Atlantic Richfield Company

Paul G. Johnson
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December 7, 2020

Jessica LaClair
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

RE: Monthly Progress Report, November 2020
Former Anaconda Plant (a.k.a. Harbor at Hastings Site) Site No. 3-60-022
Hastings-On-Hudson, New York

Dear Ms. LaClair:

Enclosed is the November 2020 Monthly Progress Report for the Former Anaconda Plant (a.k.a. Harbor at Hastings Site), New York State Department of Environmental Conservation (NYSDEC) Site No. 3-60-022, Hastings-on-Hudson, New York. This progress report has been prepared in accordance with Section XI of the AMENDED ORDER ON CONSENT and ADMINISTRATIVE SETTLEMENT between Atlantic Richfield Company and NYSDEC, dated November 6, 2013. The time period covered is November 1, 2020 through November 30, 2020.

If you have any questions or comments on this submittal, please feel free to contact me at 630-731-4463.

Sincerely,

Paul G. Johnson
Liability Manager

Enclosure

cc: Village Manager Mary Beth Murphy, Hastings-On-Hudson
Mark Chertok, Hastings-On-Hudson
Karl Coplan, Pace/Riverkeeper
File

ecc: Jacquelyn Nealon, New York State Department of Health
Maureen Schuck, New York State Department of Health
Susan Edwards, New York State Department of Environmental Conservation
Benjamin Conlon, Esq. NYSDEC, Office of General Counsel
Mayor Nicola Armacost, Hastings-On-Hudson
Trustee Morgan Fleisig, Hastings-On-Hudson
Village Manager Mary Beth Murphy, Hastings-On-Hudson
Michael Facelle, P.E. Westchester County
Rachel Noe, Westchester County
Jim Lucari, BP
Michael Daneker, Arnold & Porter
Martha Gopal, Sovereign Consulting Inc.

FORMER ANACONDA WIRE AND CABLE PLANT SITE
(a.k.a. HARBOR AT HASTINGS SITE) OU1
NYSDEC SITE 360022
MONTHLY PROGRESS REPORT 186

PREPARED BY: **Atlantic Richfield Company**
Paul Johnson

REPORTING PERIOD: **November 1, 2020 through November 30, 2020**

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1. PROGRESS MADE THIS REPORTING PERIOD:

- DNAPL gauging and recovery was performed on November 2nd, 2020. HARW-5, and HARW-7 were gauged and pumped as required by the August 2011 Design Basis Memorandum.
- Progress continued on these on-going design-related activities:
  - NYSDEC approval letter for in-water work windows received September 24th, 2020; follow up discussion October 29th, 2020; dredge monitoring plan in progress for draft final design.
  - *Revised Beneficial Use Evaluation Memorandum* submitted to NYSDEC August 14th, 2020. Verbal approval received; AR reviewing concrete requirement.
  - Basis of Design Report for compensatory wetland in progress.
  - Basis of Design Report for Old Marina and Kinnally Cove in progress.
  - Potential SPDES Permit limits – Design team to prepare draft.
  - On-line meeting with Village November 9th, 2020; AR provided modeling files online for Village consultant; scheduled on-line meeting for December 2nd, 2020.
  - NYSDEC provided final Old Marina / Kinnally Cove internal memo to add OU-2 remedial areas November 9th, 2020.

2. UNANTICIPATED PROBLEM AREAS AND RECOMMENDED SOLUTIONS

- None this reporting period.

3. PROBLEMS RESOLVED

- None this reporting period.

4. DELIVERABLES SUBMITTED / RECEIVED

- November 2nd, 2020, Atlantic Richfield to NYSDEC: *Hastings October 2020 Monthly Progress Report*.

5. UPCOMING EVENTS / ACTIVITIES PLANNED

- Scheduling of subsequent gauging and recovery events will be dependent on the developing COVID-19 situation and AR will continue to communicate with NYSDEC regarding schedule. The tentative schedule is as follows:
- The next three DNAPL gauging and recovery events are tentatively scheduled to occur the weeks of December 7th, 2020, January 4th, 2021, and February 1st, 2021.
- Continue the Water Tower LNAPL IRM activities, as allowable, in accordance with the IRM Work Plan (Fluor Daniel GTI, December 1997), Fluor Daniel GTI correspondence to the NYSDEC dated May 18, 1998 and Atlantic Richfield correspondence with the NYSDEC on September 2, 2010. The upcoming LNAPL IRM events are tentatively scheduled to occur the week of January 4th, 2021 and the week of April 5th, 2021 in accordance with the schedule modification request, from monthly to quarterly, sent by Atlantic Richfield to NYSDEC on June 4, 2012, and the approval letter received from NYSDEC dated April 2, 2013.

