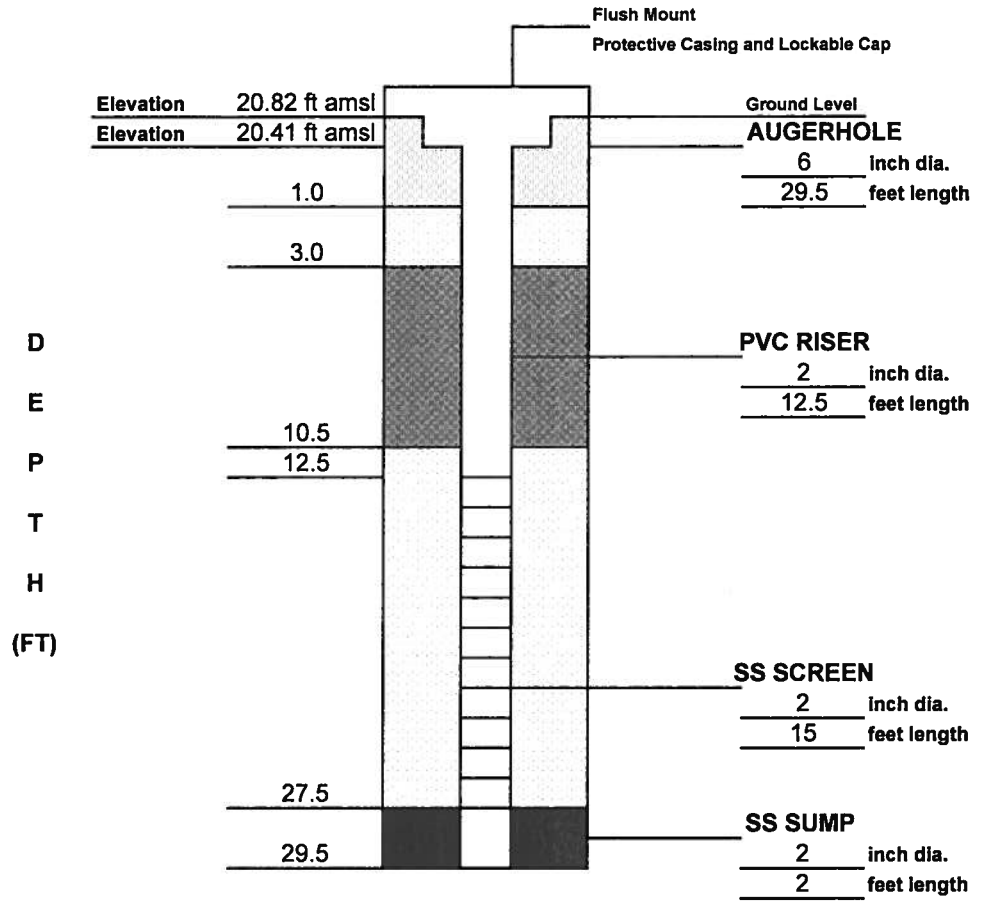
Rig Make/Model: 8140 LS Sonic Rig

Date: 2/2/2015

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log DEC-136D for Lithologic Description

WELL DESIGN



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: 8" Flush mount steel grade box	**Type:** 2" Stainless Steel	**Type:** #1 Sand **Setting:** 1.0-3.0 ft, 10.5-27.5 ft
Riser: 2" Sch 40 PVC	**Slot Size:** 0.010" - Continuous wrap	**SEAL MATERIAL** **Type:** Bentonite Chips **Setting:** 3.0-10.5 ft **Type:** Bentonite Pellets **Setting:** 27.5-29.5 ft

COMMENTS:

LEGEND

- Concrete
- Bentonite Chips
- Bentonite Pellets
- Silica Sandpack

Client: NYSDEC	Former Spic & Span Cleaners and Dyers Site - Pilot Study	**Project No.:** 11176359.00005
URS Corporation	MONITORING WELL CONSTRUCTION DETAILS	**Well Number:** DEC-136

