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September 2, 2014

New Jersey Department of Environmental Protection
Bureau of Case Management
Mail Code 401-05F
P.O. Box 420
Trenton, New Jersey 08625-0420

Attn: Donna Gaffigan, Case Manager

Re: *Investigative Area (IA)-12 – Soil Remedial Action Report*
Hoffmann-La Roche Inc.
340 Kingsland Street
Nutley, New Jersey
NJDEP SRP P.I. No. 009949

Dear Ms. Gaffigan:

On behalf of Hoffmann-La Roche Inc. (Roche), TRC Environmental Corporation (TRC) has prepared the attached *Soil Remedial Action Report* (RAR) for Investigative Area 12 (IA-12) at the above-referenced site. This RAR details the soil remedial activities conducted in IA-12 that were proposed in TRC/Roche's April 1, 2014 IA-12 Remedial Action Workplan (RAW), and addresses the comments provided in the New Jersey Department of Environmental Protection's (NJDEP's) July 3, 2014 RAW approval letter.

Ms. Rebecca Hollender of TRC is the NJDEP Licensed Site Remediation Professional (LSRP) for IA-12.

If you have any questions or need additional information, please contact me at 973-564-6006, ext. 260 or rhollender@trcsolutions.com.

Very truly yours,

TRC ENVIRONMENTAL CORPORATION

Rebecca K. Hollender, CPG, LSRP
Principal Consultant
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c: Greg Cierpial, Hoffmann-La Roche Inc.
Chandra Patel, Hoffmann-La Roche Inc.

Nutley Site Remediation
Project No. S153.29215

Investigative Area IA-12 – Soil Remedial Action Report

NJDEP PI ID #009949

Date: September 2, 2014



Prepared By:

Date

TRC Technical:	Kristen Rillen	7/23/2014
TRC LSRP:	Rebecca Hollender	7/31/2014

Reviewed by:

Date

TRC Management:	Dawn Pompeo	8/4/2014
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TRC Environmental Corporation
41 Spring Street
New Providence, NJ 07974



Approved By:

Signature

Date

Roche Technical: T.O'Meara	<i>Approved via electronic correspondence</i>	8/26//2014
Roche Project Manager: G. Cierpial	<i>Approved via electronic correspondence</i>	8/26//2014

Hoffmann-La Roche Inc.
340 Kingsland Street
Nutley, New Jersey 07110-1199

Investigative Area IA-12 – Soil Remedial Action Report

Date: September 2, 2014

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SOIL REMEDIAL ACTION REPORT – INVESTIGATIVE AREA IA-12
HOFFMANN-LA ROCHE INC.
340 KINGSLAND STREET
BLOCK (IN CLIFTON) 80.02, LOTS 1, 3, 4
NUTLEY, ESSEX COUNTY, NEW JERSEY

1.0 INTRODUCTION

On behalf of Hoffmann-La Roche Inc., (Roche), TRC Environmental Corporation (TRC) has prepared the following *Soil Remedial Action Report – Investigative Area No. 12 (IA-12)* to summarize the remedial actions conducted for soil in IA-12, located in the northern portion of the Hoffman-La Roche (Roche) facility at 340 Kingsland Street, Essex County, Nutley, New Jersey. A map showing the location of the Roche facility is provided on a United States Geologic Survey (USGS) 7.5-minute quadrangle in Figure 1 (Site Location Map); Figure 2 (Site Plan) shows the location of IA-12 within the Roche facility. The Roche facility is in both Nutley and Clifton; IA-12 falls entirely within Clifton, New Jersey.

The Roche facility is a RCRA corrective action site. Under the EPA/NJDEP Coordination Agreement, the Roche facility is an “NJDEP lead” site. Therefore, investigation and remediation is being conducted under the NJDEP's *Technical Requirements for Site Remediation (TRSR)* (N.J.A.C. 7:26E), and is also in compliance with federal RCRA corrective action requirements.

This *Remedial Action Report (RAR)* was prepared in accordance with the requirements outlined in the TRSR and associated NJDEP technical guidance documents. The purpose of the RAR is to document the performance of the remedial actions proposed in Roche/TRC's April 1, 2014 *Remedial Action Workplan (RAW)*. The RAW was approved by the NJDEP in a letter dated July 3, 2014. The RAR also provides responses to the NJDEP comments in the July 3rd letter.

Roche's April 2013 Enhanced Notification and Public Outreach Plan (approved by the NJDEP and USEPA), requires that thirty days (at a minimum) prior to the implementation of any new remedial actions, Roche will place advertisements in the daily and/or weekly newspapers and describe the remediation methods that may be implemented at the Roche Nutley Site. Roche complied with this requirement by placing an advertisement in the local papers on April 11, 2014. A copy of the public notification ad is included as Appendix A.

As summarized in the July 17, 2013 *Remedial Investigation Report - Investigative Area No. 12 (IA-12)* (IA-12 RIR), investigations in IA-12 were performed to characterize the following areas:

- Portions of AOC 116 (Storm Sewer East);
- Clifton Municipal Sewer;

- Fill Material;
- Geophysical Anomalies;
- Stone Yard; and,
- VOCs in Ground Water.

A figure showing the areas investigated within the IA-12 boundary is included as Figure 2.

As described in the IA-12 RIR, only two locations were identified where constituent concentrations in soil exceeded the Residential Direct Contact Soil Remediation Standard (RDSCRS) and the Non-Residential Direct Contact Soil Remediation Standard (NRDCRS): an area near the Route 3 Gate 54 Entrance with arsenic and manganese exceedances (approximately 75 cubic yards); and an area near the First Avenue entrance to Parking Lot 902 with polycyclic aromatic hydrocarbons (PAH) and lead exceedances (approximately 35 cubic yards).

As proposed in the April 2014 RAW and discussed in this report, the impacted soils were excavated for off-site disposal at a properly licensed and approved facility, followed by placement of clean backfill and restoration of the pavement in the excavation areas.

This document is organized into the following six sections:

- Section 1.0 Introduction;
- Section 2.0 Site Information;
- Section 3.0 Investigation of Areas of Concern;
- Section 4.0 Technical Overview;
- Section 5.0 Remedial Action; and
- Section 6.0 References.

Supporting figures, tables and appendices are attached. Copies of the required NJDEP forms are included in Appendix B.

In addition, on April 1, 2014, the NJDEP provided comments on the IA-12 RIR; Roche provided responses on April 30, 2014, to which the NJDEP issued a RAW Approval letter on July 3, 2014, which included comments and a statement regarding former soil samples VD-SB-1, VD-SB-2 and VD-SB-3. This report addresses all the NJDEP comments.

2.0 SITE INFORMATION

2.1 Site Description

IA-12 occupies approximately 17 acres in the northern portion of the 120-acre Roche Site located at 340 Kingsland Street, Nutley, New Jersey. The Site is situated both within the City of Clifton, Passaic County and the Township of Nutley, Essex County, New Jersey. IA-12 is bordered to the west by the Norfolk Southern Railroad tracks, to the east by a residential neighborhood, to the south by the New Jersey American Water Right of Way and other Roche IAs, and New Jersey State Highway Route 3 is to the north. Existing conditions are shown on Figure 2.

The majority of the IA-12 surface area is covered by asphalt pavement. There are a few small permanent structures including the Route 3 Guard Shack (known as Building 54), and Buildings 108 and 108A, which are the pump houses for the potable water mains that enter the Site. Former Building 41, which was a warehouse, was formerly located around Building 108.

A detailed description of the ownership, development and operation history of the Roche Site is discussed in the NJDEP-approved Preliminary Assessment (PA)/RCRA Facility Assessment Report, dated May 1998 (TRC 1998).

2.2 Topography and Site Surroundings

A map showing the location of IA-12 within the Roche facility is provided on a United States Geologic Survey (USGS) 7.5-minute quadrangle as Figure 1.

In general, the surface grade in IA-12 slopes downward from east to west on the east side of IA-12, and downward from west to east on the west side with the low point being the center of IA-12 at the Valley Drain, which is the City of Clifton's storm sewer that eventually discharges into St. Paul's Brook, within Nutley's Nichols Park.

St. Paul's Brook ultimately discharges to the Passaic River (via the Third River). No wetlands are located on or adjacent to IA-12. The elevation of IA-12 ranges from 124 feet above mean sea level [ft. msl (NGVD 29)] in the middle of IA-12 near the Valley Drain to 138 ft. msl in the western portion of IA-12 and 158 ft. msl in the eastern portion of IA-12. Figure 3 provides a cross section of the topography along the northern edge of IA-12.

2.3 Geology

Based on numerous soil borings completed in the area, the overburden consists primarily of red-brown silt and sand, typical for the Roche site. An intermittent layer of peat and clay was encountered above bedrock.

The regional bedrock underlying the Roche Site and IA-12 is the Passaic Formation. This formation is composed primarily of reddish-brown shale and siltstone, with some localized

sandstone. A weathered zone is present throughout much of the Site in the upper portion of the bedrock.

Sandstone bedrock was encountered in shallow borings and test pits in IA-12, and is described in boring logs and monitoring well logs (Appendices B and C, respectively, of the RIR). The observed depth to weathered bedrock in IA-12 ranges from 13 to 15 feet below grade surface. Depth to competent bedrock ranges from about 20 to 40 feet below grade surface. A generalized geologic cross-section is included as Figure 3.

2.4 Hydrogeology

Ground water at the Site has been monitored with a site-wide monitoring well network to provide an understanding of the local hydrologic regime as it relates to regional ground water flow and water quality. The monitoring well network continues to grow as part of the site-wide ground water investigation, with over 650 monitoring wells and coreholes currently in the network.

The monitoring well network at the Site consists of a variety of wells including those screened in the overburden, across the bedrock/overburden interface, and within the bedrock. The site-specific hydrogeologic data indicate that ground water interconnectivity between the overburden material and the upper weathered portion of the bedrock is likely to be variable across the Site.

In IA-12, the water table is present near the overburden/weathered bedrock interface. The presence of ground water within the unconsolidated materials at IA-12 varies and appears primarily near the non-Roche storm sewer lines. Ground water flow in IA-12 is southeast in the western portion of the Site and southwest in the eastern portion of the site toward the Valley Drain. The hydraulic gradient is approximately 0.015 feet/foot.

There are no surface water features or wetlands present at IA-12.

2.5 Receptor Evaluation

The TRSR requires completion of a receptor evaluation (RE) which includes four components, Land Use, Ground Water, Vapor Intrusion and Ecological. Updates to the RE are required with certain remedial phase reports (e.g., with the RAR). Roche submitted an updated RE for the Roche Nutley facility on February 11, 2011 that included IA-12.

The following sections include updated RE information applicable to IA-12.

2.5.1 Receptor Evaluation – Land Use

IA-12 is located in a predominately commercial area. Route 3 borders IA-12 to the north; the rest of the Roche facility borders IA-12 to the south; and residences border IA-12 to the east. There are no schools, child care centers, parks or playgrounds within 200 feet of the IA-12

portion of the Roche Site. The land use/land cover map from the NJDEP's GIS database is included as Figure 4.

2.5.2 Receptor Evaluation – Ground Water

Due to the presence of ground water contamination at the Roche Site, a well search was originally conducted in 2001 and updated in 2009. The well search was updated again in 2013. Roche's remedial investigation for ground water is ongoing. Ground water quality is being addressed on a site-wide basis.

2.5.3 Receptor Evaluation – Vapor Intrusion

In December 2010, a Vapor Intrusion (VI) investigation was conducted by Langan Engineering at the Route 3 Guardhouse (Building 54). No compounds were detected above the NJDEP's vapor intrusion indoor air screening levels (IASLs) or soil gas screening levels (SGSLs). Based on these results, no further testing was proposed.

However, as requested in the NJDEP's July 3, 2014 comment letter, future ground water analytical data will be reviewed to determine if additional vapor intrusion investigation is necessary at Building 54.

2.5.4 Receptor Evaluation – Ecological

In accordance with the TRSR, an Ecological Evaluation was completed as part of the Receptor Evaluation for IA-12. Per the TRSR, an Ecological Evaluation includes a review of site conditions, site data and published information to identify 1) environmentally sensitive natural resources (ESNRs) on, adjacent to, or in the influence of the subject site, and 2) contaminants of potential ecological concern (COPECs) present on-site. The presence of potential migration pathways from areas of contamination to adjacent sensitive areas was also considered in this evaluation.

In addition, the NJDEP's GIS information was reviewed, including land use/land cover maps, federal and state wetland maps, and Landscape Project maps (Figures 4, 5 and 6, respectively). A site inspection was completed on November 12, 2012 by Rebecca Hollender, TRC LSRP, and no ESNRs were observed on or adjacent to IA-12. Review of the NJDEP GIS information indicated that there are no ESNRs present on or adjacent to IA-12. According to the New Jersey Heritage Program threatened and endangered species database search information, no threatened or endangered species or habitat are located on or adjacent to the site.

The area surrounding the IA-12 parcel is fully developed. The site is located in a residential and commercial portion of Clifton, New Jersey; IA-12 is covered primarily by impervious paved parking areas, buildings and macadam paths and hardscaping. Based on the RE, no further ecological evaluation is warranted for IA-12.

2.6 Area of Concern (AOC) Summary

In October 1992, Roche entered into a Memorandum of Agreement (MOA) with the NJDEP for site remediation at the Nutley facility. In 1996, the NJDEP requested that Roche conduct a formal review (Preliminary Assessment) of the Roche Nutley facility to identify all of the AOCs at the property.

During 1998, TRC submitted the *Preliminary Assessment/RCRA Facility Assessment Report* (PA/RFA) to the NJDEP for review. The NJDEP unconditionally approved the report in a letter dated November 9, 1998. The PA/RFA initially identified AOCs based on written historical documentation, verifiable anecdotal evidence, and visual inspection of the entire facility. To satisfy RFA requirements, each AOC was subsequently assessed for its exposure potential and pollutant migration pathways. During the initial phases of investigation, several IAs were designated at the Roche facility. Later, the IA assignments were modified and an updated total of 15 IAs were established to include all of the AOCs at the Site, allowing the numerous AOCs to be organized into investigative areas.

The following areas were addressed in IA-12 during the RI.

- Portion of AOC 116 (Storm Sewer East);
- Clifton Municipal Sewer;
- Fill Material;
- Geophysical Anomalies;
- Stone Yard; and,
- VOCs in Ground Water

A discussion of the investigations in these AOCs is included in Section 3.0.