6. KEY STAFFING

- Sovereign Consulting Inc.
- Parsons Environment and Infrastructure Group, Inc. (OM&M)
- Parsons Environment and Infrastructure Group, Inc. (Security)

7. PERCENTAGE COMPLETE

- DNAPL gauging and recovery – ongoing
- LNAPL IRM – ongoing

8. DATA

- Final data not generated during this reporting period.

9. CITIZEN PARTICIPATION ACTIVITIES

- None this reporting period.

LIST OF ACRONYMS

Acronym	*Description*
NYSDEC	New York State Department of Environmental Conservation
LNAPL	Light Non-Aqueous Phase Liquid
DNAPL	Dense Non-Aqueous Phase Liquid
OU	Operable Unit
IRM	Interim Remedial Measure
O&M	Operations and Maintenance

LIST OF REFERENCES

FLUOR Daniel GTI, 1997. *Draft Interim Remedial Measure Work Plan – Separate Phase Liquid Recovery.* December.

TABLE I
OCTOBER DNAPL PUMPING SUMMARY (WEEK OF 11/2/2020)
ATLANTIC RICHFIELD
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

Well ID	Date Gauged/ Pumped	Installation Angle (deg)	Pre-Pumping Uncorrected Apparent Height (inches)	Pre-Pumping Corrected Apparent Height (inches)	Post-Pumping Uncorrected Apparent Height (inches)	Post-Pumping Corrected Apparent Height (inches)	Total Fluids Removed (gallons)[4]	Total DNAPL Removed (gallons)[6]	Post-Purging Distance of DNAPL Surface Below MS/Fill Interface (ft)[5]
HARW-1	11/2/2020 [1]	0	0	0	NA**	NA**	NA**	NA**	NA**
HARW-2	11/2/2020 [2]	0	6.0	6.0			NA**	NA**	4.7
	NA** [3]				NA**	NA**			
HARW-3	11/2/2020 [2]	16.5	6.0	5.8			NA**	NA**	3.8
	NA** [3]				NA**	NA**			
HARW-4	11/2/2020 [2]	24.5	21.0	19.1			NA**	NA**	2.5
	NA** [3]				NA**	NA**			
HARW-5	11/2/2020 [2]	23.5	34.0	31.2			42.0	7.2	4.2
	11/2/2020 [3]				1.0	0.9			
HARW-6	11/2/2020 [2]	14.0	6.0	5.8			NA**	NA**	4.2
	NA** [3]				NA**	NA**			
HARW-7	11/2/2020 [2]	0	24.0	24.0			42.0	5.0	3.1
	11/2/2020 [3]				1.0	1.0			
HARW-8	11/2/2020 [2]	0	13.0	13.0			NA**	NA**	3.7
	NA** [3]				NA**	NA**			
HAOW-12A	11/2/2020 [2]	0	13.0	13.0			NA**	NA**	4.2
	NA** [3]				NA**	NA**			

Total Gallons of DNAPL Removed: 12.2

Notes:

[1]DNAPL not present, pumping not completed in this well

[2]Pre-pumping gauge date

[3]Post-pumping gauge date.

[4]Total gallons of fluid (DNAPL and groundwater) removed from well based on measurement in container.

[5]Represents the distance of the post-purging DNAPL material interface from the top of the MS/Fill interface.

[6]Unless otherwise noted, this column refers to the total volume of DNAPL removed based calculation of volume based on well diameter and height of DNAPL in the well.

*DNAPL is present but is under 6-inches and discontinuous.

**Volume in the well is less than threshold required to perform DNAPL pumping procedures.

Apparent Height: refers to the distance between the DNAPL surface and the bottom of the well sump which includes all fluids (groundwater and DNAPL) in the matrix.

