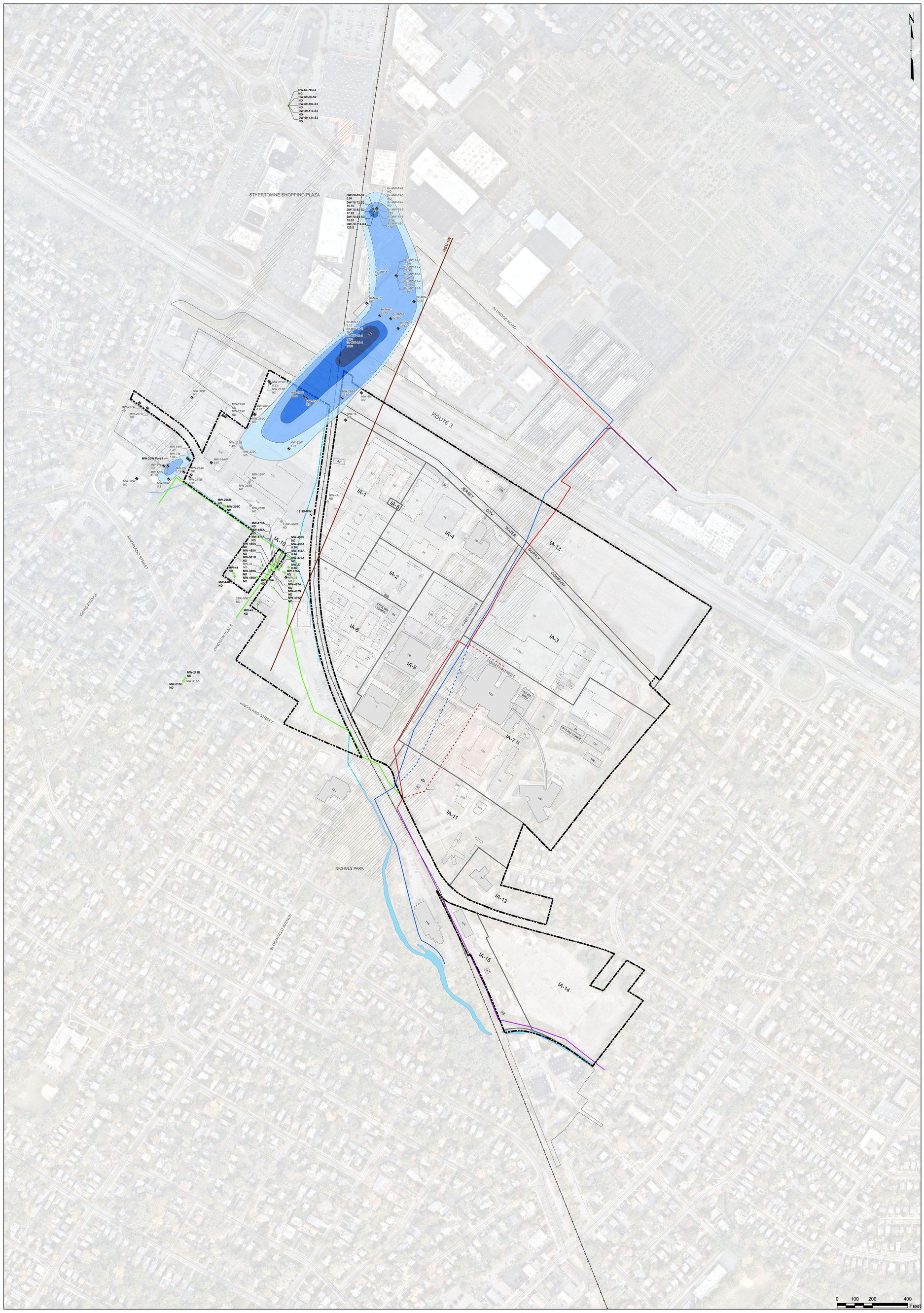

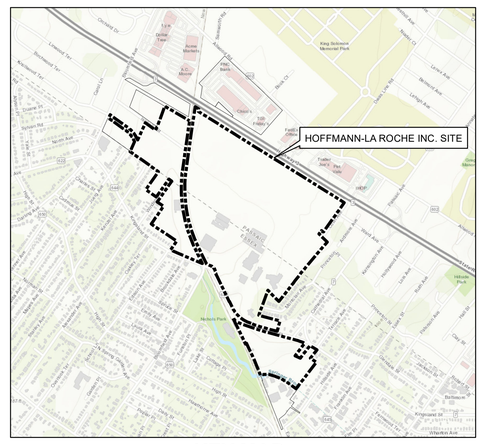

KEY MAP
SCALE: 1" = 1,000'