2.7 Pertinent Site Documents

Document	Date
PA/RCRA Facility Assessment Report	May 1998
Remediation Road Map for the Roche Facility	September 2012
Quality Assurance Project Plan prepared by TRC	November 20, 2012
IA-12 -Remedial Investigation Workplan	November 21, 2012
IA-12 – RIWP – Supplement 1	November 30, 2012
IA-12 – RIWP – Supplement 2	December 12, 2012
NJDEP Final Comments IA-12 RIWP	December 27, 2012
Response to NJDEP Final Comments on IA-12 RIWP	January 8, 2013
IA-12 – RIWP – Supplement 3	January 11, 2013

Document	Date
IA-12 Remedial Investigation Report	July 17, 2013
NJDEP Comments IA-12 RIR	April 1, 2014
IA-12 Remedial Action Workplan	April 1, 2014
Response to NJDEP Comments on IA-12 RIR	April 30, 2014
NJDEP RIR Comments Letter	July 3, 2014
NJDEP IA-12 RAW Approval Letter with Comments	July 3, 2014

2.8 Regulatory Timeframes

As indicated in the NJDEP's June 7, 2013 letter, the remedial investigation for soil at the Roche site has been completed in compliance with the Technical Requirements for Site Remediation and other applicable requirements. Therefore, the NJDEP has approved the Soil Remedial Investigation and the site is in compliance with both regulatory and mandatory timeframes.

2.9 Contact Information

Contact	Address	Name/Telephone
Site Owner / Operator	Hoffmann-La Roche Inc. 340 Kingsland Street Nutley, NJ 07110	Tom Lyon 973-562-2210
Licensed Site Remediation Professional (LSRP)	TRC Environmental Corporation 41 Spring Street New Providence, NJ 07974	Rebecca K. Hollender LSRP No. 585022 908-988-1710

3.0 INVESTIGATION OF AREAS OF CONCERN

This section provides a brief summary of previous investigations conducted at IA-12 between November 2012 and April 2013. Additional details and results were presented in the July 17, 2013, IA-12 RIR (TRC 2013a).

The following areas are associated with IA-12:

- Portion of AOC 116 (Storm Sewer East);
- Clifton Municipal Sewer;
- Fill Material;
- Geophysical Anomalies;
- Stone Yard; and,
- VOCs in Ground Water.

3.1 AOC 116 – Storm Sewer East Soil Boring Investigation

The portion of AOC 116 within IA-12 consists of approximately 1,360 linear feet of sub-grade storm sewer pipes, of which approximately 880 feet were previously investigated during the 2004 IA-8 Site Investigation. The remaining lengths of sub-surface piping were addressed during the IA-12 RI. In addition, approximately 270 feet of storm sewer piping located adjacent to eastbound Route 3, in the New Jersey Department of Transportation (NJDOT) right-of-way, were investigated during the RI.

A total of 61 soil borings were advanced along the storm sewer system; 28 of which were located in the NJDOT right-of-way just north of the Site. The borings were spaced approximately 15 feet apart and were within 2 feet of the pipe. Each boring was extended to the top of weathered bedrock, about 13 feet below grade surface. The soil from each boring was screened visually and with a photoionization detector (PID). Soil samples were collected for volatile organic compound (VOC) analyses at the 6-inch intervals exhibiting PID readings.

Soil samples were also collected at a rate of approximately one sample per 50 linear feet from the 6-inch depth interval below the invert of the pipe. These samples were analyzed for Target Compound List/Target Analyte List (TCL/TAL), hexavalent chromium, and pH. The locations of these borings and the analytical results are presented on Figure 7.

Three samples, B-NS-3, B-NS-8, and B-NS-50, had exceedances of the applicable NJDEP cleanup criteria. Sample B-NS-3, which was located in the DOT right-of-way, exceeded the remediation standard for naphthalene. Since this sample was collected off-site and the exceedance was not related to Roche activities, no delineation samples were collected.

B-NS-8 exceeded the remediation standard for arsenic and manganese; and B-NS-50 exceeded the remediation standard for benzo(a)pyrene and lead. The exceedances at B-NS-8 and B-NS-50 were delineated.

At sample B-NS-8, horizontal and vertical delineation samples were collected for arsenic and manganese analysis; samples B-NS-8(1) through B-NS-8(4) were collected approximately 10 feet from the B-NS-8 location and from the same depth as B-NS-8; vertical delineation samples were also collected at the B-NS-8 location. Arsenic was not detected above the applicable remediation standard in any of the delineation samples except B-NS-8(4), which is located off-site and just north of the Roche property and contained a higher arsenic concentration than original sample B-NS-8. Manganese was detected above the applicable remediation standard in samples collected up to 13.0 feet bgs. A final vertical delineation sample was collected from 13.25 to 13.75 and manganese was not detected, therefore vertical delineation of manganese at B-NS-8 was achieved.

At B-NS-50, horizontal and vertical delineation samples were collected for benzo(a)pyrene and lead analysis; samples B-NS-50(1) through B-NS-50(4) were collected approximately 10 feet from the B-NS-50 location; and a vertical delineation sample was also collected at the B-NS-50 location. Benzo(a)pyrene and lead were not detected above the applicable remediation standard in any of the delineation samples.

Ground water characterization samples were collected in the vicinity of the storm sewers by placing temporary wells at boring locations where sufficient amounts of ground water was present during drilling activities. Nineteen temporary wells were installed and neither light non-aqueous phase liquid (LNAPL) nor dense non-aqueous phase liquid (DNAPL) was observed in the temporary wells. Two of the temporary wells located in the NJDOT right-of-way contained benzene concentrations above the GWQS; VOCs were not detected in the on-site temporary wells (Figure 8).

The IA-12 RIR concluded that the storm sewer lines do not appear to be the source of the ground water contamination detected in wells MW-60 and MW-80, which contain elevated levels of PCE. The limited contamination (arsenic, manganese, lead and PAHs) detected in the two on-site borings (B-NS-8 and B-NS-50) has been horizontally and vertically delineated. The NJDOT has been notified of the contaminants detected in the soil samples collected in the Route 3 right-of-way.

3.2 Clifton Municipal Sewer Line

Approximately 235 linear feet of the City of Clifton Municipal Sewer pipeline crosses IA-12. This 15-inch-diameter vitrified clay municipal sanitary sewer serves industrial/commercial facilities north of Roche and Route 3. The Clifton Municipal Sewer pipe invert is approximately 13 feet below grade surface. The sanitary sewer pipe is located just east of well MW-60 (see Figure 2). The sanitary sewer was investigated as a possible source of the ground water contamination detected in this well.

The investigation of the Clifton sewer line included the sampling of soil borings near the sewer, videotaping the interior of the Clifton Municipal sewer line in the vicinity of the Route 3 gate,

collecting a “scrape” sample from within the manhole near the Route 3 gate (MHS-1); and excavating and replacing the northernmost 25 feet of the sanitary sewer line as it enters the Roche Site from the north.

Eleven soil borings were installed adjacent to the sanitary sewer. The borings were spaced approximately every 15 feet and located within about 2 feet of the sewer pipe. The soil from each boring was screened visually and using a PID. Soil samples were collected for VOC analyses at the 6-inch intervals exhibiting the highest PID readings. Samples were also collected at a rate of approximately one sample per 50 linear feet from the 6-inch depth interval below the invert of the pipe. These samples were analyzed for TCL/TAL, hexavalent chromium, and pH.

Samples B-NS-27 and B-NS-69 contained concentrations of mercury and beryllium, respectively, that exceeded the Default Impact to Ground Water Soil Screening Level (DIGWSSL); however, neither of these metals exceeded their respective IA-12-Specific Impact to Ground Water Soil Remediation Standards (IGWSRS) (refer to Section 4.3 in this RAW). The locations of these borings and the analytical results are presented on Figure 7.

Ground water characterization samples were collected in the vicinity of the sanitary sewer by placing temporary wells at boring locations where sufficient amounts of ground water was present during drilling activities. Three temporary wells were installed and VOCs were not detected (Figure 8).

To determine if any residual contamination was present inside the Clifton Municipal sewer pipe, a “scrape” sample was collected from within the pipe at the base of manhole MHS-1, which is located in the NJDOT right-of-way for Route 3. A sample of water from manhole MHS-1 was also collected. Low levels of PAHs and some metals were detected in the samples.

The video inspection of the City of Clifton Municipal sewer line indicated the presence of cracks at approximately 13.4 feet, 18 feet and 38.5 feet from manhole MHS-1, with a 45 percent collapse of the line approximately 111 feet south of manhole MHS-1 (across from well MW-80).

Following the video inspection, permission was granted by the City of Clifton to expose the sanitary line and replace a 25-foot section of the sewer extending from MHS-1 to 25 feet to the south. Once the sewer was exposed, soil samples were collected from directly beneath each bell joint and submitted to the laboratory for TAL/TCL, Extractable Petroleum Hydrocarbon Compounds (EPH), hexavalent chromium, and pH analysis.

Tetrachloroethene (PCE) and trichloroethene (TCE) were detected in these soil samples at concentrations above the DIGWSSLs, but below the Residential Direct Contact Soil Remediation Standard (RDCSRS) and NRDCSRS, with the exception of sample MHS-1-15/13.5, which contained PCE at a concentration slightly above its RDCSRS of 2 ppm, and cis-1,2-dichloroethene and vinyl chloride at concentrations of 0.8 ppm and 0.01 ppm, above their respective DIGWSSLs, but below the IA-12-specific IGWSRS.

The RIR concluded that PCE in ground water detected in the vicinity of the sanitary sewer was due to discharges from the sanitary sewer line from off-site, “upstream” and upgradient sources.

Additional pre-design investigation (PDI) has been conducted in IA-12 to address elevated concentrations of chlorinated volatile organic compounds (CVOCs) in ground water near the Clifton Municipal Sewer, with a primary focus on hot-spots in the vicinity of monitoring wells MW-60 and MW-80/MW-60E. The purpose of the IA-12 PDI work was to collect hydrogeological, biogeochemical, and ground water quality information to support groundwater remedial selection and design. The results of the IA-12 ground water PDI will be included in the annual ground water progress report.

3.3 Fill Material Characterization

Based on a review of historic aerial photographs and data from prior environmental investigations, fill material was suspected to have been placed in the area to raise the topographic grade within the vicinity of the Route 3 Main Gate, specifically east of the main entrance where a former surface water body traversed the IA-12 parcel.

Soil borings B-NS-11, B-NS-23, B-NS-50, and B-NS-68 were located within the potential fill material areas. In addition to visually observing the nature of material in these borings, samples were collected for laboratory analysis. There was no evidence of impact, i.e., staining or elevated PID readings and no evidence of non-indigenous fill, such as cinders, ash, concrete or brick, so the samples were collected in the upper 5 feet of the soil column.

As discussed above, PAHs were detected above the NRDCSRS, RDCSRS and DIGWSSL in sample B-NS-50 (Figure 7), and the extent of PAHs was horizontally and vertically delineated. No water was observed in these borings; therefore, temporary wells were not installed.

The RIR concluded that impacted fill material, other than a small area at B-NS-50, did not appear to be present in IA-12.

3.4 Geophysical Anomalies and Test Pit Investigation

Several anomalies along the fence line at the northern edge of IA-12 were identified during a prior surface geophysical investigation: three minor anomalies were identified along the western fence line and a large anomaly was identified along the eastern fence line near well MW-60. Test pits were dug to investigate the anomalies. The locations of these test pits and sampling locations are shown on Figure 7.

The test pits along the western fence line encountered a drainage line associated with an old catch basin at approximately 3 feet below surface. The material in the catch basin was screened with a PID; no PID readings were detected. A sample of the material in the catch basin was collected, designated as CB-Unknown, and submitted for laboratory analyses. VOCs were not detected; however, low levels of several pesticides were detected, as well as some metals.

Minor metal objects were identified in the three test pits along the western fence line, such as a small bolt, a beer can, a hub cap, a battery for a phone and a piece of a steel bar used to reinforce concrete (rebar). One sample, designated IA-12-Testpit1 was collected from 3 feet below grade surface for TCL/TAL analyses. No compounds were detected at concentrations above the applicable standards.

The anomaly along the eastern fence line was directly above the Clifton Municipal Sewer Line. A test pit was dug that extended to 6 feet below surface; no evidence of the cause for the anomalous reading was identified and no evidence of contamination was observed.

A test pit was also dug immediately adjacent to well MW-60. The test pit was extended to the weathered bedrock surface at 13 feet below surface. The soils were field-screened and no evidence of contamination was observed. Ground water was not encountered above the weathered bedrock surface.

The RIR concluded that the geophysical anomalies did not represent sources for the elevated VOCs detected in groundwater at wells MW-60 and MW-80.

3.5 Stone Yard Area

The Stone Yard is located at the western end of IA-12 as shown on Figure 2. The results from soil samples collected in the stone yard area in 2006 indicated several VOCs and metals were detected in sample SYSF-N from 1.3 to 1.8 feet below grade surface, specifically 1,1,1-trichloroethane (0.78 ppm), PCE (0.169 ppm), lead (126 ppm) and arsenic (19.8 ppm), above their respective DIGWSSLs; the arsenic concentration is slightly above the direct contact SRS of 19 ppm.

The IA-12 RIWP included a proposal to delineate the extent of contamination at the location of SYSF-N and to collect a ground water sample via temporary well if ground water was encountered. It was determined during the RI that the location of SYSF-N was within the right-of-way for two 6-foot-diameter New Jersey American Water lines. The owner of the piping system requested that no equipment or vehicles be allowed in the area due to concern that the pipe may fail because of its age thereby adversely affecting residential water supplies; therefore, no sampling was conducted in this area.

The RIR concluded that, since the concentration of arsenic in former sample SYSF-N is only marginally above the site remediation standards, it can be considered *de minimis*. Therefore, no further investigation or remedial action is warranted for this area.

The NJDEP agreed in the July 3, 2014 letter that no further investigation is warranted for soil in the area, but awaits the results of the ground water investigation performed nearby, which will be provided in the ground water RIR.

3.6 Soil VOC Source to Ground Water

Ground water data indicate significant concentrations of VOCs, specifically PCE and TCE, in monitoring wells MW-60 and MW-80 located within IA-12. A passive soil gas survey conducted in August 2012 in the vicinity of the monitoring wells identified several locations where PCE was detected in soil gas. PCE and TCE had also been detected above the DIGWSSLs in three soil borings at the VD-SB- 1, VD-SB-2 and VD-SB-3 locations that were sampled in May 2005. Soil in the VD-sample area was subsequently excavated during construction associated with the Valley Drain. These locations are shown on Figure 7.