NA: Not Applicable

TABLE II
SUMMARY OF DNAPL MEASUREMENTS
NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
MW-12	Cumulative 10/9/2006 - 7/29/2010	-	-	-	5.0	-	-	-
	TOTAL VOLUME RECOVERED TO DATE FROM MW-12 (GALLONS)				***5.0***			
HAOW-12A	Cumulative 3/2/2009 - 12/10/2018	-	-	-	49.7	-	DMT[4]	-
	1/14/2019	42.9	0.7	-	-	35	DMT[4]	-
	2/4/2019	42.3	1.3	-	-	21	DMT[4]	-
	3/11/2019	42.4	1.2	-	-	35	DMT[4]	-
	4/1/2019	42.6	1.0	-	-	21	DMT[4]	-
	5/6/2019	42.5	1.1	-	-	35	DMT[4]	-
	6/3/2019	42.4	1.2	-	-	28	DMT[4]	-
	8/5/2019	42.5	1.1	-	-	63	DMT[4]	-
	9/9/2019	42.4	1.2	-	-	35	DMT[4]	-
	10/7/2019	42.6	1.0	-	-	28	DMT[4]	-
	11/4/2019	42.4	1.2	-	-	28	DMT[4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	42.6	1.0	-	-	70	DMT[4]	-
	2/3/2020	42.4	1.2	-	-	21	DMT[4]	-
	3/2/2020	42.9	0.7	-	-	28	DMT[4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	42.8	0.8	-	-	126	DMT[4]	-
	8/3/2020	42.6	1.0	-	-	28	DMT[4]	-
	9/8/2020	42.6	1.0	-	-	36	DMT[4]	-
	10/5/2020	42.6	1.0	-	-	27	DMT[4]	-
	11/2/2020	42.5	1.1	-	-	28	DMT[4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HAOW-12A (GALLONS)				***49.7***			
HARW-1	Cumulative 9/29/2010 - 12/10/2018	-	-	-	0.0	-	-	-
	1/14/2019	No product detected	0.0	-	-	35	DMT[4]	-
	2/4/2019	No product detected	0.0	-	-	21	DMT[4]	-
	3/11/2019	No product detected	0.0	-	-	35	DMT[4]	-
	4/1/2019	No product detected	0.0	-	-	21	DMT[4]	-
	5/6/2019	No product detected	0.0	-	-	35	DMT[4]	-
	6/3/2019	No product detected	0.0	-	-	28	DMT[4]	-
	8/5/2019	No product detected	0.0	-	-	63	DMT[4]	-
	9/9/2019	No product detected	0.0	-	-	35	DMT[4]	-
	10/7/2019	No product detected	0.0	-	-	28	DMT[4]	-
	11/4/2019	No product detected	0.0	-	-	28	DMT[4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	No product detected	0.0	-	-	70	DMT[4]	-
	2/3/2020	No product detected	0.0	-	-	21	DMT[4]	-
	3/2/2020	No product detected	0.0	-	-	28	DMT[4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	No product detected	0.0	-	-	126	DMT[4]	-
	8/3/2020	No product detected	0.0	-	-	28	DMT[4]	-
	9/8/2020	No product detected	0.0	-	-	36	DMT[4]	-
	10/5/2020	No product detected	0.0	-	-	27	DMT[4]	-
	11/2/2020	No product detected	0.0	-	-	28	DMT[4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-1 (GALLONS)				***0.0***			