LEGEND

- HOFFMANN-LA ROCHE INC. SITE PROPERTY BOUNDARY
- INVESTIGATIVE AREAS
- OFF-SITE PROPERTY BOUNDARY
- DEMOLISHED BUILDING
- CURRENT BUILDING
- RAILROAD
- ROADWAY
- HGU SUBCROP BOUNDARY
- APPROXIMATE FAULT ZONE
- ST. PAUL'S BROOK
- SPRINGER BROOK (CULVERT)
- ST. PAUL'S BROOK (CULVERT)
- VALLEY DRAIN
- FORMER VALLEY DRAIN
- CLIFTON-ALLWOOD MUNICIPAL SEWER
- FORMER CLIFTON-ALLWOOD MUNICIPAL SEWER
- NUTLEY MUNICIPAL SEWER
- TRUNK SEWER

HGU 1 WELL LOCATIONS

- MW-206B ND — WELL SAMPLED 3Q 2018 SEMI-ANNUAL & IRM PROGRAMS
- MW-274B 0.38 — WELL SAMPLED DURING PREVIOUS SAMPLING EVENTS - 1Q 2015 THROUGH 2Q 2018 (DATA USED FOR CONTOURING)
- 131RI-MW1 — WELL SAMPLED PRIOR TO 1Q 2015 (DATA NOT SHOWN)
- MW-213A — DECOMMISSIONED WELL THROUGH 3Q 2018

TOTAL TCA+ ISOCONCENTRATION CONTOURS (1,1,1-TCA, 1,1-DCE, 1,1-DCA)

- >1 AND ≤ 10 PPB
- >10 AND ≤ 100 PPB
- >100 AND ≤ 1,000 PPB
- >1,000 PPB

GROUNDWATER QUALITY STANDARD TABLE

ABBREVIATION	GWQS (ppb)	COMPOUND
1,1-DCA	50	1,1-Dichloroethane
1,1-DCE	1	1,1-Dichloroethane
1,1,1-TCA	30	1,1,1-Trichloroethane

NOTES

1. HGU = HYDROGEOLOGIC UNIT.
2. REFER TO REPORT TABLE 2 FOR WELL GRID LOCATIONS.
3. TCA+ = 1,1,1-TCA AND BREAKDOWN PRODUCTS (1,1-DCE AND 1,1-DCA).
4. THIS FIGURE DEPICTS THE TCA+ GROUNDWATER QUALITY DATA WITHIN HGU 1.
5. HGUs DIP TO THE NORTHWEST AND THEREFORE HGUs 1, 2, 3, AND 4 ARE NOT UNIFORMLY PRESENT BENEATH THE ENTIRE SITE AS THEY SUBCROP (i.e., INTERSECT THE BEDROCK SURFACE) FROM EAST TO WEST ACROSS THE SITE. HGU SUBCROP BOUNDARIES FOR HGUs 1, 2, 3, AND 4 ARE SHOWN AND THE RESPECTIVE HGUs ARE NOT PRESENT EAST OF THESE LINES.
6. ALL CONCENTRATIONS ARE IN PARTS PER BILLION (PPB).
7. THE DATA SUMMARIZED ON THIS FIGURE INCLUDE THE SITE-WIDE SEMI-ANNUAL SAMPLING EVENT CONDUCTED IN 3Q 2018 AND INTERIM REMEDIAL MEASURES (IRM) PERFORMANCE MONITORING DATA COLLECTED IN 2Q18 AND 3Q18.
8. THE TOTAL SUM OF TCA+ DETECTIONS PRESENT IN GROUNDWATER ARE INCLUDED IN THE ISOCONCENTRATION CONTOURS AND ARE DASHED WHERE INFERRED.
9. THE DATA TABLE SHOWS ALL GROUNDWATER CONTAMINANT DETECTIONS FOR TCA+. TCA+ SAMPLE RESULTS AT AND BELOW THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP) GROUND WATER QUALITY STANDARDS (GWQS) ARE SHOWN IN PARENTHESES. TCA+ SAMPLE RESULTS GREATER THAN THE NJDEP GWQS ARE SHOWN WITHOUT THE PARENTHESES. WELLS WITH SAMPLES THAT HAVE NO DETECTIONS OF TCA+ ARE MARKED "ND".
10. DURING THE 3Q 2018 SAMPLING EVENT, ALL WELLS WERE SAMPLED VIA PASSIVE DIFFUSION BAGS (PDBs) FOR VOLATILE ORGANIC COMPOUNDS (VOCs) BETWEEN SEPTEMBER 24, 2018 AND NOVEMBER 2, 2018. DURING IRM PERFORMANCE MONITORING EVENTS WELLS WERE SAMPLED VIA LOW-FLOW FOR VOCs BETWEEN AUGUST 2, 2018 AND OCTOBER 30, 2018. WESTBAY PORT SAMPLING (DW-65, DW-69, DW-70, AND DW-72) FOR VOCs WAS CONDUCTED BETWEEN SEPTEMBER 6, 2018 AND SEPTEMBER 11, 2018.
11. THE MOST RECENT HISTORICAL DATA WERE USED FOR WELLS THAT WERE NOT SAMPLED DURING THE CURRENT REPORTING PERIOD TO INTERPOLATE TCA+ CONTOURS. THESE DATA ARE SHOWN IN THE GRAY DATA TABLE.
12. IN SOME CASES, ADJACENT WELLS SCREENED AT DIFFERENT DEPTH INTERVALS HAVE CONCENTRATIONS THAT DIFFER BY MORE THAN AN ORDER OF MAGNITUDE. IN THESE CASES, THE WELL WITH THE HIGHEST CONCENTRATION WAS USED FOR CONTOURING PURPOSES.
13. GROUNDWATER QUALITY DATA OF OFF-SITE WELLS ON THE BRIAD PROPERTY (NORTH OF ROUTE 3), COLLECTED IN FEBRUARY 2016 AND BETWEEN APRIL 5 AND 9, 2018, WERE USED FOR CONTOURING THE EXTENT OF TOTAL TCA+ IN THIS AREA. REFER TO RANSOM RIR APRIL 2017 AND RANSOM RAR ADDENDUM JUNE 2018.
14. DELUXE WELLS LOCATED ON-SITE AND OFF-SITE WERE LAST SAMPLED BY ROCHE IN 2015 OR 2016.
15. SELECT WELLS SAMPLED DURING THE 3Q 2018 SAMPLING EVENT AND THE IRM PERFORMANCE MONITORING EVENTS WERE DECOMMISSIONED SUBSEQUENT TO SAMPLING.
16. SURVEYED PHYSICAL FEATURES MAY NOT ALIGN WITH AERIAL PHOTOGRAPHY DUE TO THE OBLIQUENESS OF THE AERIAL PHOTOGRAPH RELATIVE TO VERTICAL.