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling

Driller: M. Schock

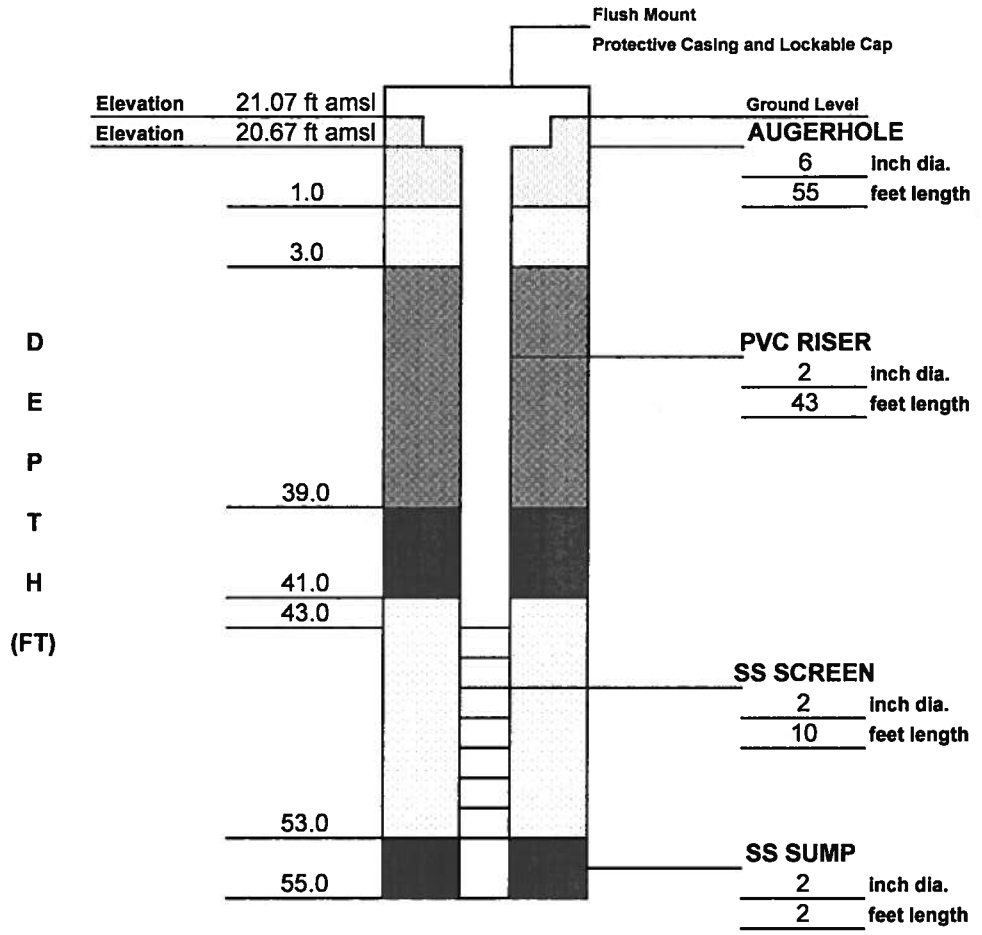
Rig Make/Model: 8140 LS Sonic Rig

Date: 1/22/2015

GEOLOGIC LOG

Depth(ft.)	Description
	See DEC-136D Boring Log for Lithologic Description

WELL DESIGN



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: 8" Flush mount steel grade box	**Type:** 2" Stainless Steel	**Type:** #1 Sand **Setting:** 1.0-3.0 ft, 43.0-53.0 ft
Riser: 2" Sch 40 PVC	**Slot Size:** 0.010" - Continuous wrap	**SEAL MATERIAL**
		Type: Bentonite Grout **Setting:** 3.0-39.0 ft
		Type: Bentonite Pellets **Setting:** 39.0-41.0 ft, 53.0-55.0 ft

COMMENTS:

LEGEND

- Concrete
- Bentonite Grout
- Bentonite Pellets
- Silica Sandpack

Client: NYSDEC	**Former Spic & Span Cleaners and Dyers Site - Pilot Study**	**Project No.:** 11176359.00005
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** DEC-136D

DRILLING SUMMARY

Geologist:
S. McCabe

Drilling Company:
Aquifer Drilling and Testing, Inc.