TABLE II
SUMMARY OF DNAPL MEASUREMENTS
NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-2	Cumulative 9/29/2010 - 12/10/2018	-	-	-	812.3	-	-	-
	1/14/2019	38.8	1.3	-	-	35	DMT [4]	-
	2/4/2019	38.0	2.0	0.08	5	21	DMT [4]	double diaphragm pump
	3/11/2019	38.8	1.2	-	-	35	DMT [4]	-
	4/1/2019	38.5	1.5	-	-	21	DMT [4]	-
	5/6/2019	36.8	3.2	0.25	7.6	35	DMT [4]	double diaphragm pump
	6/3/2019	38.8	1.3	-	-	28	DMT [4]	-
	8/5/2019	36.8	3.2	0.25	7.6	63	DMT [4]	double diaphragm pump
	9/9/2019	38.5	1.5	-	-	35	DMT [4]	-
	10/7/2019	37.8	2.3	0.08	5.7	28	DMT [4]	double diaphragm pump
	11/4/2019	39.8	0.2	--	--	28	DMT [4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	38.6	1.4	--	--	70	DMT [4]	-
	2/3/2020	37.0	3.0	0.67	6.1	21	DMT [4]	-
	3/2/2020	38.6	1.4	--	--	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	35.2	4.8	0.08	12.4	126	DMT [4]	double diaphragm pump
	8/3/2020	39.0	1.0	--	--	28	DMT [4]	-
	9/8/2020	38.4	1.6	--	--	36	DMT [4]	-
	10/5/2020	37.8	2.3	0.00	5.9	27	DMT [4]	-
	11/2/2020	39.5	0.5	--	--	28	DMT [4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-2 (GALLONS)				***862.6***			
HARW-3	Cumulative 10/14/2010 - 12/10/2018	-	-	-	28.6	-	-	-
	1/14/2019	38.7	0.3	-	-	35	DMT [4]	-
	2/4/2019	38.7	0.3	-	-	21	DMT [4]	-
	3/11/2019	38.6	0.4	-	-	35	DMT [4]	-
	4/1/2019	38.8	0.3	-	-	21	DMT [4]	-
	5/6/2019	38.8	0.3	-	-	35	DMT [4]	-
	6/3/2019	38.6	0.4	-	-	28	DMT [4]	-
	8/5/2019	38.5	0.5	-	-	63	DMT [4]	-
	9/9/2019	38.3	0.7	-	-	35	DMT [4]	-
	10/7/2019	38.5	0.5	-	-	28	DMT [4]	-
	11/4/2019	38.5	0.5	-	-	28	DMT [4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	38.5	0.5	-	-	70	DMT [4]	-
	2/3/2020	38.3	0.7	-	-	21	DMT [4]	-
	3/2/2020	38.5	0.5	--	--	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	38.5	0.5	--	--	126	DMT [4]	-
	8/3/2020	38.4	0.6	--	--	28	DMT [4]	-
	9/8/2020	38.5	0.5	--	--	36	DMT [4]	-
	10/5/2020	38.4	0.6	--	--	27	DMT [4]	-
	11/2/2020	38.5	0.5	--	--	28	DMT [4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-3 (GALLONS)				***28.6***			

TABLE II
SUMMARY OF DNAPL MEASUREMENTS
NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-4	Cumulative 10/14/2010 - 12/10/2018	-	-	-	213.8	-	-	-
	1/14/2019	40.4	0.6	--	--	35	DMT [4]	-
	2/4/2019	40.4	0.6	--	--	21	DMT [4]	-
	3/11/2019	40.3	0.8	--	--	35	DMT [4]	-
	4/1/2019	39.8	1.2	--	--	21	DMT [4]	-
	5/6/2019	40.0	1.0	--	--	35	DMT [4]	-
	6/3/2019	40.0	1.0	--	--	28	DMT [4]	-
	8/5/2019	39.8	1.2	--	--	63	DMT [4]	-
	9/9/2019	39.8	1.3	--	--	35	DMT [4]	-
	10/7/2019	39.6	1.4	--	--	28	DMT [4]	-
	11/4/2019	39.4	1.6	--	--	28	DMT [4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	39.7	1.3	--	--	70	DMT [4]	-
	2/3/2020	39.7	1.3	--	--	21	DMT [4]	-
	3/2/2020	40.3	0.7	--	--	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	39.8	1.3	--	--	126	DMT [4]	-
	8/3/2020	37.5	1.5	--	--	28	DMT [4]	-
	9/8/2020	37.5	1.5	--	--	36	DMT [4]	-
	10/5/2020	37.3	1.8	--	--	27	DMT [4]	-
	11/2/2020	37.3	1.8	--	--	28	DMT [4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-4 (GALLONS)				***213.8***			
HARW-5	Cumulative 7/18/2011 - 12/11/2018	-	-	-	1036.4	-	-	-
	1/14/2019	36.6	3.7	0.1	9.4	34	DMT [4]	double diaphragm pump
	2/4/2019	38.1	2.2	0.1	5.4	21	DMT [4]	double diaphragm pump
	3/11/2019	36.6	3.7	0.1	9.4	35	DMT [4]	double diaphragm pump
	4/2/2019	38.3	2.0	0.1	5.0	22	DMT [4]	double diaphragm pump
	5/7/2019	36.7	3.6	0.1	9.1	35	DMT [4]	double diaphragm pump
	6/4/2019	37.3	3.0	0.1	7.6	28	DMT [4]	double diaphragm pump
	8/6/2019	35.1	5.3	0.1	13.5	63	DMT [4]	double diaphragm pump
	9/10/2019	36.6	3.7	0.0	9.6	35	DMT [4]	double diaphragm pump
	10/7/2019	37.5	2.8	0.1	7.2	27	DMT [4]	double diaphragm pump
	11/4/2019	37.5	2.8	0.2	7.0	28	DMT [4]	double diaphragm pump
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	35.0	5.3	0.1	13.7	70	DMT [4]	double diaphragm pump
	2/3/2020	38.3	2.0	0.5	3.9	21	DMT [4]	double diaphragm pump
	3/2/2020	37.5	2.8	0.00	7.4	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	35.0	5.3	0.17	13.5	126	DMT [4]	double diaphragm pump
	8/3/2020	38.3	2.0	0.17	4.8	28	DMT [4]	double diaphragm pump
	9/8/2020	37.0	3.3	0.08	8.5	36	DMT [4]	double diaphragm pump
	10/6/2020	38.1	2.3	0.08	5.7	28	DMT [4]	double diaphragm pump
	11/2/2020	37.5	2.8	0.08	7.2	27	DMT [4]	double diaphragm pump
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-5 (GALLONS)				***1184.3***			