Soil borings B-NS-56 through B-NS-59 were completed around well MW-60. Each boring was continuously advanced to the top of weathered bedrock encountered at approximately 13 feet below surface; soils were screened with a PID. The PID did not indicate the presence of VOCs. A soil sample was collected from B-NS-57 at 13 to 13.5 feet below grade surface and analyzed for PCE, TCE, cis-1,2- DCE and vinyl chloride; these compounds were not detected.

Soil borings B-NS-60 through B-NS-63 were advanced around former soil gas point S-NS-4 and soil boring B-NS-9 was advanced at former soil gas point S-NS-45 to evaluate a potential source in soil at the locations of the elevated soil gas results. Each boring was continuously advanced to the top of weathered bedrock encountered at approximately 13 feet below grade surface and the soils were screened with a PID. The PID did not indicate the presence of VOCs. Soil samples were collected from B-NS-61 and B-NS-63 at 13 to 13.5 feet below surface for PCE, TCE, cis-1,2-DCE and vinyl chloride analyses; these compounds were not detected in either boring.

Soil borings B-NS-99 through B-NS-112 were advanced in the grassy area west of wells MW-60 and MW-80, between the storm sewer and sanitary sewer lines. The soil borings were advanced to the top of bedrock; soils were continuously screened with a PID. Elevated PID readings were not detected; soil samples were collected at each boring from the 6-inch interval above bedrock for VOC analyses. VOCs were not detected above the SRS or IGWSSLs.

Ground water was not encountered in the borings. Therefore, temporary wells were not installed and ground water samples were not collected.

The RIR concluded that the soil investigation in IA-12 was both comprehensive and extensive. An on-site soil source for the elevated VOCs detected in ground water was not identified and no further soil investigation is warranted for IA-12. As discussed, the discharges from the sanitary sewer line from off-site, “upstream” and upgradient sources went directly into bedrock, as the sanitary sewer was placed directly on the bedrock surface.

With respect to former soil borings VD-SB-1, VD-SB-2 and VD-SB-3, in the April 1, 2014 comment letter, the NJDEP requested additional information regarding the sample depths and a discussion of the excavation of the Valley Drain culvert. The sample depths (6 to 9 feet below surface) were provided to the NJDEP in the April 30, 2014 Response to Comments; however, in

the July 3, 2014 letter, the NJDEP questioned whether the samples were collected near the water table. The NJDEP also indicated that if the former sample locations are within the proposed Groundwater Operable Unit 2 described in the *IA-12 Feasibility Study of Response Action for Groundwater* then no further investigation is necessary.

Based on the 30-foot anticipated radius of influence (ROI) of the ART wells proposed in IA-12, these sample locations are likely within the ROI. In addition, based on additional information regarding the 2006 culverting of the Valley Drain in which the excavation went down to bedrock, the soils at these sample locations were excavated.

With respect to the low levels of PCE and TCE detected in the samples, the source is likely discharges from the nearby leaky Clifton Municipal sewer, not an on-site source.

3.7 Ground Water Investigation

From November 2012 through April 2013, a ground water investigation was conducted in IA-12 that consisted of the installation of 24 temporary wells, 11 monitoring wells and the collection of 58 ground water samples. In addition, wells MW-201, MW-201A, MW-202 and MW-203 and the DW-7 well cluster were installed across Route 3, just north of IA-12, as part of the site-wide ground water investigation. Soil samples were collected from the boreholes during installation of the monitoring wells.

VOCs, specifically PCE, TCE and cis-1,2-dichloroethene were detected in ground water samples from several of the monitoring wells, including the upgradient, off-site wells. These VOCs were also detected in soil samples collected during installation of MW-60E at depths below the water table. These locations are shown on Figure 8.

All of the wells were gauged for DNAPL and LNAPL; no separate phase product was detected in any well installed or sampled during the RI.

The RIR concluded that the VOC plume is limited to the vicinity of the Clifton Municipal Sewer line, indicating that the source of the ground water contamination detected in wells MW-60 and MW-80 is likely due to discharges from the Clifton Municipal Sewer. In addition, the ground water sampling results from the wells installed north of IA-12 clearly indicate VOC ground water contamination is present immediately upgradient of the Roche site and migrating towards the Roche site. The NJDOT has been notified of the contamination in the samples collected in the NJDOT Right-of-way for Route 3.

Additional pre-design investigation (PDI) has been conducted in IA-12 to address elevated concentrations of CVOCs in ground water near the Clifton Municipal Sewer, with a primary focus on hot-spots in the vicinity of monitoring wells MW-60 and MW-80/MW-60E. The purpose of the IA-12 groundwater PDI work is to collect hydrogeological, biogeochemical, and groundwater quality information to support groundwater remedial selection and design. The

results of the IA-12 ground water PDI will be reported in the annual ground water progress report.

4.0 TECHNICAL OVERVIEW

This section summarizes previous remedial measures in IA-12 and the areas proposed for additional remedial measures based on the RI.

4.1 Prior Interim Remedial Measures for Soil

As discussed in Section 3.2, the video inspection of the City of Clifton Municipal sewer located at IA-12 showed several cracks in the sewer pipe. Permission was granted by the City of Clifton to expose the sanitary line and replace a 25-foot section of the sewer extending from MHS-1 to 25 feet to the south, which is in the vicinity of MW-60. Once the sewer was exposed, soil samples were collected from directly beneath each bell joint. Tetrachloroethene (PCE) and trichloroethene (TCE) were detected in these soil samples at concentrations above the applicable criteria. The impacted soils were excavated, the 25-foot section of sanitary line was replaced and the excavation was backfilled with certified clean fill.

4.2 Description of Soil Remedial Area

Two locations (B-NS-8 and B-NS-50) were identified and delineated during the RI where constituent concentrations in the soil exceeded RDCSRS and NRDCSRS. These areas are proposed for remedial action.

The first area (B-NS-8) is located along the northern property line at the entrance to the site from Route 3. This location had arsenic and manganese above its NRDCSRS at a depth of 13.25 feet below surface. The approximate volume of soil within the affected area on-site was estimated to be about 77 cubic yards.

The second area (B-NS-50) is located near the Valley Drain and an on-site storm sewer catch basin. At this location, two PAH compounds were detected above the RDCSRS and NRDCSRS, and lead was detected above the IGWSRS at a depth of 3.5 to 4 feet below surface. The approximate volume of soil within the affected area was estimated to be 35 cubic yards.

4.3 Applicable Remedial Standards

The delineation of soil contamination at the Site is based on a comparison of the laboratory analytical results to the following NJDEP standards.

- Remediation Standards (NJAC7:26D; May 2012) - Residential and Non-Residential Direct Contact Soil Remediation Standards (RDCSRS/NRDCSRS);
- Impact to Ground Water Soil Remediation Standards Guidance (NJDEP-SRP Webpage; 2008/2009) – DIGWSSLs and IA-specific Impact to Ground Water Soil Remediation Standards (IGWSRS) (see below); and
- Protocol for Addressing Extractable Petroleum Hydrocarbons (EPH) Ver. 5.0, 8/9/2010

Ground water remediation standards are not included because ground water will be addressed on a site-wide basis.

In accordance with the NJDEP's *Frequently Asked Questions for the Impact to Ground Water Pathway in Soil Remediation Standards (Version 1.0, 1/27/2011)*, aluminum, iron, manganese, silver and zinc are not included in the impact to ground water (IGW) evaluation since they are not health-based, may be found as background contaminants, and are not known to exist at the investigative area due to a site-related discharge.

In addition, vanadium was previously detected in one sample at a concentration above the direct contact Soil Remediation Standard of 78 parts per million (ppm). However, an Alternative Remediation Standard (ARS) for vanadium of 390 ppm for residential direct contact and 5,700 ppm for non-residential direct contact was approved by the NJDEP in a letter dated January 2, 2014.

In addition, IA-12-specific IGWSRS were calculated as outlined in the IA-12 RIR using the Synthetic Precipitation Leaching Procedure (SPLP) method. However, due to updates to the applicable guidance documents and recent comments from the NJDEP since the submittal of the RIR, a re-evaluation of the impact to ground water pathway for contaminants in IA-12 was required.

Therefore, all compounds with concentrations greater than the NJDEP's Default Impact to Ground Water Soil Screening Level (DIGWSSL) in the unsaturated zone were re-evaluated. During the re-evaluation, only benzo(a)pyrene and mercury required additional field work to develop valid IA-specific IGWSRS; all other compounds have a valid IGWSRS that was developed during the RI or are below the DIGWSSL.

At the original B-NS-50 location, benzo(a)pyrene was detected at a concentration greater than the DIGWSSL. On January 24, 2014, three soil samples were collected at this location (one at the original exceedance and two supplemental samples collected within a foot of the original exceedance) in an attempt to collect sufficient benzo(a)pyrene data to populate the NJDEP's SPLP spreadsheet. However, all three samples had benzo(a)pyrene concentrations below the DIGWSSL; therefore an IA-12 IGWSRS was not developed for benzo(a)pyrene.

With respect to mercury, an IA-12-specific IGWSRS of 1.2 ppm was developed as discussed in the IA-12 RIR. However, some of the SPLP data used to develop this number relied on historic soil concentrations. Therefore, on January 24, 2014, soil samples were collected from locations UT-39-3, B-NS-50, B-NS-85, I-18A, I-8B-5, I-18 and B-NS-48 (Figure 7) for mercury and SPLP mercury analyses. A new IA-12-specific IGWSRS of 1.3 ppm was developed for mercury.

All new and existing mercury concentrations are below the IA-12 IGWSRS; therefore, no further evaluation for mercury is required in IA-12.

In the NJDEP's July 3, 2014 RAW Approval letter, the NJDEP stated that the revised Site-Specific IGWSRS for beryllium, lead and mercury are acceptable, but not thallium. However, the NJDEP stated that thallium was only detected in one sample (B-NS-8-12) above the DIGWSSL, was delineated to concentrations below the DIGWSSL and was removed as part of the remedial action for B-NS-8.

5.0 REMEDIAL ACTIONS

This section describes the soil remedial activities conducted in IA-12. The extent of the excavations was determined by the collection and analysis of in situ samples surrounding the target locations prior to the excavation. The delineation samples served as confirmation samples for the extent of excavations.

Based on the conclusions and recommendations of the RIR as summarized in Section 3.0 of this RAR, the following remedial actions were completed:

- Impacted soils in the vicinity of soil borings B-NS-8 (referred to in the field as Area N) and B-NS-50 (referred to in the field as Area S) were excavated to pre-delineated clean zones.

5.1 Evaluation of Remedial Options

An array of potential remedial options was considered for the impacted soil at IA-12. The options included excavation with various options for managing the excavated soil, capping the soil in place, *in situ* soil vapor extraction, biological, and chemical treatment. Because the constituents for which remediation is being conducted, arsenic and PAHs, are not conducive to vapor extraction or biological/chemical treatment, these options were rejected. Excavation and on-site disposal or capping options were rejected because the impacted soil exceeded impact to ground water screening levels.

5.2 Implemented Remedial Action Technology

The implemented Remedial Action Technology for IA-12 was excavation; the impacted soil went off-site to Keegan Landfill in Kearny, New Jersey. Certified- clean soil from Weldon Quarry in Lake Hopatcong, New Jersey was used to backfill the excavations to grade. The total volume of soil excavated at B-NS-8 was approximately 160 cubic yards; the total volume of soil excavated at B-NS-50 was 35 cubic yards.

5.3 Remedial Action Procedures

Prior to conducting the excavation activities, Osiris conducted a geophysical survey of the proposed excavation areas to establish the planned physical extents of the excavations and mark any underground utilities. Additionally, traffic controls were established, as the two excavation areas underlie the entrance road to the facility via New Jersey State Highway Route 3.

On June 3, 2014 Creamer of Hackensack, New Jersey began excavation work in IA-12. Prior to extending the excavations at B-NS-8 and B-NS-50, all underground utilities in the area had to be exposed and secured. In addition to utilities, a catch basin for the site storm sewer was located within the excavation area at B-NS-50: Creamer removed the 6” metal storm drain pipe by hand and continued with excavation activities.

Soil was excavated to the designated depth proposed in the IA-12 RAW. The B-NS-50 area was excavated to a total depth of 4.0 feet below grade and water was not encountered. When the excavation was complete, Osiris resurveyed the boundaries of the excavation, TRC approved the boundaries and depth, and Creamer began closing the excavation. The storm sewer pipe that was removed before the start of the excavation was replaced with new 6" PVC. The excavation area was then secured until the certified-clean fill material was brought to the site from Weldon Quarry. Clean fill certifications are included in Appendix D. Creamer concluded excavation activities by backfilling Area B-NS-50 with clean gravel.

On June 6, 2014, Creamer returned to IA-12 to begin excavating B-NS-8. During excavation activities, a metal pipe was encountered at approximately 10 feet bgs. The utility markout conducted by Osiris did not detect a pipe at this location because the depth was beyond the capabilities of the equipment. All work was suspended until the remaining buried piping could be located and traced. Creamer contacted New Jersey One-Call to try and ascertain additional information about the pipe. In the meantime, the excavation area was lined with plastic sheeting and backfilled with clean gravel.

On June 30, 2014, Creamer mobilized to the site to trace the piping in the B-NS-8 area. Excavation and tracing indicated that the pipe encountered was a stand-alone section of piping left over from previous ground-intrusive work. The piping was removed and the excavation was completed to a total depth of 14 feet. Ground water was not encountered during the excavation. The B-NS-8 excavation was backfilled with certified-clean fill material from Weldon Quarry; clean fill certifications are included in Appendix D.

On July 13, 2014, Osiris re-surveyed the boundaries of the excavation areas. The B-NS-8 area measured 305 square feet and the B-NS-50 excavation area measured 227 square feet.

A temporary staging area was established for excavated soils from both excavations. The staging area was protected from dispersion using hay bales and plastic sheeting. The excavated, stockpiled soils were transported to Keegan Landfill in Kearny, New Jersey for disposal (Appendix D).

5.4 Perimeter Air Monitoring Plan

5.4.1 VOC Monitoring, Response Levels, and Actions

Although VOCs were not detected in the vicinity of the areas being excavated, air monitoring for VOCs was conducted at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. Upwind concentrations were measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changed. The monitoring work was performed using a photoionization detector (PID) capable of measuring in the parts per million range. The equipment was calibrated daily and concentrations

were gathered using 15-minute running average concentrations, which were compared to the following action levels.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be halted.

At no time did PID readings exceed the trigger levels described above. All readings were recorded by Environmental Health Investigations (EHI) of Sparta, New Jersey and kept in a field log book; a copy of the air monitoring report is included in Appendix E.

5.4.2 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations were be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring was performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. Readings were recorded by EHI and kept in a field log book. The equipment was equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration was visually assessed during all work activities. A copy of the air monitoring data is included in Appendix E.