Driller:
J. McGill

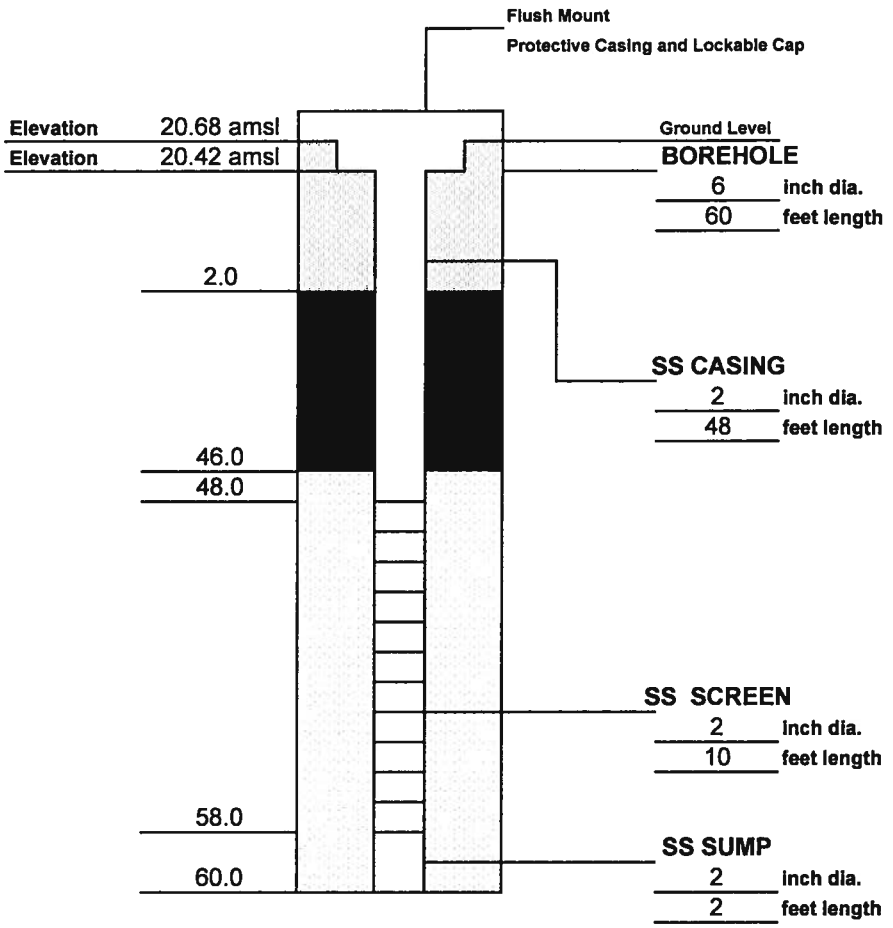
Rig Make/Model:
AMS 17-C Sonic

Date:
7/10/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log for Lithologic Description.

DEPTH (FT)



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: 8" Flush mount steel grade box	**Type:** 2" Stainless Steel	**Type:** #1 Sand **Setting:** 46.0-60.0 ft
Monitor: 2" Stainless Steel	**Slot Size:** 0.010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 2.0-46.0 ft

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: NYSDEC	**Meeker Avenue Site Characterization**	**Project No.: 11176465.00002**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: DEC-092D**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling

Driller: M. Schock

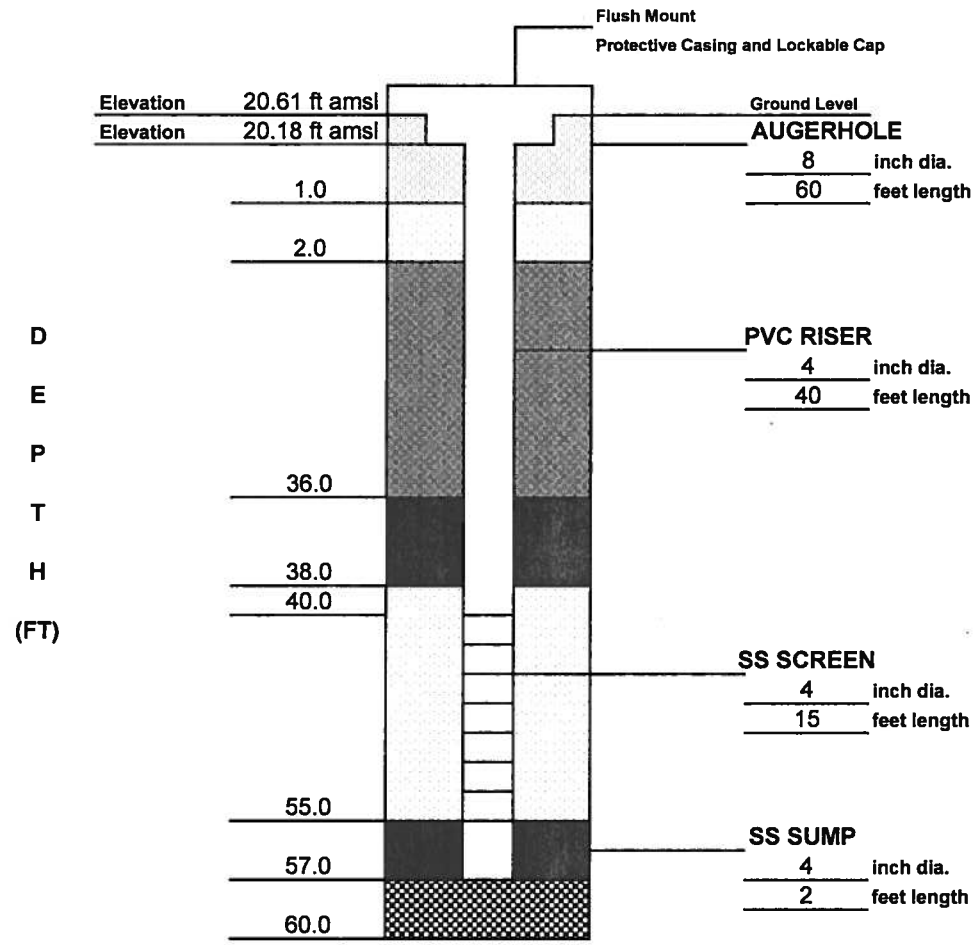
Rig Make/Model: 8140 LS Sonic Rig

Date: 2/3/2015

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log EW-01 for Lithologic Description

WELL DESIGN



CASING MATERIAL		SCREEN MATERIAL		FILTER MATERIAL		
Surface:	8" Flush mount steel grade box	**Type:**	4" Stainless Steel	Type: #3 Sand	Setting:	1.0-2.0 ft 38.0-55.0 ft
Riser:	4" Sch 40 PVC	**Slot Size:**	0.020" - Continuous wrap	**SEAL MATERIAL**		
				Type: Bentonite Grout	Setting:	2.0-36.0 ft
				Type: Bentonite Pellets	Setting:	36.0-38.0 ft 55.0-57.0 ft
				Type: Bentonite Chips	Setting:	57.0-60.0 ft

COMMENTS:

Borehole drilled to 57 ft below ground surface (bgs). Backfilled with bentonite chips from 60 to 57 ft bgs.

LEGEND

- Concrete
- Bentonite Grout
- Bentonite Pellets
- Bentonite Chips
- Silica Sandpack

Client: NYSDEC	**Former Spic & Span Cleaners and Dyers Site - Pilot Study**	**Project No.:** 11176359.00005
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** EW-01

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling

Driller: M. Schock

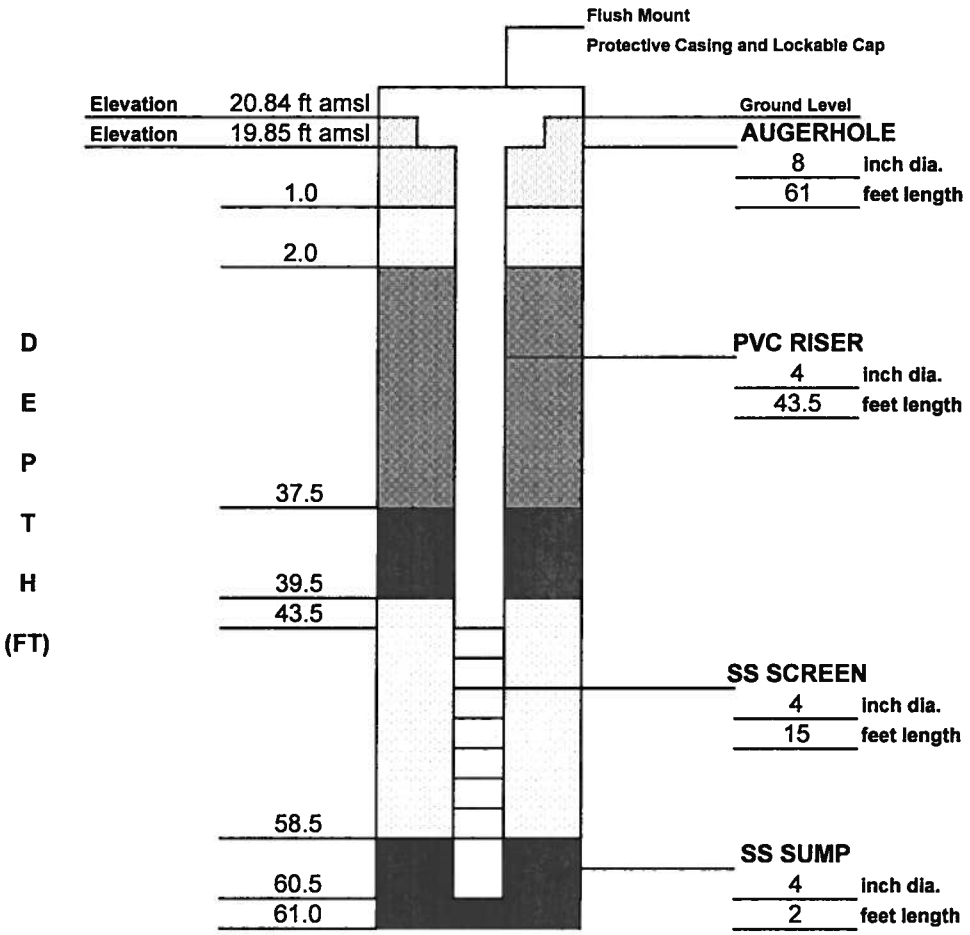
Rig Make/Model: 8140 LS Sonic Rig

Date: 2/4/2015

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log EW-02 for Lithologic Description