TABLE II
SUMMARY OF DNAPL MEASUREMENTS
NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-6	Cumulative 7/19/2011 - 12/10/2018	-	-	-	0.0	-	-	-
	1/14/2019	40.1	0.7	-	-	35	DMT [4]	-
	2/4/2019	40.1	0.7	-	-	21	DMT [4]	-
	3/11/2019	40.4	0.4	-	-	35	DMT [4]	-
	4/1/2019	40.3	0.5	-	-	21	DMT [4]	-
	5/6/2019	40.3	0.5	-	-	35	DMT [4]	-
	6/3/2019	40.3	0.5	-	-	28	DMT [4]	-
	8/5/2019	40.3	0.5	-	-	63	DMT [4]	-
	9/9/2019	40.0	0.8	-	-	35	DMT [4]	-
	10/7/2019	40.2	0.6	-	-	28	DMT [4]	-
	11/4/2019	40.1	0.7	-	-	28	DMT [4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	40.0	0.8	-	-	70	DMT [4]	-
	2/3/2020	39.8	1.0	-	-	21	DMT [4]	-
	3/2/2020	40.1	0.8	-	-	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	40.6	0.3	-	-	126	DMT [4]	-
	8/3/2020	40.6	0.2	-	-	28	DMT [4]	-
	9/8/2020	40.4	0.4	-	-	36	DMT [4]	-
	10/5/2020	40.4	0.4	-	-	27	DMT [4]	-
	11/2/2020	40.3	0.5	-	-	28	DMT [4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-6 (GALLONS)				***0.0***			
HARW-7	Cumulative 7/18/2011 - 12/11/2018	-	-	-	550.2	-	-	-
	1/14/2019	41.1	0.9	-	-	34	DMT [4]	-
	2/4/2019	40.8	1.2	-	-	21	DMT [4]	-
	3/11/2019	40.3	1.7	-	-	35	DMT [4]	-
	4/1/2019	39.5	2.5	0.1	6.3	21	DMT [4]	double diaphragm pump
	5/6/2019	41.1	0.9	-	-	35	DMT [4]	-
	6/3/2019	41.3	0.8	-	-	28	DMT [4]	-
	8/5/2019	40.3	1.7	-	-	63	DMT [4]	-
	9/10/2019	40.0	2.0	0.3	4.6	36	DMT [4]	double diaphragm pump
	10/7/2019	40.9	1.1	-	-	27	DMT [4]	-
	11/4/2019	40.5	1.5	-	-	28	DMT [4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/14/2020	39.0	3.0	0.1	7.6	71	DMT [4]	-
	2/3/2020	41.5	0.5	-	-	20	DMT [4]	-
	3/2/2020	41.0	1.0	-	-	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	38.7	3.3	0.2	8.3	126	DMT [4]	double diaphragm pump
	8/3/2020	41.3	0.7	--	--	28	DMT [4]	-
	9/8/2020	41.1	0.9	--	--	36	DMT [4]	-
	10/5/2020	40.4	1.6	--	--	27	DMT [4]	-
	11/2/2020	40.0	2.0	0.1	5.0	28	DMT [4]	double diaphragm pump
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-7 (GALLONS)				***582.0***			