As indicated in the report, the real time monitoring data collected during the investigation indicated that total airborne particulate concentrations were less than one milligrams per cubic meter (1.0 mg/m³) and the total airborne particulate concentrations throughout the project were well below the airborne particulate action level of 5 mg/m³ established in the project HASP.

5.5 Required Permits

Based on the limited excavation area in IA-12 (approximately 125 cubic yards), no state or federal permits were required for the excavation activities; local permits were not required.

5.6 Fill Use Plan

Certified-clean material from Weldon Quarry was used to backfill the excavations.

5.7 Restoration Plan

The two excavation areas were returned to their original conditions. These areas were previously paved and were therefore repaved once excavation activities were completed. As noted in Section 5.3, the storm sewer grate and associated piping was removed and replaced.

5.8 Remedial Action Costs

The total remediation cost for the implementation of the remedial action in IA-12 was approximately \$82,000.

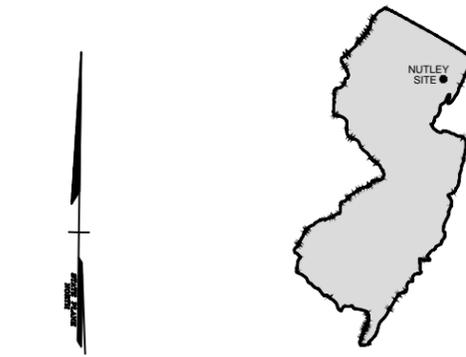
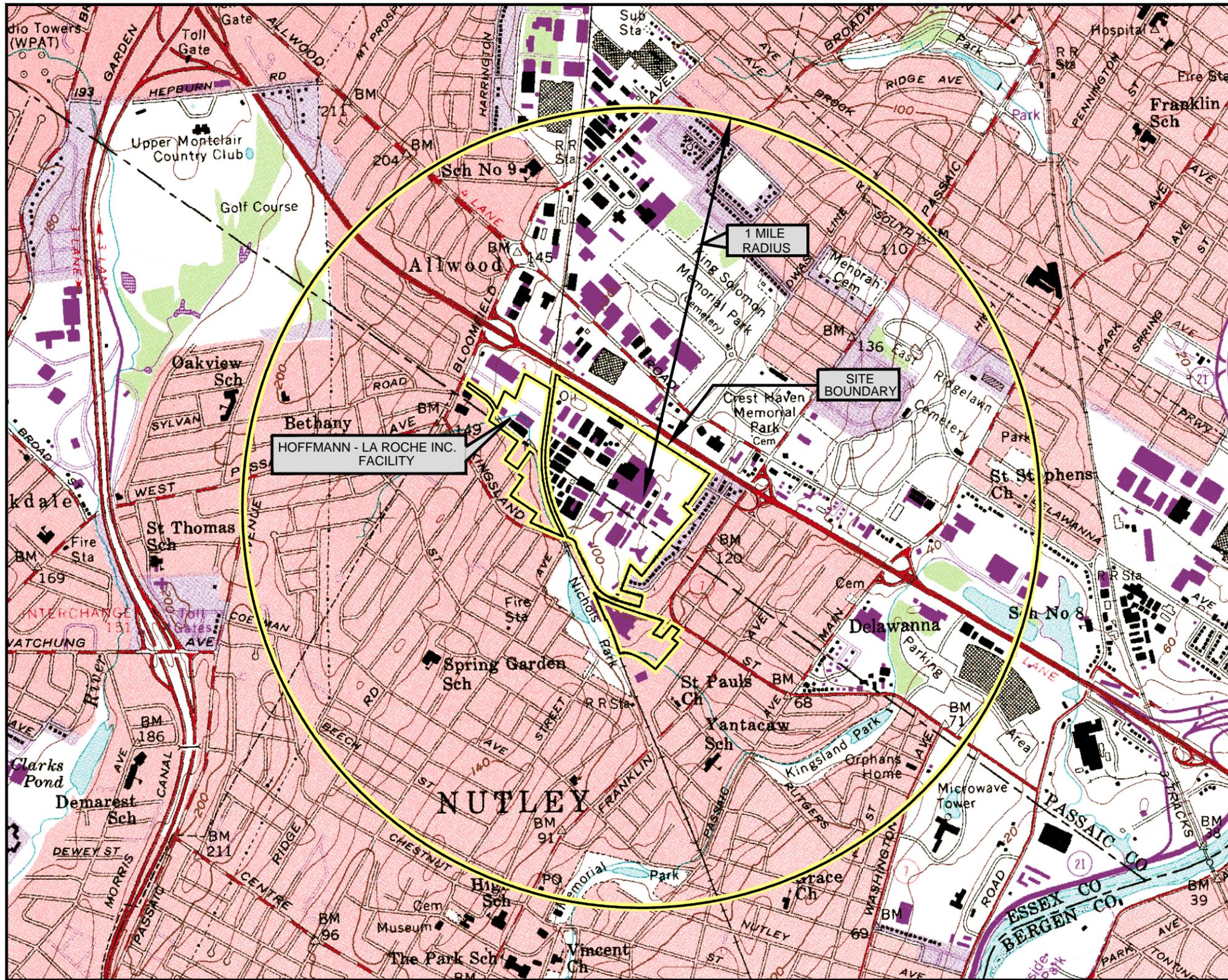
6.0 REFERENCES

- Langan 2012 Report – Vapor Intrusion Investigation and Vapor Concern Response Action, Hoffmann-La Roche Inc.; Building 77, 340 Kingsland Street, Township of Nutley, Essex County, New Jersey, SRP PI# 009949, VOLUME I OF II (Text, Tables, Figures, and Appendices), Prepared for: Hoffmann-La Roche Inc., 340 Kingsland Street, Nutley, New Jersey 07110-1199. Prepared by: Langan Engineering and Environmental Services, Inc. Elmwood Park, New Jersey 07407 April 2012.
- NJDEP 1998 Letter to Hoffmann-La Roche. Subject: PA/RCRA Facility Assessment Report Approval. September 9, 1998.
- NJDEP 2005 Field Sampling Procedures Manual. New Jersey Department of Environmental Protection. August 2005.
- NJDEP 2008 Guidance Document. Development of Site-Specific Impact to Ground Water Soil Remediation Standards Using the Soil-Water Partition Equation. Revised. December 2008.
- NJDEP 2011 NJDEP’s Historic Fill Material and Diffuse Anthropogenic Pollutants Technical Guidance, dated October 20, 2011.
- NJDEP 2012c Vapor Intrusion Technical Guidance Document, Version 1.0. New Jersey Department of Environmental Protection. January 2012.
- NJDEP 2012d Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil, August 1, 2012.
- NJDEP 2012d NJDEP Final IA-12 RIWP Final Comments, December 27, 2012.
- NJDEP 2013 Vapor Intrusion Technical Guidance Document, Version 3.0. New Jersey Department of Environmental Protection. January 2013.
- NJDEP 2013 N.J.A.C. 7:26E Technical Requirements for Site Remediation, date last amended July 1, 2013.
- NJDEP 2014 NJDEP IA-12 RIR Comment Letter, April 1, 2014.
- NJDEP 2014b NJDEP IA-12 RIR Comment Letter, July 3, 2014.
- NJDEP 2014c NJDEP IA-12 RAW Approval Letter with Comments, July 3, 2014.
- TRC 1998 PA/RCRA Facility Assessment Report. Prepared for: Hoffmann-La Roche, Inc. Prepared by TRC Environmental Corporation, May 1998.

- TRC 2011 Nutley Site Remediation, Project No. S153.29215 Initial Receptor Evaluation Prepared for: Hoffmann-La Roche, Inc. Prepared by: Prepared by TRC Environmental Corporation. February 2011.
- TRC 2012b Site-Wide Health and Safety Plan, 340 Kingsland Street, Nutley, New Jersey. Revision 2. Prepared for: Hoffmann-La Roche, Inc. Prepared by: Prepared by TRC Environmental Corporation. November 2012.
- TRC 2012c Remediation Road Map for the Hoffmann-La Roche, Inc. Facility, Nutley, New Jersey. Prepared for: Hoffmann-La Roche, Inc. Prepared by: Prepared by TRC Environmental Corporation. November 2012.
- TRC 2012f Quality Assurance Project Plan. NJDEP PI ID #009949, Revision: 2 Prepared for: Hoffmann-La Roche, Inc. Prepared by: Prepared by TRC Environmental Corporation. November 20, 2012.
- TRC 2012d Investigative Area IA-12 – Remedial Investigation Workplan, Prepared by TRC. November 21, 2012.
- TRC 2012e Investigative Area IA-12 – Remedial Investigation Workplan- Supplement 1, Prepared by TRC. November 30, 2012.
- TRC 2012f Investigative Area IA-12 – Remedial Investigation Workplan- Supplement 2, Prepared by TRC. December 12, 2012.
- TRC 2013a NJDEP’s IA-12 Remedial Investigation Workplan Comment Letter – Response to Comments, Prepared by TRC. January 8, 2013.
- TRC 2013b Investigative Area IA-12 – Remedial Investigation Workplan- Supplement 3, Prepared by TRC. January 11, 2013.
- TRC 2013c Remedial Investigation Report – Investigative Area 12. July 17, 2013.
- TRC 2014a Remedial Action Workplan – Investigative Area 12. April 1, 2014.
- TRC 2014b Response to NJDEP Comments on IA-12 RIR. Prepared by TRC. April 30, 2014.

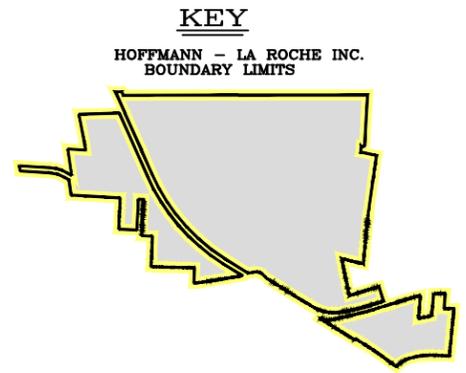
FIGURES





NORTH DECLINATION
31° 53' 50"

KEY MAP
CENTER OF FACILITY
(0,0 PLANT GRID SYSTEM)
LAT.: 40° 50' 03.7"
LONG.: 74° 09' 21.9"



KEY
HOFFMANN - LA ROCHE INC.
BOUNDARY LIMITS

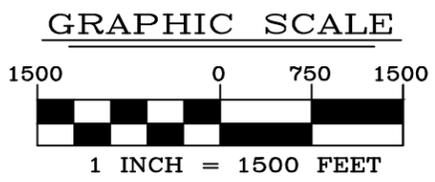
GEODETIC DATA
(FOR THE PLANT CENTROID)

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LATITUDE/LONGITUDE LAT.: 40° 50' 03.7" LONG.: 74° 09' 21.9"	LATITUDE/LONGITUDE LAT.: 40° 50' 04.08" LONG.: 74° 09' 20.45"
N.J. STATE PLANE COORDINATES NORTH: 729,307.93 EAST: 2,141,288.07	N.J. STATE PLANE COORDINATES NORTH: 729,078.36 EAST: 587,396.30

ENGINEER IN RESPONSIBLE CHARGE OF THE WORK SHOWN ON THIS DRAWING

DATE: _____ SIGNATURE: _____

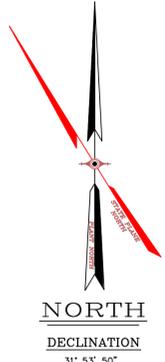
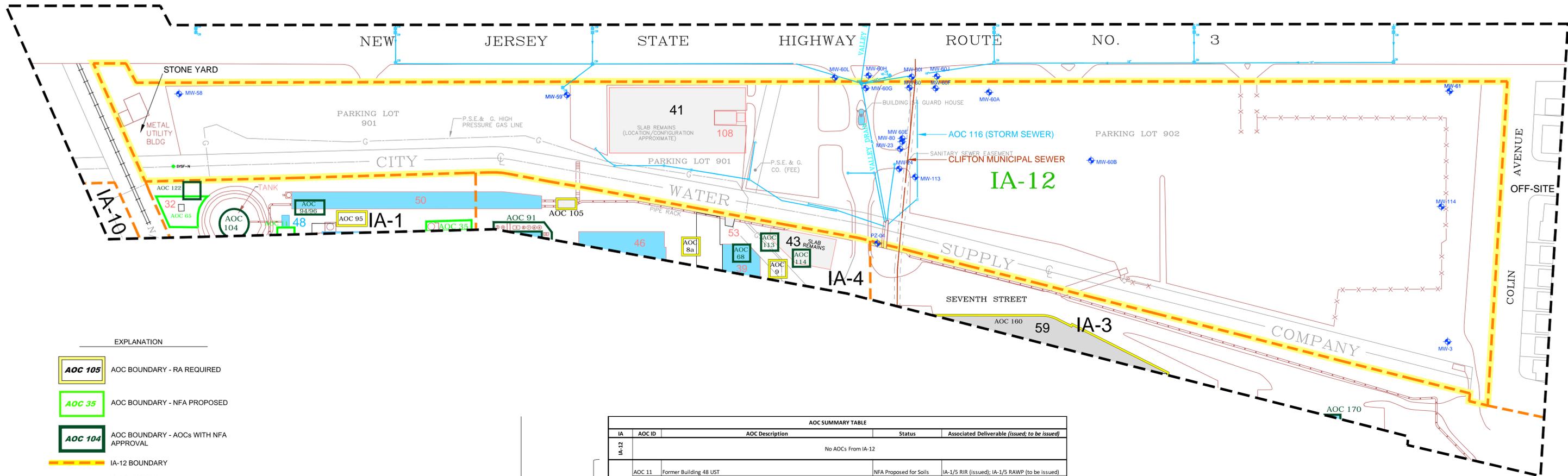
PROFESSIONAL ENGINEER: _____ LIC. # _____



REV	DATE	BY	DESCRIPTION	DESIGN SUPERVISOR PROJECT ENGINEER
2	8/14/13	MG	REMOVED PLANT CENTROID	
1	4/18/13	ODL	REVISED SITE NAME, ISSUED WITH RIRs	
0	9/13/12	ODL	ISSUED WITH RIRs	

PROJECT TITLE			
NUTLEY SITE REMEDIATION PROJECT			
DESIGNED BY	CHECKED BY	PROJECT ENGINEER	
D. De Leon	K. Lockard	G. Clerplatt	
DATE	SUPERVISOR		
4/16/13	S. McCray		

