N

LEGEND

- HOFFMANN-LA ROCHE INC. SITE PROPERTY BOUNDARY
- INVESTIGATIVE AREAS
- OFF-SITE PROPERTY BOUNDARY
- DEMOLISHED BUILDING
- CURRENT BUILDING
- RAILROAD
- ROADWAY
- 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

OVERBURDEN WELL LOCATIONS

- MW-341A ND — WELL SAMPLED 3Q 2017 SEMI-ANNUAL & IRM PROGRAMS
- MW-154R (3/2017) ND — WELL SAMPLED DURING PREVIOUS SAMPLING EVENTS - 1Q 2015 THROUGH 2Q 2017 (DATA USED FOR CONTOURING)
- MW-60N — WELL SAMPLED PRIOR TO 1Q 2015 (DATA NOT SHOWN)
- MW-23 ND — DECOMMISSIONED WELL THROUGH 3Q 2017

1,4-DIOXANE ISOCONCENTRATION CONTOURS

- > 0.4 AND ≤1 PPB
- > 1 AND ≤10 PPB
- > 10 AND ≤100 PPB

1,4-DIOXANE DATA PRESENTATION

Data from Current Reporting Period - 3Q 2017

MW-309A 2.6 — Well ID and 1,4-dioxane concentration above the GWQS are shown in red.

MW-341A ND — Well ID and 1,4-dioxane concentration at or below the GWQS are shown in black.

Data From Previous Sampling Events

MW-154R (3/2017) ND — The most recent historical data were used for some wells not sampled during the current reporting period to interpolate 1,4-dioxane contours. Well ID, sample date, and 1,4-dioxane concentration are shown in gray.

COMPOUND	GWQS (ppb)
1,4-Dioxane	0.4

NOTES:

1. HGU = HYDROGEOLOGIC UNIT.
2. THIS FIGURE DEPICTS THE 1,4-DIOXANE GROUNDWATER QUALITY DATA WITHIN HGUs, AS DEFINED IN THE JANUARY 2018 CONCEPTUAL SITE MODEL (CSM) REPORT.
3. 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 OVERBURDEN) FROM WEST TO EAST 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.
4. ALL CONCENTRATIONS ARE IN PARTS PER BILLION (PPB).
5. THE REPORTING LIMIT FOR 1,4-DIOXANE IS 0.2 PPB.
6. IN JANUARY 2018, THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP) PROMULGATED THE GWQS FOR 1,4-DIOXANE AS 0.4 PPB (PREVIOUSLY AN INTERIM SPECIFIC GROUND WATER QUALITY CRITERION [ISCGWQC]).
7. THE MOST RECENT HISTORICAL DATA WERE USED FOR WELLS THAT WERE NOT SAMPLED DURING THE CURRENT REPORTING PERIOD TO INTERPOLATE 1,4-DIOXANE CONTOURS.
8. ND = 1,4-DIOXANE NOT DETECTED ABOVE METHOD DETECTION LIMIT (MDL).
9. 1,4-DIOXANE ISOCONCENTRATION CONTOURS ARE SHOWN DASHED WHERE INFERRED.
10. THE DATA SUMMARIZED ON THIS FIGURE INCLUDE THE SITE-WIDE SEMI-ANNUAL SAMPLING EVENT CONDUCTED IN 3Q2017 AND INTERIM REMEDIAL MEASURES (IRM) PERFORMANCE MONITORING DATA.
11. DURING THE 3Q 2017 SAMPLING EVENT, ALL WELLS WERE SAMPLED VIA RIGID POROUS POLYETHYLENE SAMPLER (RPPS) FOR 1,4-DIOXANE BETWEEN OCTOBER 17, 2017 AND NOVEMBER 1, 2017. DURING IRM PERFORMANCE MONITORING EVENTS WELLS WERE SAMPLED VIA LOW-FLOW FOR 1,4-DIOXANE BETWEEN AUGUST 14, 2017 AND NOVEMBER 7, 2017.
12. GROUNDWATER QUALITY DATA OF OFF-SITE WELLS ON THE BRIAD PROPERTY (NORTH OF ROUTE 3), COLLECTED BETWEEN JANUARY AND DECEMBER 2016, WERE CONSIDERED FOR CONTOURING THE EXTENT OF TOTAL 1,4-DIOXANE IN THIS AREA. 1,4-DIOXANE CONCENTRATIONS REPORTED AS "ND" WERE NOT INCLUDED ON THIS FIGURE DUE TO ELEVATED LABORATORY MDLs, ABOVE THE 0.4 PPB GWQS. REFER TO RANSOM RIR APRIL 2017.
13. RECENT SAMPLES COLLECTED DURING IRM PROGRAMS (EXCEPT FOR THE IA-1/1A-4 DIOXANE IRM) WERE REPORTED WITH ELEVATED LABORATORY MDLs (ABOVE THE 0.4 PPB GWQS) FOR 1,4-DIOXANE. AS A RESULT, SELECT 1,4-DIOXANE DATA REPORTED AS "ND" WERE NOT INCLUDED ON THIS FIGURE. WHEN AVAILABLE, 3Q 2017 DATA WERE USED TO CONTOUR THE DIOXANE PLUMES. REFER TO TABLE 1-2A OF THIS REPORT FOR THE DATA THAT WERE NOT USED.
14. WELLS SHOWN AT THE OFF-SITE NOVA PROPERTY WERE LAST SAMPLED BY ROCHE IN 2015. DELUXE WELLS LOCATED ON-SITE AND OFF-SITE WERE LAST SAMPLED BY ROCHE IN 2015, 2016, OR 2017.
15. SELECT WELLS SAMPLED DURING THE 3Q 2017 SAMPLING EVENT AND THE IRM PERFORMANCE MONITORING EVENTS WERE DECOMMISSIONED SUBSEQUENT TO SAMPLING.

OVERBURDEN

0 150 300 Feet

PROJECT:	HOFFMANN-LA ROCHE INC. SITE NUTLEY, NEW JERSEY
TITLE:	1,4-DIOXANE IN GROUNDWATER OVERBURDEN - 3Q 2017
DATE: FEBRUARY 2019	PROJ. NO.: 198233
	FIGURE 42

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FILE NO.ROCHE Dioxane - Overburden.mxd

Coordinate System: NAD 1983 StatePlane New Jersey FIPS 2900 Feet (Foot US)
Map Rotation: 0

Plot Date: 2/21/2019, 12:50:08 PM by TZORN - LAYOUT: ANSI D (22"x34")
Path: \\newprov-fp1\Environmental\Drafting Files\ArcGIS Files\105009\GWPR2017 3Q\MAP DOCUMENTS\Dioxane\ROCHE Dioxane - Overburden.mxd