DATA FROM CURRENT REPORTING PERIOD - 3Q 2018

Well ID	Sample Date	1,1,1-TCA	1,1-DCE	1,1-DCA	Total TCA+
DW-69-70-S2	9/10/2018	ND	ND	ND	ND
DW-69-86-S2	9/10/2018	ND	ND	ND	ND
DW-69-104-S3	9/10/2018	ND	ND	ND	ND
DW-69-114-S3	9/10/2018	ND	ND	ND	ND
DW-69-134-S3	9/10/2018	ND	ND	ND	ND
DW-70-53-S2	9/11/2018	ND	(0.54)	ND	0.54
DW-70-72-S3	9/11/2018	(0.6)	8.6	(5.9)	15.10
DW-70-83-S3	9/11/2018	(1.2)	23	(13)	37.20
DW-70-94-S3	9/11/2018	(0.32)	10	(7.7)	18.02
DW-70-114-S3	9/11/2018	(1.8)	80	(39)	120.8
MW-27	9/25/2018	ND	(0.58)	(0.28)	0.86
MW-43	9/26/2018	ND	ND	ND	ND
MW-44	9/26/2018	ND	ND	ND	ND
MW-44B	9/26/2018	ND	ND	ND	ND
MW-206B	9/27/2018	ND	ND	ND	ND
MW-206C	9/27/2018	ND	ND	ND	ND
MW-213B	9/25/2018	ND	ND	ND	ND
MW-213C	9/25/2018	ND	ND	ND	ND
MW-446A	9/25/2018	ND	(0.4)	ND	0.40
MW-472A	9/26/2018	ND	ND	ND	ND
MW-473A	9/26/2018	ND	ND	ND	ND
MW-474A	9/26/2018	ND	ND	ND	ND
MW-475A	9/26/2018	ND	ND	ND	ND
MW-476A	9/25/2018	ND	ND	ND	ND
MW-479A	9/26/2018	ND	ND	ND	ND
MW-480A	9/26/2018	ND	ND	ND	ND
MW-485A	9/26/2018	ND	ND	ND	ND
MW-486A	9/26/2018	ND	ND	ND	ND
MW-487A	9/26/2018	ND	ND	ND	ND
MW-487S	9/26/2018	ND	ND	ND	ND
MW-488A	9/26/2018	ND	ND	ND	ND
MW-489A	9/26/2018	ND	ND	ND	ND
MW-496A	9/26/2018	ND	(0.2)	ND	0.20
MW-496S	9/26/2018	ND	ND	ND	ND
MW-501B	9/26/2018	ND	ND	ND	ND