WELL DESIGN



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: 8" Flush mount steel grade box	**Type:** 4" Stainless Steel	**Type:** #3 Sand **Setting:** 1.0-2.0 ft, 39.5-58.5 ft
Riser: 4" Sch 40 PVC	**Slot Size:** 0.020" - Continuous wrap	**SEAL MATERIAL**
		Type: Bentonite Grout **Setting:** 2.0-37.5 ft
		Type: Bentonite Pellets **Setting:** 37.5-39.5 ft, 58.5-61.0 ft

COMMENTS:

LEGEND

- Concrete
- Bentonite Grout
- Bentonite Pellets
- Silica Sandpack

Client: NYSDEC	**Former Spic & Span Cleaners and Dyers Site - Pilot Study**	**Project No.:** 11176359.00005
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** EW-02

DRILLING SUMMARY

Geologist: S. McCabe

Drilling Company: Aquifer Drilling and Testing, Inc.

Driller: Jeremy Meyers

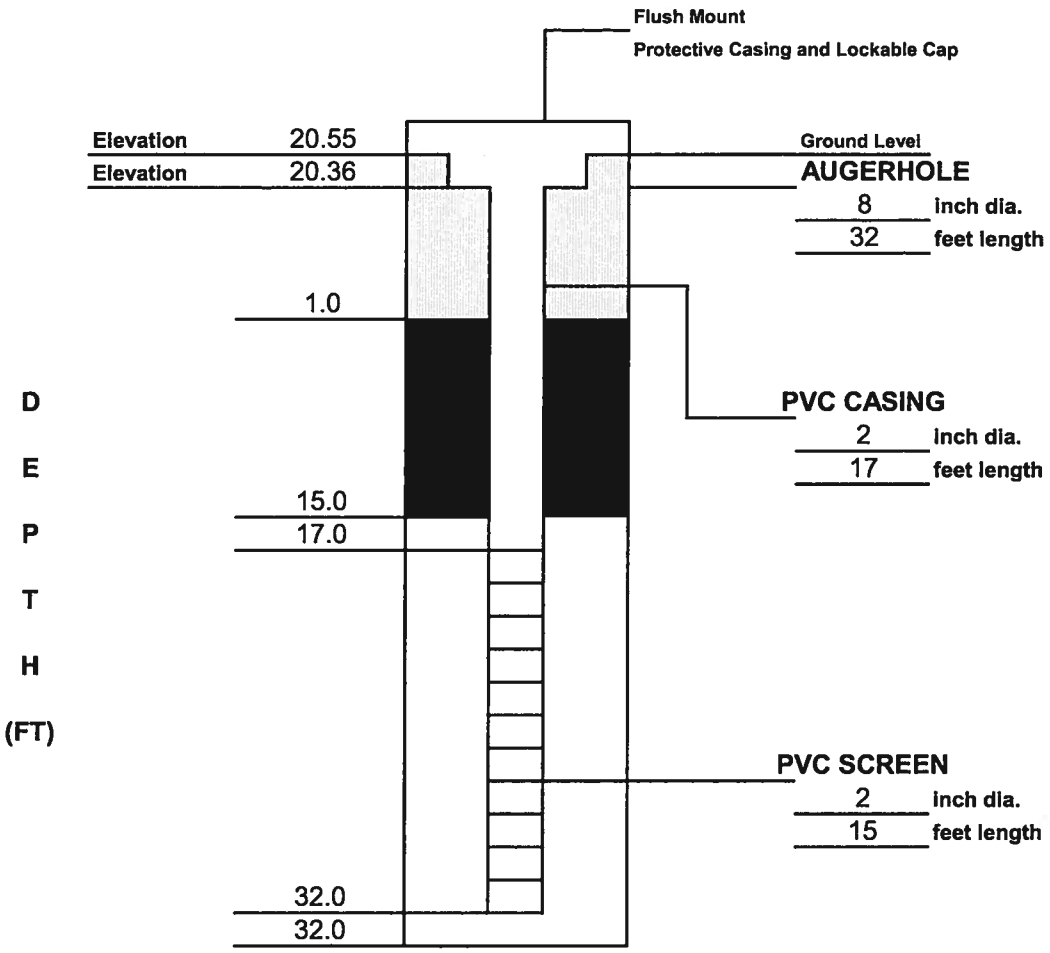
Rig Make/Model: CME 55LC

Date: 12/7/2007

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log for Lithologic Description.