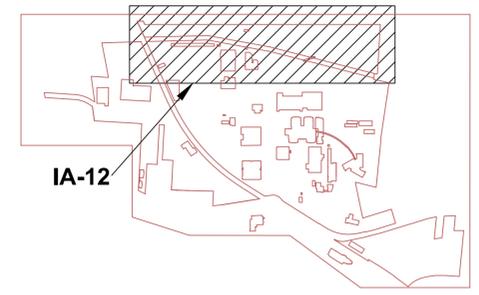
DRAWING TITLE		SCALE
FIGURE 1 SITE LOCATION MAP		1" = 1500' BLDG. NO. -
PREPARED FOR	DRAWING NO.	
Hoffmann-La Roche Inc. 340 KINGSLAND STREET NUTLEY, NEW JERSEY 07110-1199	NB-STE-S29215-C300	



- EXPLANATION
- AOC 105 AOC BOUNDARY - RA REQUIRED
 - AOC 35 AOC BOUNDARY - NFA PROPOSED
 - AOC 104 AOC BOUNDARY - AOCs WITH NFA APPROVAL
 - IA-12 BOUNDARY
 - IA BOUNDARY
 - 100' BOUNDARY
 - 50 EXISTING BUILDING
 - 59 FORMER BUILDING FOOTPRINT
 - MW-24 MONITORING WELL
 - STORM SEWER LINE (AOC 116)
 - CLIFTON MUNICIPAL SEWER

AOC SUMMARY TABLE				
IA	AOC ID	AOC Description	Status	Associated Deliverable (Issued; to be issued)
IA-12	No AOCs From IA-12			
IA-1	AOC 11	Former Building 48 UST	NFA Proposed for Soils	IA-1/5 RIR (issued); IA-1/5 RAWP (to be issued)
	AOC 35	Former Building 56 NE Raw Materials Storage Area	NFA Proposed	IA-1/5 RIR (issued); IA-1/5 RAWP (to be issued)
	AOC 65	Fire Training Area	NFA Proposed	IA-1/5 RIR (issued); IA-1/5 RAWP (to be issued)
	AOC 94/96	Building 48 W AST	NFA Issued	IA-1 NFA Summary Report (issued)
	AOC 95	Former Building 55 W ASTs	RA Required	IA-1/5 RIR (issued); IA-1/5 RAWP (to be issued)
IA-3	AOC 104	640,000 gallon AST	NFA Issued	IA-1 NFA Summary Report (issued)
	AOC 122	Production Well - PW-32	NFA Issued	IA-1 NFA Summary Report (issued)
	AOC 160	Former Building 59 Footprint - Subsurface Piping	RA Required	IA-3 RIR (issued)
IA-4	AOC 170	Former Building 87 Footprint	NFA Issued	IA-3 NFA Summary Report (issued)
	AOC 8a	Building 39 USTs (E-15 - E-20)	RA Required	IA-4 RIR (issued)
	AOC 9	Building 43 No. 2 fuel oil UST	RA Required	IA-4 RIR (issued)
	AOC 68	Building 39 N Transformer	NFA Issued	IA-4 NFA Summary Report (issued)
	AOC 91	Building 44 N ASTs	NFA Issued	IA-4 NFA Summary Report (issued)
	AOC 105	Building 61 Pump House and Piping	RA Required	IA-4 RIR (issued)
	AOC 113	Former Incinerator	NFA Issued	IA-4 NFA Summary Report (issued)
AOC 114	Building 43 Incinerator	NFA Issued	IA-4 NFA Summary Report (issued)	

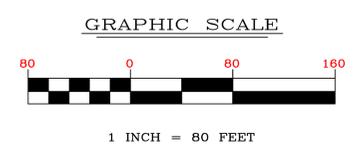
AOCs located within 100 feet of IA-12 boundary



ENGINEER IN RESPONSIBLE CHARGE OF THE WORK SHOWN ON THIS DRAWING

DATE: _____ SIGNATURE: _____

PROFESSIONAL ENGINEER: _____ LIC. # _____



REV	DATE	BY	DESCRIPTION	DESIGN SUPERVISOR	PROJECT ENGINEER
3	9-02-14	MG	UPDATED FOR IA-12 FINAL RAR		
2	3-31-14	MG	UPDATED FOR IA-12 FINAL RAW		
1	7-10-13	MG	ISSUED FOR IA-12 RIR		
0	6-18-13	LB	ISSUED FOR DRAFT IA-12 RIR		

PROJECT TITLE: NUTLEY SITE REMEDIATION PROJECT

INITIATOR: T. O'Meara

DRAWN BY: M. Giambattista

CHECKED BY: K. Lockard

PROJECT ENGINEER: G. Cierpal

START DATE: 6-18-13

SUPERVISOR: R. Hollender

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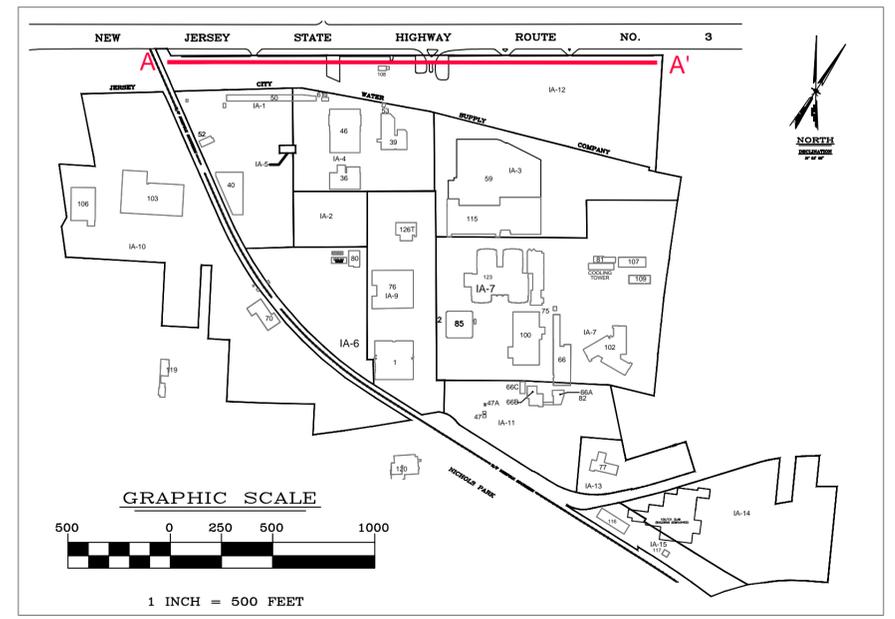
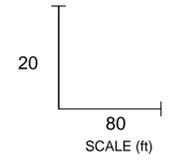
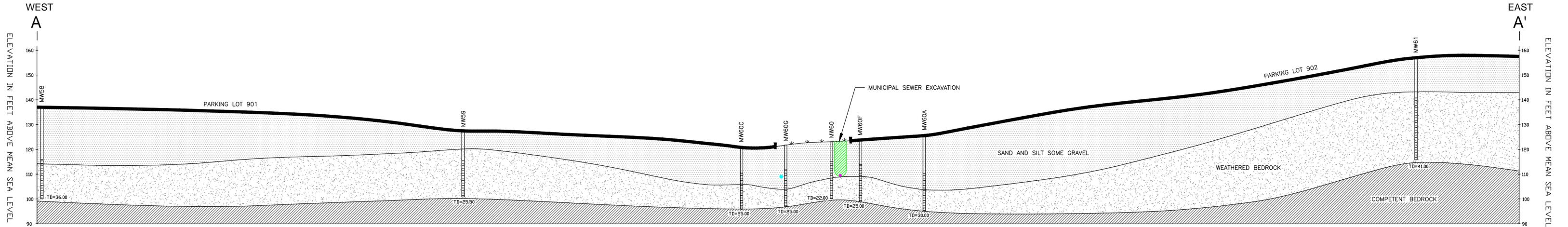
DRAWING TITLE: FIGURE 2 SITE PLAN WITH AREAS OF CONCERN - IA-12

SCALE: 1" = 80'

BLDG. NO. IA-12

PREPARED FOR: Hoffmann-La Roche Inc. 340 KINGSLAND STREET NUTLEY, NEW JERSEY 07110-1199

DRAWING NO. NR-STE-S29215-C436



EXPLANATION

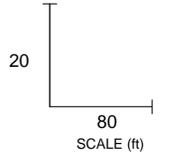
	SAND AND SILT SOME GRAVEL	SOIL OVERBURDEN
	WEATHERED BEDROCK	PASSAIC FORMATION (SANDSTONE, SILTSTONE, MUDSTONE)
	COMPETENT BEDROCK	
	WELL ID	
	WELL CASING	
	WELL SCREEN INTERVAL	
	TOTAL DEPTH	
	LITHOLOGIC CONTACT	
	CLIFTON MUNICIPAL SEWER (15" DIAMETER)	
	CLIFTON VALLEY DRAIN (48" DIAMETER)	
	ASPHALT	
	GRASS	
	MUNICIPAL SEWER EXCAVATION	

ENGINEER IN RESPONSIBLE CHARGE OF THE WORK SHOWN ON THIS DRAWING

DATE: _____ SIGNATURE: _____

PROFESSIONAL ENGINEER: _____ LIC. # _____

TRC ENVIRONMENTAL CORP.
41 SPRING STREET
NEW PROVIDENCE, NJ 07974
908-988-1700



REV	DATE	BY	DESCRIPTION	DESIGN SUPERVISOR	PROJECT ENGINEER
3	8/21/14	LB	UPDATED FOR IA-12 FINAL RAR		
2	3/31/14	LB	ISSUED FOR IA-12 FINAL RAW		
1	7/10/13	LB	ISSUED FOR IA-12 RIR PRESENTATION/FINAL RIR		
0	6/18/13	LB	ISSUED WITH DRAFT IA-12 RIR		

PROJECT TITLE
NUTLEY SITE REMEDIATION PROJECT

INITIATOR T. O'Meara	DRAWN BY L. Bochkis	CHECKED BY P. Pantaleon	PROJECT ENGINEER G. Cierpial
START DATE 6/18/13		SUPERVISOR R. Hollender	

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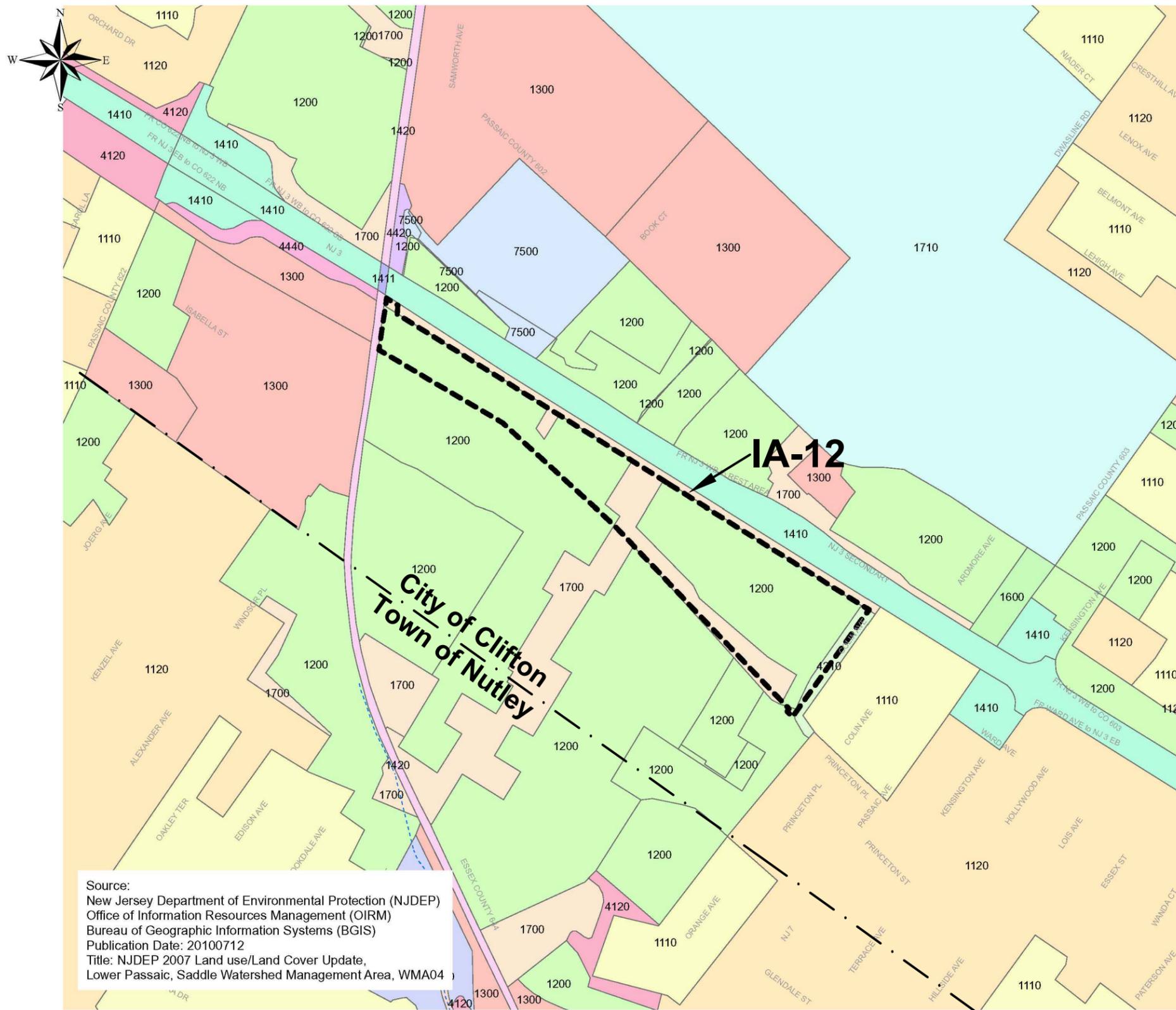
DRAWING TITLE
**FIGURE 3
GENERALIZED GEOLOGIC CROSS-SECTION
A - A'
IA-12**

SCALE
HOR: 1"=80'
VER: 1"=20'

BLDG. NO.
IA-12

PREPARED FOR
 Hoffmann-La Roche Inc.
340 KINGSLAND STREET NUTLEY, NEW JERSEY 07110-1199