TABLE II
SUMMARY OF DNAPL MEASUREMENTS
NYSDEC #3-60-022
1 RIVER STREET
HASTINGS-ON-HUDSON, NEW YORK

	Date	Depth to Product (ft)	Product Apparent Height - Pre-pumping (ft)	Product Apparent Height - Post-pumping (ft)	Approximate Volume of Product Recovered (gallons) [3]	Days Elapsed Between Measurement Readings	Measurement Tool Used	Recovery Procedure Used
HARW-8	Cumulative 7/19/2011 - 12/10/2018	-	-	-	26.9	-	-	-
	1/14/2019	41.5	1.5	-	-	35	DMT [4]	-
	2/4/2019	41.5	1.5	-	-	21	DMT [4]	-
	3/11/2019	41.3	1.7	-	-	35	DMT [4]	-
	4/2/2019	41.0	2.0	0.3	4.6	22	DMT [4]	double diaphragm pump
	5/6/2019	42.3	0.7	-	-	34	DMT [4]	-
	6/3/2019	42.2	0.8	-	-	28	DMT [4]	-
	8/5/2019	41.8	1.3	-	-	63	DMT [4]	-
	9/9/2019	41.9	1.1	-	-	35	DMT [4]	-
	10/7/2019	41.6	1.4	-	-	28	DMT [4]	-
	11/4/2019	41.5	1.5	-	-	28	DMT [4]	-
	12/2/2019	DNAPL pumping not required to be completed					-	-
	1/13/2020	41.7	1.3	-	-	70	DMT [4]	-
	2/3/2020	42.0	1.0	-	-	21	DMT [4]	-
	3/2/2020	41.6	1.4	-	-	28	DMT [4]	-
	4/6/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	5/4/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	6/1/2020	DNAPL pumping not completed due to COVID-19 restrictions					-	-
	7/6/2020	41.3	1.7	-	-	126	DMT [4]	-
	8/3/2020	40.8	2.3	0.5	4.6	28	DMT [4]	double diaphragm pump
	9/8/2020	42.1	0.9	-	-	36	DMT [4]	-
	10/5/2020	42.0	1.0	-	-	27	DMT [4]	-
	11/2/2020	41.9	1.1	-	-	28	DMT [4]	-
	TOTAL VOLUME RECOVERED TO DATE FROM HARW-8 (GALLONS)				***36.1***			

TOTAL VOLUME RECOVERED TO DATE FROM ALL WELLS (GALLONS) ***2962.1***

Notes:

MW-12
Depth to Top of Screen: 33 ft
Depth to Bottom: 36 ft

HARW-1
Depth to Top of Screen: 24 ft
Depth to Bottom: 42 ft

HARW-5
Angle from Vertical: 23.5º
Vertical Depth to Top of Screen: 27 ft
Vertical Depth to Bottom: 40.3 ft

HAOW-12A
Depth to Top of Screen: 28.6 ft
Depth to Bottom: 43.6 ft

HARW-2
Depth to Top of Screen: 26 ft
Depth to Bottom: 40 ft

HARW-6
Angle from Vertical: 14º
Vertical Depth to Top of Screen: 26.7 ft
Vertical Depth to Bottom: 40.8 ft

HARW-3
Angle from Vertical: 16.5º
Vertical Depth to Top of Screen: 25.4 ft
Vertical Depth to Bottom: 39 ft

HARW-7
Depth to Top of Screen: 27.5 ft
Depth to Bottom: 42 ft

HARW-4
Angle from Vertical: 24.5º
Vertical Depth to Top of Screen: 28.7 ft
Vertical Depth to Bottom: 41 ft

HARW-8
Depth to Top of Screen: 28.5 ft
Depth to Bottom: 43 ft

For historical reference to past DNAPL measurement events prior to January 2017, please refer to the January 2018 monthly report submitted to NYSDEC on 5 February 2018.

DMT = DNAPL Measurement Tool, consisting of a copper tubing handle, a spacer section to prevent the probe from contacting the sides of the well riser, and an all-thread rod probe to extend into the DNAPL.

[1] Reserved

[2] Reserved

[3] Volume of product recovered by downwell pump is estimated by approximating the volume discharged to the drum and additional product in tubing and on pump.
Volume of product recovered by bailer is estimated using the bailer volume and number of times bailed.
Volume of product recovered by double diaphragm and positive displacement piston pumps are estimated by approximating the volume discharged to the drum or by using the pre- and post-pumping apparent height of product and the well dimensions (8" diameter well).

[4] All depth and thickness values for HARW-3, HARW-4 HARW-5 and HARW-6 are provided as vertical equivalents of the field measurements based on the angle of the installed well.