WELL DESIGN



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #2 Sand **Setting:** 15.0-32.0'
Monitor: 2" PVC	**Slot Size:** .020"	**SEAL MATERIAL**
		Type: Bentonite **Setting:** 1.0-15.0'

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: NYSDEC	**Location : Meeker Avenue Site**	**Project No.: 11174989.00002**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: DEC-024**

DRILLING SUMMARY

Geologist:
S. McCabe

Drilling Company:
Aquifer Drilling and Testing, Inc.

Driller:
Jeremy Meyers

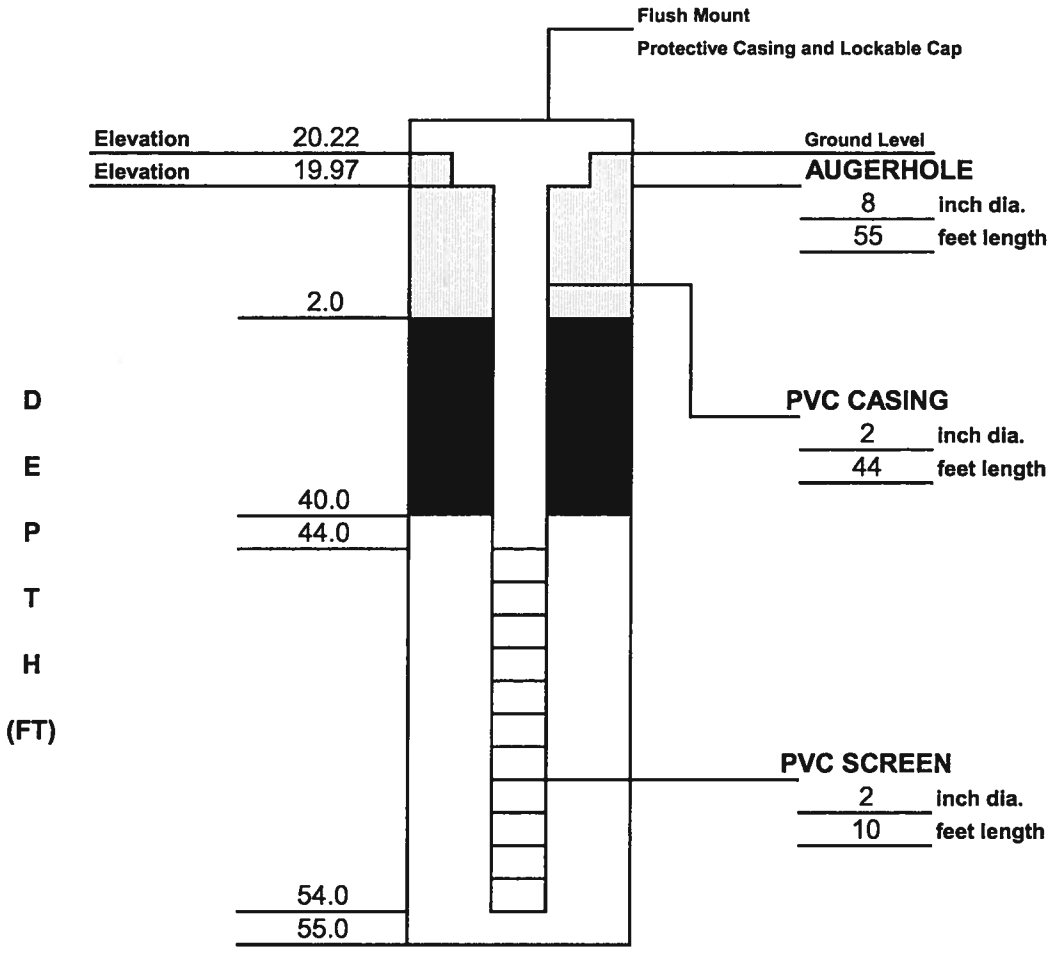
Rig Make/Model:
CME-55 LC

Date:
5/14/2008

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log for Lithologic Description.

WELL DESIGN



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #2 Sand **Setting:** 40.0-55.0'
Monitor: 2" PVC	**Slot Size:** .020"	**SEAL MATERIAL**
		Type: Bentonite **Setting:** 2.0-40.0'

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: NYSDEC	**Location : Meeker Avenue Site**	**Project No.: 11174989.00002**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: DEC-024D**

DRILLING SUMMARY

Geologist:
S. McCabe

Drilling Company:
Aquifer Drilling and Testing, Inc.