DRAWING NO.
ND-STE-S29215-C437



Legend

- IA-12_Boundary
- Streams
- 1110 - RESIDENTIAL, HIGH DENSITY OR MULTIPLE DWELLING
- 1120 - RESIDENTIAL, SINGLE UNIT, MEDIUM DENSITY
- 1200 - COMMERCIAL/SERVICES
- 1300 - INDUSTRIAL
- 1410 - MAJOR ROADWAY
- 1411 - MIXED TRANSPORTATION CORRIDOR OVERLAP AREA
- 1420 - RAILROADS
- 1600 - MIXED URBAN OR BUILT-UP LAND
- 1700 - OTHER URBAN OR BUILT-UP LAND
- 1710 - CEMETERY
- 1800 - RECREATIONAL LAND
- 4120 - DECIDUOUS FOREST (>50% CROWN CLOSURE)
- 4210 - CONIFEROUS FOREST (10-50% CROWN CLOSURE)
- 4420 - DECIDUOUS BRUSH/SHRUBLAND
- 4440 - MIXED DECIDUOUS/CONIFEROUS BRUSH/SHRUBLAND
- 5300 - ARTIFICIAL LAKES
- 7500 - TRANSITIONAL AREAS

Source:
 New Jersey Department of Environmental Protection (NJDEP)
 Office of Information Resources Management (OIRM)
 Bureau of Geographic Information Systems (BGIS)
 Publication Date: 20100712
 Title: NJDEP 2007 Land use/Land Cover Update,
 Lower Passaic, Saddle Watershed Management Area, WMA04

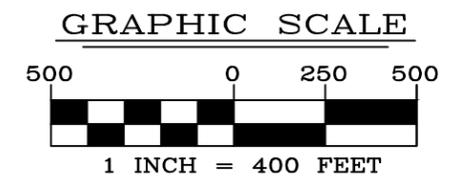
ENGINEER IN RESPONSIBLE CHARGE OF THE WORK SHOWN ON THIS DRAWING

DATE: _____ SIGNATURE: _____

PROFESSIONAL ENGINEER: _____ LIC. # _____

TRC

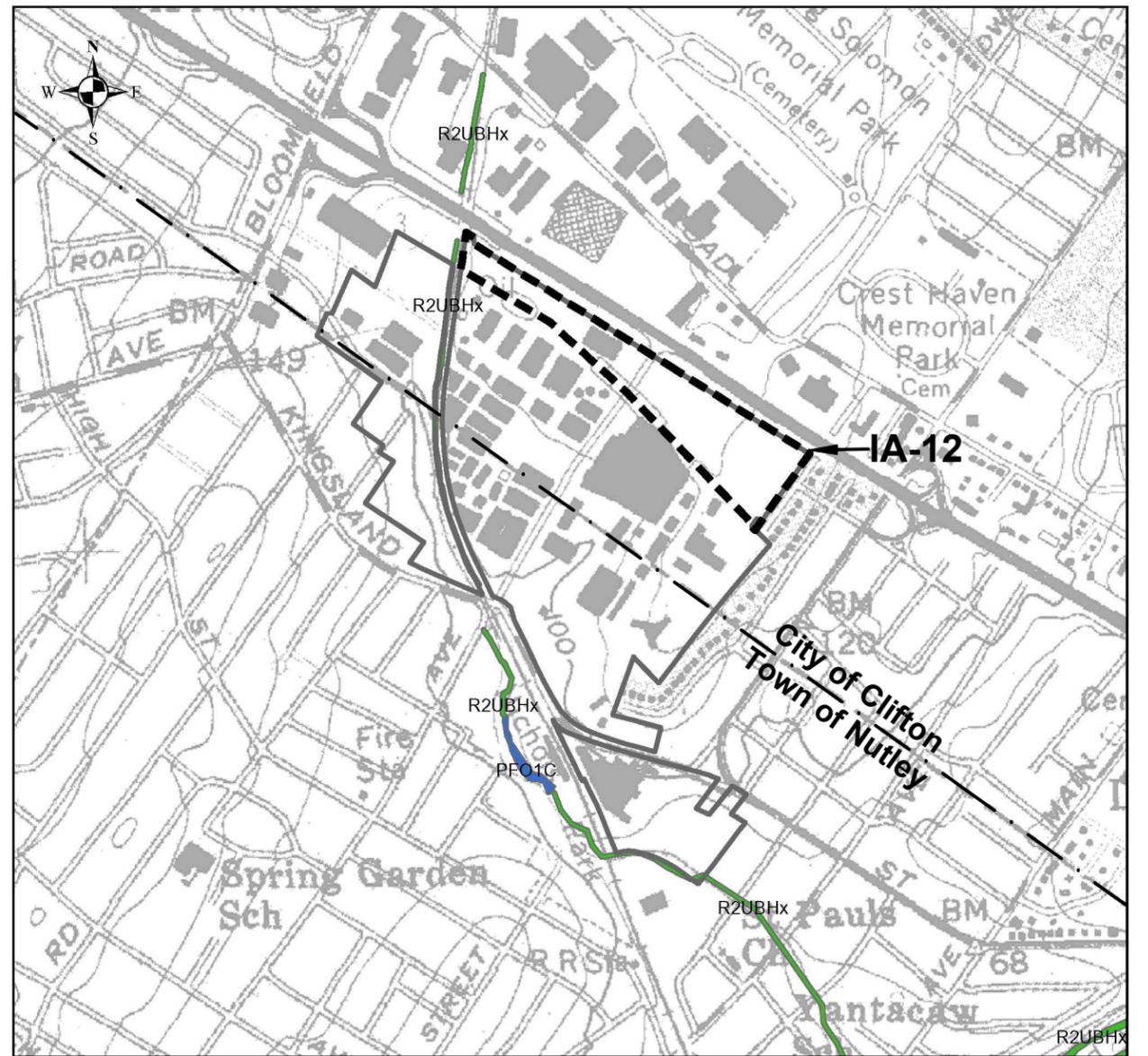
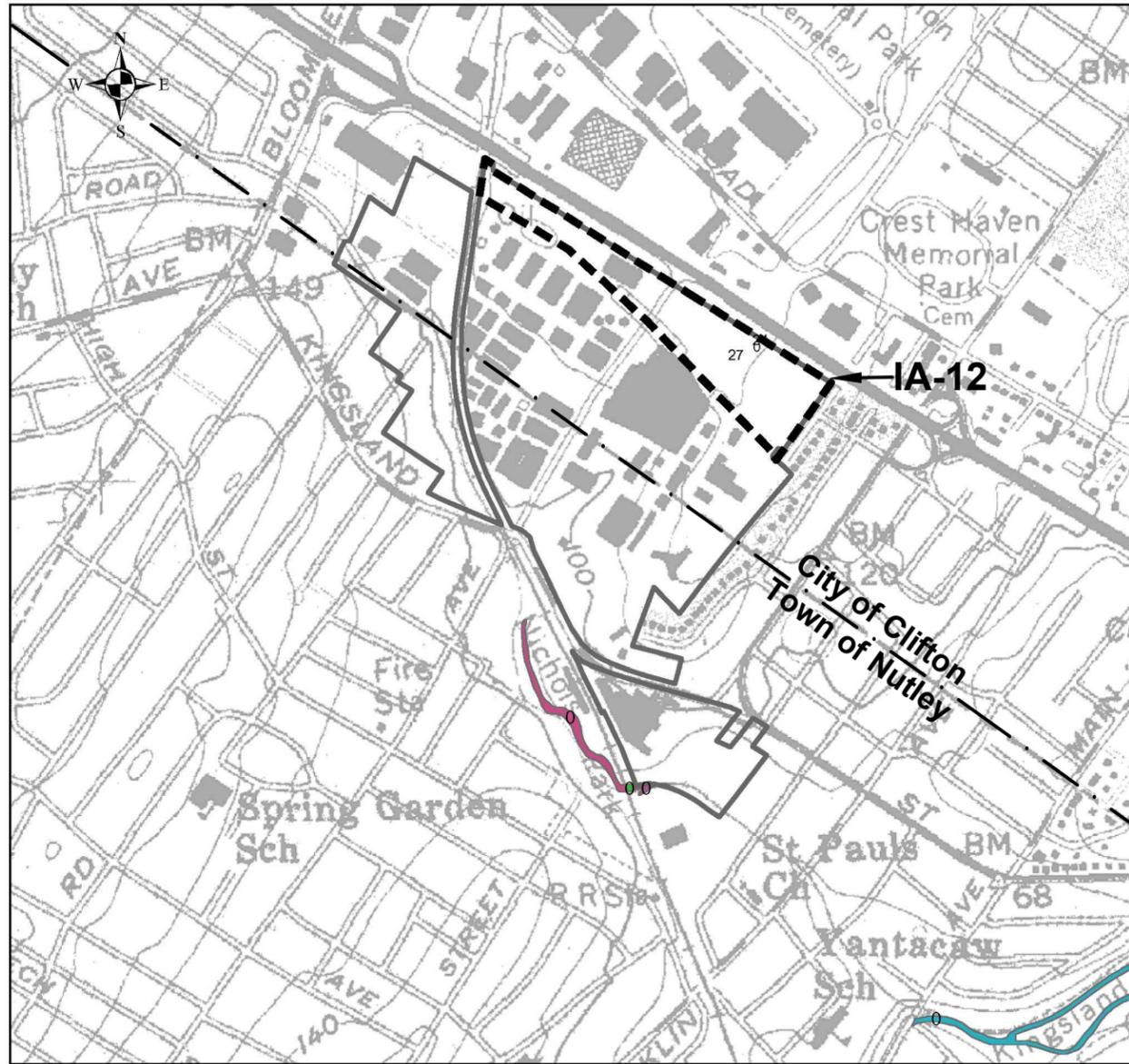
TRC ENVIRONMENTAL CORP.
 41 SPRING STREET
 NEW PROVIDENCE, NJ 07974
 908-988-1700



REV	DATE	BY	DESCRIPTION
1	6/21/13	MG	CLIFTON/NUTLEY BOUNDARY LINE
0	6/18/13	LB	ISSUED WITH DRAFT IA-12 RIR

PROJECT TITLE			
NUTLEY SITE REMEDIATION PROJECT			
INTRODUCED BY	DRAWN BY	CHECKED BY	PROJECT ENGINEER
T. O'Meara	L. Bochks	P. Pantaleon	G. Clerplal
	DATE	SUPERVISOR	
	6/18/13	R. Hollender	
DESIGN SUPERVISOR PROJECT ENGINEER			
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DRAWING TITLE		SCALE
FIGURE 4 NJDEP GIS - LAND USE/LAND COVER IA-12		1" = 400' BLDG. NO. IA-12
PREPARED FOR		
Hoffmann-La Roche Inc. 340 KINGSLAND STREET NUTLEY, NEW JERSEY 07110-1199		
DRAWING NO.		1
NB-STE-S29215-C439		



NJDEP FRESH WATER WETLANDS MAP

- IA-12_Boundary
- Site Property Boundary
- 0: - ARTIFICIAL LAKES
- 0: - BRIDGE OVER WATER
- 0: - STREAMS AND CANALS

SOURCES:
 1. Orange Quadrangle, N.J., Digital Geodata Series, New Jersey Geological Survey, NJDEP.
 2. Source: NJDEP 2007 Land Use/Land Cover Update (7/12/10).

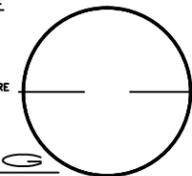
NATIONAL WETLANDS MAP

- IA-12_Boundary
- Site Property Boundary
- PFO1C - Freshwater Forested/Shrub Wetland
- R2UBHx - Riverine

SOURCES:
 1. Orange Quadrangle, N.J., Digital Geodata Series, New Jersey Geological Survey, NJDEP.
 2. National Wetlands Inventory Polygon Data, Wetlands Geodatabase, U. S. Fish and Wildlife Service.

ENGINEER IN RESPONSIBLE CHARGE OF THE WORK SHOWN ON THIS DRAWING

DATE: _____ SIGNATURE _____

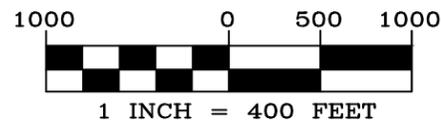


PROFESSIONAL ENGINEER: **EN 900**
 LIC. # **EN 900**



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 908-988-1700

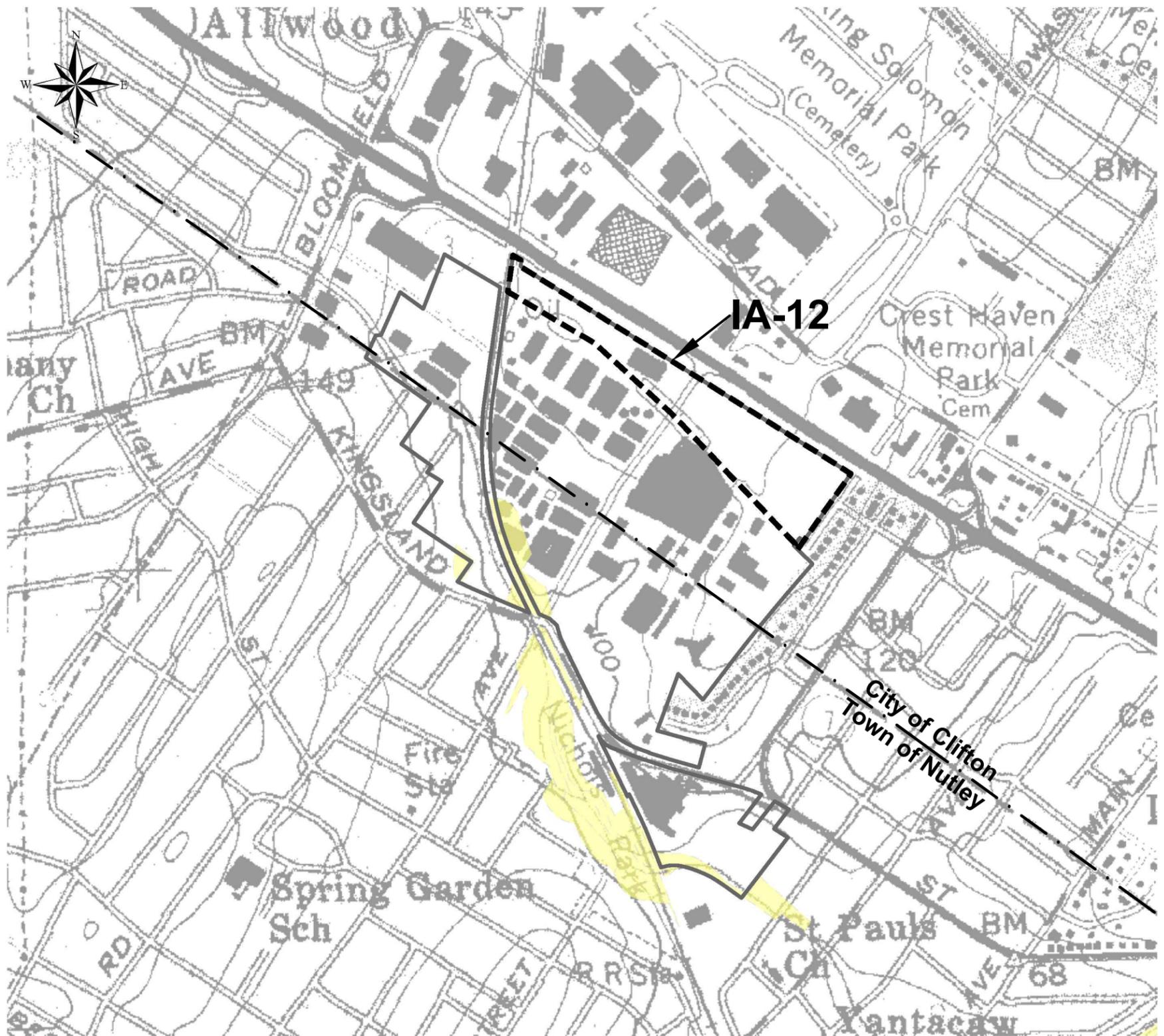
GRAPHIC SCALE



1	6/21/13	MG	CLIFTON/NUTLEY BOUNDARY LINE
0	6/18/13	LB	ISSUED WITH DRAFT IA-12 RIR
REV	DATE	BY	DESCRIPTION

PROJECT TITLE NUTLEY SITE REMEDIATION PROJECT			
DESIGNED BY T. O'Meara	DRAWN BY L. Bochkis START DATE 6/18/13	CHECKED BY P. Pantaleon SUPERVISOR R. Hollender	PROJECT ENGINEER G. Clerplat
DESIGN SUPERVISOR PROJECT ENGINEER THIS DRAWING AND ALL INFORMATION THEREON IS THE PROPERTY OF HOFFMANN-LA ROCHE INC. AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY ROCHE AND IS SUBJECT TO RETURN ON DEMAND.			