DATA FROM PREVIOUS SAMPLING EVENTS - 1Q 2015 THROUGH 2Q 2018

Well ID	Sample Date	1,1,1-TCA	1,1- DCE	1,1-DCA	Total TCA+
138RI-MW1	4/11/2017	ND	ND	ND	ND
26RI-MW1	1/20/2016	ND	ND	ND	ND
Br-MW-1	4/6/2018	(2.9)	ND	(10)	12.90
Br-MW-2	4/6/2018	(17)	(1.6)	(29)	47.60
Br-MW-3	4/6/2018	(13)	2.9	(26)	41.90
Br-MW-7	4/6/2018	ND	ND	ND	ND
Br-MW-9	4/6/2018	(10)	ND	(3.8)	13.80
Br-MW-11	4/6/2018	ND	ND	ND	ND
Br-MW-12-1	4/5/2018	ND	ND	(7.3)	7.30
Br-MW-12-2	4/5/2018	(3.2)	(1.7)	(23)	27.90
Br-MW-12-3	4/5/2018	ND	ND	(5)	5.00
Br-MW-12-4	4/5/2018	(3.1)	2.7	(23)	28.80
Br-MW-12-5	4/6/2018	ND	(1.7)	(6.6)	8.30
Br-MW-13-1	4/5/2018	(1.4)	(2)	(5.7)	9.10
Br-MW-13-2	4/5/2018	190	480	960	1630
Br-MW-13-3	4/5/2018	130	590	940	1660
Br-MW-13-4	4/5/2018	140	770	1700	2610
Br-MW-15-2	4/5/2018	ND	ND	ND	ND
Br-MW-15-3	4/5/2018	ND	ND	ND	ND
Br-MW-15-4	4/5/2018	ND	ND	ND	ND
Br-MW-15-5	4/5/2018	ND	2.3	(2.5)	4.80
Br-MW-15-6	4/5/2018	ND	12	(6.5)	18.50
Br-MW-15-7	4/6/2018	ND	3.7	(3.3)	7.00
MW-4A	9/28/2015	ND	ND	ND	ND
MW-5AW	6/24/2016	(26.3)	13.4	(1.3)	41.00
MW-6W	7/22/2015	ND	ND	ND	ND
MW-7W	6/23/2016	ND	(1)	ND	1.00
MW-9W	6/23/2016	(0.79)	ND	ND	0.79
MW-12W	6/23/2016	ND	ND	ND	ND
MW-16	9/29/2015	ND	ND	ND	ND
MW-16AW	6/22/2016	ND	(0.97)	ND	0.97
MW-19W	6/23/2016	(0.66)	(0.77)	ND	1.43
MW-28	1/20/2016	ND	ND	ND	ND
MW-30W	7/21/2015	ND	ND	ND	ND
MW-32W	7/23/2015	(0.72)	1.5	(0.69)	2.91
MW-38W	6/24/2016	(2.2)	2.6	(0.51)	5.31
MW-45	6/19/2015	ND	ND	ND	ND
MW-58	6/18/2015	ND	ND	ND	ND
MW-223B	6/8/2015	(0.29)	1.2	ND	1.49
MW-223C	6/19/2015	ND	ND	ND	ND
MW-229B	9/24/2015	ND	ND	ND	ND
MW-229C	9/24/2015	ND	ND	ND	ND
MW-230B	3/27/2018	ND	ND	ND	ND
MW-230C	3/27/2018	(19)	85	100	204.0
MW-259B	6/11/2015	ND	ND	ND	ND
MW-266A	9/2/2015	(2.5)	22.2	(11.1)	35.80
MW-267A	6/10/2015	ND	ND	ND	ND
MW-267B	6/8/2015	ND	ND	ND	ND
MW-268B	3/26/2018	ND	ND	ND	ND
MW-268C	3/26/2018	ND	ND	ND	ND

Well ID	Sample Date	1,1,1-TCA	1,1- DCE	1,1-DCA	Total TCA+
MW-273B	9/29/2015	ND	ND	ND	ND
MW-273C	9/29/2015	ND	(0.53)	ND	0.53
MW-274B	3/27/2018	ND	(0.38)	ND	0.38
MW-274C	3/27/2018	ND	ND	ND	ND
MW-280B	6/8/2015	ND	(0.67)	ND	0.67
MW-280C	6/17/2015	ND	ND	ND	ND

PROJECT:
HOFFMANN-LA ROCHE INC. SITE
NUTLEY, NEW JERSEY

TITLE:
TCA+ IN GROUNDWATER HGU 1 - 3Q 2018

DATE: JANUARY 2020 | PROJ. NO.: 198233

FIGURE 19

TRC
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