Driller:
Chris Stratton

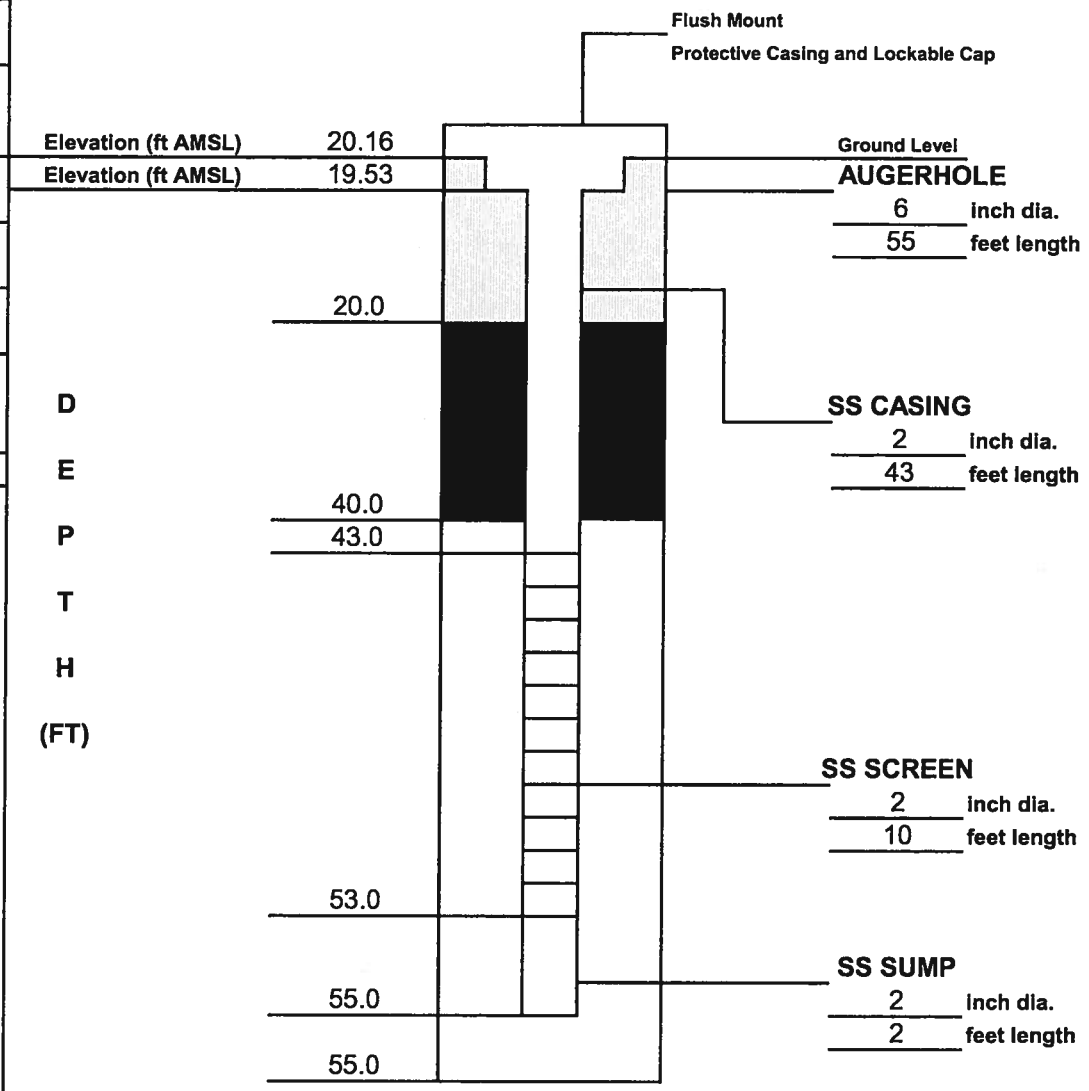
Rig Make/Model:
AMS 17-C Sonic

Date:
6/19/2009

GEOLOGIC LOG

Depth(ft.)	Description
	See Boring Log for Lithologic Description.