DRAWING TITLE FIGURE 5 NJDEP GIS - STATE AND FEDERAL WETLANDS IA-12	SCALE 1" = 400'
PREPARED FOR Hoffmann-La Roche Inc. 340 KINGSLAND STREET NUTLEY, NEW JERSEY 07110-1199	BLDG. NO. IA-12
DRAWING NO. NB-STE-S29215-C440	



Legend

- IA-12_Boundary
- Site Property Boundary
- Species-Based Habitat - Piedmont Plains**
- RANK**
- Rank 1 - Habitat specific requirements
- Rank 2 - Special Concern
- Rank 3 - State Threatened
- Rank 4 - State Endangered
- Rank 5 - Federal Listed

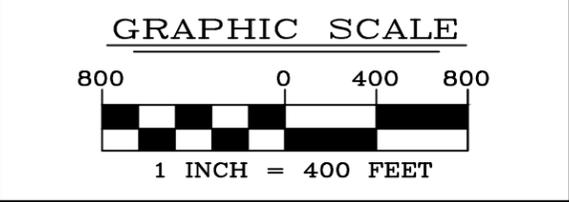
SOURCES:
 1. Arthur Kill Quadrangle, N.J. Digital Geodata Series, New Jersey Geological Survey, NJDEP.
 2. NJDEP Species Based Habitat, Piedmont Plains Region (Version 3.1, 20120221) Edition: 20120221

ENGINEER IN RESPONSIBLE CHARGE OF THE WORK SHOWN ON THIS DRAWING

DATE: _____ SIGNATURE: _____

PROFESSIONAL ENGINEER: **ENG**
 LIC. # **ENG**

TRC ENVIRONMENTAL CORP.
 41 SPRING STREET
 NEW PROVIDENCE, NJ 07974
 908-988-1700



REV	DATE	BY	DESCRIPTION
1	6/21/13	MG	CLIFTON/NUTLEY BOUNDARY LINE
0	6/21/13	LB	ISSUED WITH DRAFT IA-12 RIR

PROJECT TITLE			
NUTLEY SITE REMEDIATION PROJECT			
DESIGNED BY	CHECKED BY	PROJECT ENGINEER	
T. O'Meara	L. Rochkls 6/18/13	P. Pantaleon R. Hollender	G. Clerplat
DESIGN SUPERVISOR	THIS DRAWING AND ALL INFORMATION THEREON IS THE PROPERTY OF HOFFMANN-LA ROCHE INC. AND IS CONFIDENTIAL AND MUST NOT BE MADE PUBLIC OR COPIED UNLESS AUTHORIZED BY ROCHE AND IS SUBJECT TO RETURN ON DEMAND.		
PROJECT ENGINEER			

DRAWING TITLE		SCALE
FIGURE 6 NJDEP GIS - LANDSCAPE PROJECT IA-12		1" = 400'
BLDG. NO.	IA-12	
PREPARED FOR	Hoffmann-La Roche Inc. 340 KINGSLAND STREET NUTLEY, NEW JERSEY 07110-1199	
DRAWING NO.	NB-STE-S29215-C441	

EXPLANATION

- PROPERTY BOUNDARY
- CLIFTON MUNICIPAL SEWER
- STORM DRAIN
- MANHOLE
- CATCH BASIN
- MUNICIPAL MANHOLE
- GROUND WATER MONITORING WELL
- CORE HOLE
- GEOPHYSICAL ANOMALY
- EXTENT AND DEPTH OF FORMER EXCAVATIONS
- TEST PIT
- SOIL BORING COMPLETED, NO SAMPLE COLLECTED
- SOIL BORING WITH EXCEEDANCES
- SOIL BORING WITHOUT EXCEEDANCES
- EXCAVATED SOIL BORING, NO SAMPLE COLLECTED
- EXCAVATED SOIL SAMPLES WITH EXCEEDANCES
- EXCAVATED SOIL SAMPLES WITHOUT EXCEEDANCES
- SOIL GAS POINT
- EXTENT AND DEPTH OF COMPLETED EXCAVATIONS

Parameter	NDCSR (ppm)	NRDCSR (ppm)	DIGWSL (ppm)
As = Arsenic	2	5	0.05
Ba = Barium	2	2	0.05
Be = Beryllium	0.2	0.2	0.2
Bz = Benzene	0.2	0.2	0.2
Cr = Chromium	0.2	0.2	0.2
Cu = Copper	0.2	0.2	0.2
Pb = Lead	0.2	0.2	0.2
Mn = Manganese	0.2	0.2	0.2
Hg = Mercury	0.2	0.2	0.2
Ni = Nickel	0.2	0.2	0.2
Tl = Thallium	0.2	0.2	0.2
V = Vanadium	0.2	0.2	0.2
Zn = Zinc	0.2	0.2	0.2

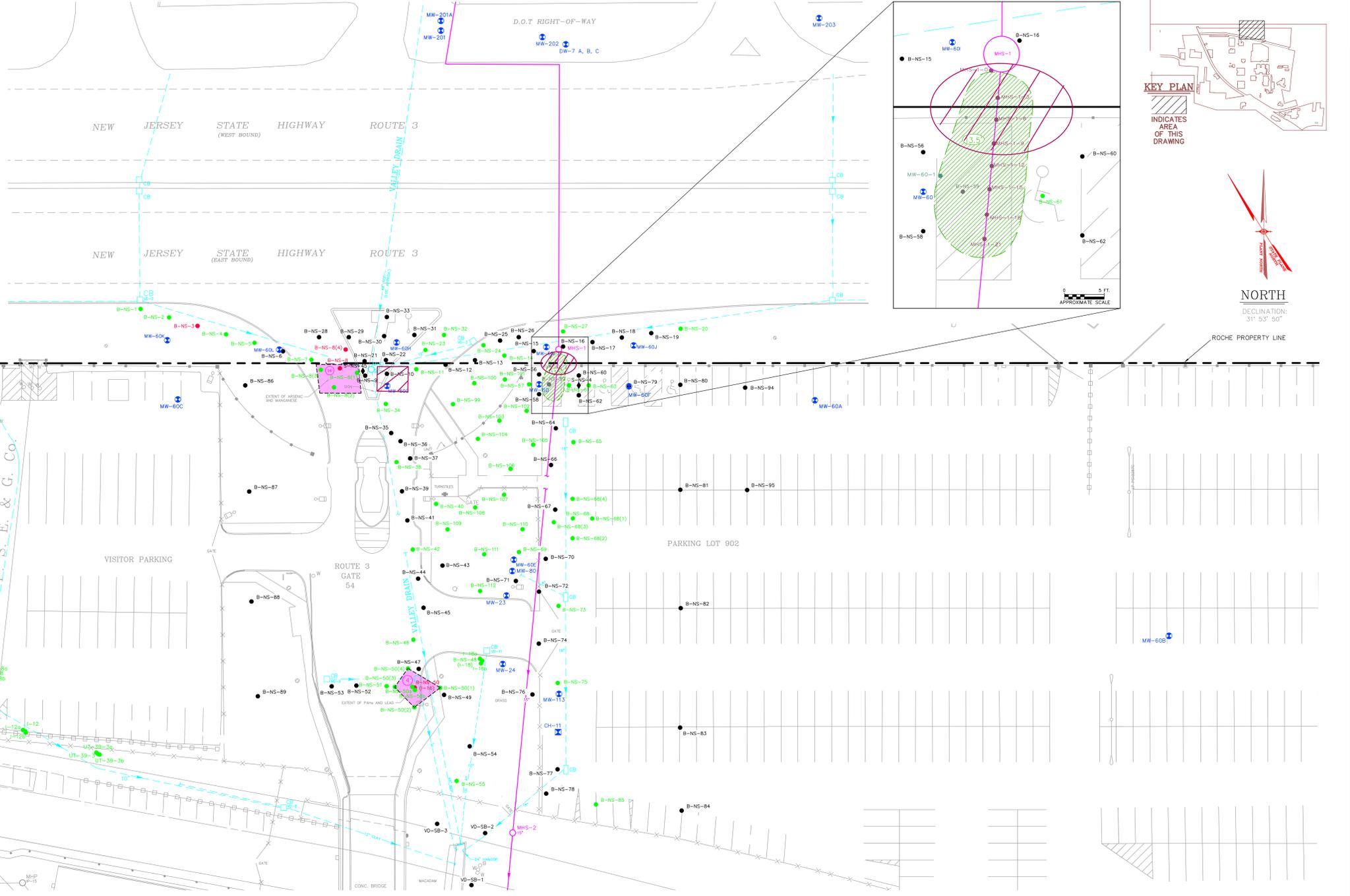
All soil concentrations reported in parts per million (ppm)

VOCs = Volatile Organic Compounds
 ABFs = Acid Extractables / Base Neutrals
 PCBs = Polychlorinated Biphenyls
 SRPs = Synthetic Precipitation Leaching Procedure
 NDEP/PAH = New Jersey Department of Environmental Protection
 NDCE/RSR = NDEP's Remedial Direct Contact Soil Remediation Standard
 DIGWWSL = NDEP's Default Impact to Ground Water Soil Screening Level
 MHS/SG = Site Specific Impact to Ground Water Soil Remediation Standard
 *SRP & SG Concentration below NDEP/PAH NDCE/RSR, DIGWWSL and IA-12 RW/SRP
 *+ RW/SRP determined using the NDEP/PAH SRP Calculator Spreadsheet

In accordance with the NDEP's January 31, 2011 Frequently Asked Questions for the Impact to Ground Water Pathway on Soil Remediation Standards, evaluation of the impact to ground water pathway is not required for Aluminum, Manganese, Silver and Zinc. Therefore, these metals are not included in this figure.

EPHs = Extractable Petroleum Hydrocarbons
 1,700 ppm = trigger for development of sample-specific human health based EPH Soil Remediation Criterion
 17,000 ppm = residential product limit for petroleum hydrocarbon mixtures other than No. 2 fuel oil and diesel
 17,000 ppm = residential product limit for petroleum hydrocarbon mixtures other than No. 2 fuel oil and diesel

Yellow highlighting indicates concentration above the DIGWWSL (IA-12 RW/SRP)
 Bold indicates concentration above the NDCE/RSR
 Bold and underlined indicates concentration above the NDCE/RSR



Soil Borings	Monitoring Well Soil Samples	Miscellaneous																																	
<table border="1"> <tr><td>B-NS-1</td><td>Date: 11/19/12</td><td>Depth: 0.0-0.5</td><td>VOCs: <185 & 501</td><td>ABFs: <185 & 501</td><td>Metals: <185 & 501</td><td>PCBs: <185 & 501</td><td>Cr: <185 & 501</td><td>Fr: <185 & 501</td><td>Perchlorate: <185 & 501</td><td>Cyanide: <0.27</td></tr> </table>	B-NS-1	Date: 11/19/12	Depth: 0.0-0.5	VOCs: <185 & 501	ABFs: <185 & 501	Metals: <185 & 501	PCBs: <185 & 501	Cr: <185 & 501	Fr: <185 & 501	Perchlorate: <185 & 501	Cyanide: <0.27	<table border="1"> <tr><td>MW-600</td><td>Date: 02/24/12</td><td>Depth: 2.0-2.5</td><td>VOCs: <185 & 501</td><td>ABFs: <185 & 501</td><td>Metals: <185 & 501</td><td>PCBs: <185 & 501</td><td>Cr: <185 & 501</td><td>Fr: <185 & 501</td><td>Perchlorate: <185 & 501</td><td>Cyanide: <0.27</td></tr> </table>	MW-600	Date: 02/24/12	Depth: 2.0-2.5	VOCs: <185 & 501	ABFs: <185 & 501	Metals: <185 & 501	PCBs: <185 & 501	Cr: <185 & 501	Fr: <185 & 501	Perchlorate: <185 & 501	Cyanide: <0.27	<table border="1"> <tr><td>IA12-Testp1</td><td>Date: 02/24/12</td><td>Depth: 2.0-2.5</td><td>VOCs: <185 & 501</td><td>ABFs: <185 & 501</td><td>Metals: <185 & 501</td><td>PCBs: <185 & 501</td><td>Cr: <185 & 501</td><td>Fr: <185 & 501</td><td>Perchlorate: <185 & 501</td><td>Cyanide: <0.27</td></tr> </table>	IA12-Testp1	Date: 02/24/12	Depth: 2.0-2.5	VOCs: <185 & 501	ABFs: <185 & 501	Metals: <185 & 501	PCBs: <185 & 501	Cr: <185 & 501	Fr: <185 & 501	Perchlorate: <185 & 501	Cyanide: <0.27
B-NS-1	Date: 11/19/12	Depth: 0.0-0.5	VOCs: <185 & 501	ABFs: <185 & 501	Metals: <185 & 501	PCBs: <185 & 501	Cr: <185 & 501	Fr: <185 & 501	Perchlorate: <185 & 501	Cyanide: <0.27																									
MW-600	Date: 02/24/12	Depth: 2.0-2.5	VOCs: <185 & 501	ABFs: <185 & 501	Metals: <185 & 501	PCBs: <185 & 501	Cr: <185 & 501	Fr: <185 & 501	Perchlorate: <185 & 501	Cyanide: <0.27																									
IA12-Testp1	Date: 02/24/12	Depth: 2.0-2.5	VOCs: <185 & 501	ABFs: <185 & 501	Metals: <185 & 501	PCBs: <185 & 501	Cr: <185 & 501	Fr: <185 & 501	Perchlorate: <185 & 501	Cyanide: <0.27																									