WELL DESIGN



CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: Steel grade box	**Type:** 2" Type 304 Stainless Steel	**Type:** #2 Sand **Setting:** 40.0-55.0'
Monitor: 2" Type 304 Stainless Steel	**Slot Size:** .020"	**SEAL MATERIAL** **Type:** Bentonite **Setting:** 20.0-40.0'

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: NYSDEC	**Location : Meeker Avenue Site**	**Project No.: 11174989.00002**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: DEC-024DR**

ATTACHMENT III

PHOTOGRAPHIC LOG

DNAPL REMOVAL, FORMER SPIC AND SPAN CLEANERS AND DYERS SITE
PHOTOGRAPHIC LOG
BROOKLYN, NEW YORK

Photo 1: 9/14/15: Site Setup for DNAPL removal at 315 Kingsland Ave

Photo 2: 9/14/15: Site Setup for DNAPL removal at 315 Kingsland Ave

DNAPL REMOVAL, FORMER SPIC AND SPAN CLEANERS AND DYERS SITE
PHOTOGRAPHIC LOG
BROOKLYN, NEW YORK

Photo 3: 9/14/15: Site Setup for DNAPL removal at 315 Kingsland Ave

Photo 4: 9/14/15: Site Setup for DNAPL removal at 315 Kingsland Ave

DNAPL REMOVAL, FORMER SPIC AND SPAN CLEANERS AND DYERS SITE
PHOTOGRAPHIC LOG
BROOKLYN, NEW YORK

Photo 5: 9/14/15: Site Setup for DNAPL removal at 315 Kingsland Ave

Photo 6: 9/14/15: Waterra pump and drum set up for DNAPL removal at DEC-136

Photo 7: 9/15/15: Waterra pump set up for DNAPL removal at DEC-136.

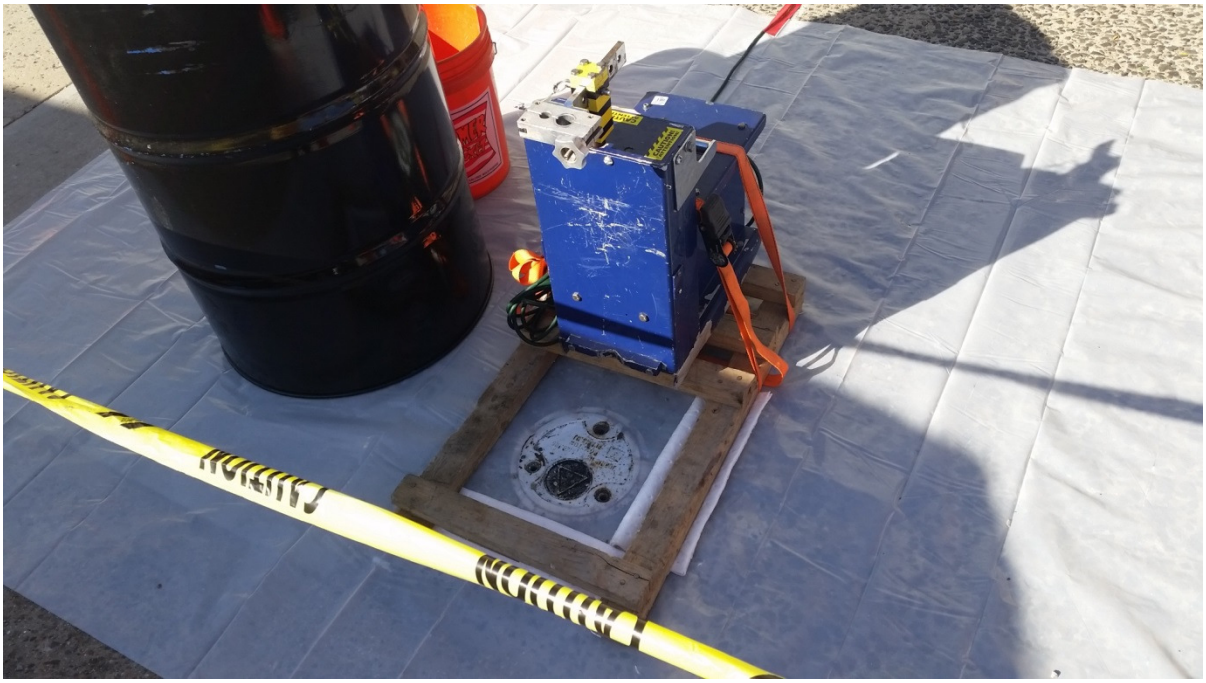


Photo 8: 9/15/15: Waterra pump set up for DNAPL removal at DEC-136

DNAPL REMOVAL, FORMER SPIC AND SPAN CLEANERS AND DYERS SITE
PHOTOGRAPHIC LOG
BROOKLYN, NEW YORK

Photo 9: 9/15/15: Waterra pump and drum set up for DNAPL removal at DEC-136

Photo 10: 9/15/15: Site Setup for DNAPL removal at 315 Kingsland Ave

DNAPL REMOVAL, FORMER SPIC AND SPAN CLEANERS AND DYERS SITE
PHOTOGRAPHIC LOG
BROOKLYN, NEW YORK

Photo 11: 9/16/15: Bailer showing DNAPL at DEC-136D