ENGINEER IN RESPONSIBLE CHARGE OF THIS DRAWING

DATE: _____ SIGNATURE: _____

PROFESSIONAL ENGINEER LIC. # _____

TRC ENVIRONMENTAL CORP.
41 SPRING STREET
NEW PROVIDENCE, NJ 07974
908-988-1700

GRAPHIC SCALE
1 INCH = 20 FEET

REV	DATE	BY	DESCRIPTION
5	8/21/14	LB	UPDATED FOR IA-12 FINAL RAR
4	6/11/14	LB	UPDATED FOR IA-12 DRAFT RAR
3	3/31/14	LB	UPDATED FOR IA-12 FINAL RAR
2	1/20/14	LB	ISSUED FOR IA-12 RIR DATA RE-EVALUATION
1	7/3/13	MG	ISSUED FOR IA-12 RIR PRESENTATION/ADDED OFF-SITE SOIL DATA/FINAL RIR
0	2/4/13	MG	ISSUED WITH DRAFT IA-12 RIR

PROJECT TITLE: NUTLEY SITE REMEDIATION PROJECT

DRAWN BY: M. G. Battista

CHECKED BY: J. Morris

DESIGNED BY: G. Clerpiot

PROJECT ENGINEER: G. Clerpiot

DRAWING TITLE: FIGURE 7 SOIL ANALYTICAL RESULTS WITH COMPLETED EXCAVATIONS IA-12

SCALE: 1"=20'

BLDG. NO. IA-12

DESIGN SUPERVISOR: _____

PROJECT ENGINEER: _____

DRAWING NO: NR-STE-S29215-C459

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APPENDICES

APPENDIX A

Appendix A

Public Notification Advertisement

Committed to a Comprehensive Investigation And Cleanup of the Nutley Site



Roche Selects Remedies to Clean Up Soil in An Investigative Area (IA-12)

Residents have 30 days to ask or submit written questions or concerns regarding the proposed remedial action

Roche is conducting a comprehensive investigation and cleanup of its Nutley site under the oversight of the New Jersey Department of Environmental Protection (NJDEP) and consistent with its global Corporate Sustainability principles. Roche is now ready to implement its Remedial Action Work Plan (RAWP) for soils in one area of the campus – **Investigative Area (IA) 12** – under the oversight of the NJDEP and a Licensed Site Remediation Professional (LSRP).

To see the location of IA-12, visit <http://www.rocheusa.com/fmfiles/re7180004/nutley/IA-boundary-Map.pdf> on the Roche Nutley website.

IA-12 covers approximately 17 acres in the northern portion of the Roche site. It is bordered by the Norfolk Southern Railroad tracks to the west, a residential neighborhood to the east, the Roche campus to the south and Route 3 to the north. The majority of IA-12 is covered by asphalt pavement and several structures, including the Route 3 Guard House (B54) and two other buildings (B108 and B108A).

- The soil that Roche is remediating contains metals such as arsenic, manganese and lead, as well as polycyclic aromatic hydrocarbons (PAHs) from historic fill used to raise the site elevation before Roche purchased the property. For soil containing PAHs, the proposed remedy involves removing the soil, sending it to a licensed and approved treatment facility, and then returning the cleaned soil back to the location for reuse. For soils containing metals, the proposed remedy involves removing the soil and disposing of it off-site at an approved facility. For soils containing commingled metals and PAHs, the proposed remedy involves removing the soil, sending it to a licensed and approved treatment facility to treat the PAHs, and disposing of the soil off-site at an approved facility.

The proposed remedies for IA-12 are LSRP-approved remediation options designed to allow for optimal use of the property in the future.

While NJDEP is reviewing the RAWP and prior to implementing these remedial actions, residents have 30 days (between April 12 and May 12, 2014) to ask or submit written questions or concerns to either the Roche Nutley Site contact person or the LSRP contact person listed below, before any remedial action is implemented.

More detailed information about the remediation efforts on the Roche Nutley site, including a copy of the RAWP, can be found at www.roche-nutley.com, the Clifton Memorial Library, Clifton Allwood Branch and the Nutley Public Library.



Teresa O'Meara*
Manager

Hoffmann-La Roche Inc.
Site Environmental, Health & Safety
340 Kingsland Street
Nutley, NJ 07110

teresa.omeara@roche.com
(973) 235-2798 or (973) 235-6660

* new contact

Dawn Pompeo

Roche Nutley LSRP Project Coordinator
TRC Environmental Corporation
57 East Willow Street
Millburn, NJ 07041

dpompeo@trcsolutions.com
(973) 564-6006, ext. 270

Notification of Environmental Investigation and Cleanup
Hoffmann-La Roche Inc. (Roche)
340 Kingsland Street Nutley, New Jersey ("Roche Nutley Site")
Clifton tax parcels: Block 79.04, Lots 10 & 21; Block 80.02,
Lots 1, 3 & 4
Nutley tax parcels: Block 102, Lot 2; Block 200, Lots 1-6 & 24;
Block 201, Lots 1 & 2; Block 300, Lot 1; Block 2000, Lots 4 & 5;
Block 2101, Lot 1
NJDEP PI No. 009949
NJDEP PI No. 614465

APPENDIX B

Appendix B

Copies of NJDEP Forms



New Jersey Department of Environmental Protection
Site Remediation Program

REMEDIAL ACTION REPORT FORM

Date Stamp
 (For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: Hoffmann - La Roche Inc., Investigative Area 12 (IA-12)

List all AKAs: Roche

Street Address: 340 Kingsland Street

Municipality: Nutley (Township, Borough or City)

County: Essex Zip Code: 07110

Program Interest (PI) Number(s): 009949

Case Tracking Number(s) for this submission: NJD002191211

Date Remediation Initiated Pursuant to N.J.A.C. 7:26C-2: 10/22/1992

State Plane Coordinates for a central location at the site: Easting: _____ Northing: _____

Municipal Block(s) and Lot(s):

Block #: <u>80.02 (in Clifton)</u>	Lot #: <u>1, 3, 4</u>	Block #: _____	Lot #: _____
Block #: _____	Lot #: _____	Block #: _____	Lot #: _____
Block #: _____	Lot #: _____	Block #: _____	Lot #: _____
Block #: _____	Lot #: _____	Block #: _____	Lot #: _____

SECTION B. SUBMISSION STATUS

1. Indicate how the Electronic Data Deliverable (EDD) for this submission is being provided to the NJDEP:

- Via Email at srpedd@dep.state.nj.us (attach NJDEP confirmation email); or
- CD (attach to this submission)
- Not Applicable – No EDD

2. Complete the following Submission and Permit Status Table:

	N/A	Included in this Submission	Previously Submitted	Date of Submission	Date of Revised Submission	Date of Previous NJDEP Approval	Date of Document Withdrawal
Alternative Soil Remediation Standard and/or Screening level Application Form	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Case Inventory Document		<input type="checkbox"/>					
Discharge to Ground Water Permit by Rule Authorization Request	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
IEC Engineered System Response Action Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Immediate Environmental Concern Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
LNAPL Interim Remedial Measure Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Preliminary Assessment Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	05/01/1998			
Public Notification	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	04/11/2014			
Receptor Evaluation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	02/01/2011			
Remedial Action Report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Remedial Action Work Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	04/01/2014			
Remedial Investigation Report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	07/17/2013			

Response Action Outcome	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Site Investigation Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Technical Impracticability Determination	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Vapor Concern Mitigation Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Permit Application – list:	<input checked="" type="checkbox"/>						
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
		<input type="checkbox"/>	<input type="checkbox"/>				
Radionuclide Remedial Investigation Workplan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Radionuclide Remedial Investigation Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Radionuclide Remedial Action Workplan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Radionuclide Remedial Action Report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

SECTION C. SITE USE

Current Site Use (check all that apply)

Industrial Agricultural
 Residential Park or recreational use
 Commercial Vacant
 School or child care Government
 Other: parking lot

Intended Future Site Use (check all that apply)

Industrial Park or recreational use
 Residential Vacant
 Commercial Government
 School or child care Future site use unknown
 Other: _____

SECTION D. CASE TYPE: (check all that apply)

Administrative Consent Order (ACO) Landfill (SRP subject only)
 Brownfield Development Area (BDA) Regulated Underground Storage Tank (UST)
 Child Care Facility Remediation Agreement (RA)/ Remediation Certification
 Chrome Site (Chromate chemical production waste) School Development Authority (SDA)
 Coal Gas School facility
 Due Diligence with RAO Spill Act Defense – Government Entity
 Hazardous Discharge Remediation Fund (HDSRF) Grant/Loan Spill Act Discharge
 UST Grant/Loan
 ISRA Other: _____

Federal Case (check all that apply)

RCRA GPRA 2020 CERCLA/NPL USDOD USDOE

1. Is the party conducting remediation a government entity? Yes No
If "Yes," check one: Federal State Municipal County

SECTION E. PUBLIC FUNDS

Did the remediation utilize public funds? Yes No
If "Yes," check applicable:

UST Grant UST Loan Brownfield Reimbursement Program
 HDSRF Grant HDSRF Loan Landfill Reimbursement Program
 Spill Fund Schools Development Authority Environmental Infrastructure Trust

SECTION F. SCOPE OF REMEDIAL ACTION REPORT

1. Does the RAR address:
 Area(s) of Concern (AOCs) Only
 Entire Site (Based on a completed and submitted Preliminary Assessment/Site Investigation)

2. Total number of contaminated AOCs associated with the case: 1

3. Total number of contaminated AOCs addressed in this submission: 1
4. Are there any outstanding contaminated AOCs associated with the case where the remedial action has NOT been performed?..... Yes No

When answering the remaining questions on this form consider only the AOCs addressed in this submission.

SECTION G. GENERAL

1. Does this submission include Remedial Action Permit Application(s) that require Site Remediation Program approval? Yes No
2. Was a remediation initiated after May 6, 2010, for new construction or a change in the use of the site proposed for the purpose of residential use, use as a licensed child care center or use as a school? Yes No
 If "Yes," was an unrestricted use or a presumptive remedy implemented? Yes No
3. Was an alternative remedy approved by the NJDEP? Yes No
 If "Yes," provide the date of the approval: _____
4. Has the remediation varied from the Technical Rules? Yes No
 If "Yes," provide the citation(s) from which the remediation has varied and the page(s) in the attached document where the rationale for the variance is provided.
 N.J.A.C. 7:26E- _____ Page _____
 N.J.A.C. 7:26E- _____ Page _____
 N.J.A.C. 7:26E- _____ Page _____
5. Were the laboratory Reporting Limits below applicable remediation standards/screening levels criteria required for the contaminants of concern for the AOCs addressed in this submission? Yes No
6. Have past NJDEP-documented deficiencies been addressed in this submission? Yes No N/A
7. Did the remediation deviate from that proposed in the Remedial Action Workplan? Yes No
 If "Yes," specify the section/page(s) in the report where the deviation(s) are discussed:

8. Did the remedial action render the property unusable for future redevelopment or for recreational use (N.J.A.C. 7:26C-6.4(b))? Yes No

SECTION H. SITE CONDITIONS

1. At any time, was there any radiological contamination detected at the AOCs addressed in this submission? Yes No
2. At any time, did any of the AOCs addressed in this submission contain Ordnance and Explosives/ Unexploded Ordnance (OE/UXO)? Yes No
3. Did the remedial action involve containment of free product? Yes No
4. Has dioxin been detected at levels above NJDEP's interim direct contact soil screening level of 50 ppt dioxin TEQ (TCDD Toxicity Equivalence Quotient) in any AOCs addressed in this submission? Yes No
5. Have any of the following contaminants *ever* been detected in sediment above the ecological screening levels at the AOCs addressed in this submission? Yes No
 If "Yes," check all that apply:
 Arsenic Dioxin Mercury PCBs Pesticides
6. Is remediation complete in all affected media at the AOCs addressed in this submission? Yes No
7. Did contaminants from the AOCs addressed in this submission discharge to surface water? Yes No
8. Did contaminants from the AOCs addressed in this submission discharge to an Environmentally Sensitive Natural Resource (ESNR)? Yes No

9. Are any of the following conditions currently present for the AOCs addressed in this submission? (check all that apply):

Groundwater:

- Contaminated ground water in the overburden aquifer
- Contaminated ground water in a confined aquifer
- Contaminated ground water in the bedrock aquifer
- Contaminated ground water in multiple aquifer units
- Multiple distinct ground water plumes
- Contaminated ground water migrating off-site
- Natural background ground water contamination
- Contaminated ground water discharging to surface water or Environmentally Sensitive Natural Resource (ESNR)
- Residual or free product
- Radionuclides

Soil:

- On-site discharge(s) impacting soil off-site
- Chromate Chemical Production Waste/COPR
- Munitions and explosives of concern
- Contaminated soil in the saturated zone
- Historic pesticide impacts to soil
- Residual or free product
- Radionuclides
- Historic Fill
- Natural background only above Impact to Ground Water Cleanup Criteria
- Natural background above Direct Contact Remediation Standards
- Soil contamination in an ESNR

SECTION I. APPLICABLE REMEDIATION STANDARDS

1. Were Default Remediation Standards used for all contaminants? Yes No

If "Yes," check all that apply:

- Direct Contact
- Impact to Ground Water Soil Screening Levels
- Ecological Screening Levels

2. Has compliance averaging been utilized to determine compliance with the Soil Remediation Standards? Yes No

If "Yes," check all that apply:

Compliance Averaging Method Utilized

Pathway	Arithmetic Mean	95 Percent UCL	Spatially Weighted Average	75 Percent/ 10X Procedure
<input type="checkbox"/> Ingestion-Dermal Pathway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Inhalation Pathway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Impact to Ground Water Pathway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Has a compliance option been utilized to determine compliance with the Impact to Ground Water Pathway? (If "Yes," check all that apply)..... Yes No

- Immobile Compounds
- Data evaluation for metals and semi-volatiles
- Data evaluation for volatile organics derived from discharges of petroleum mixtures

4. Was an interim standard used for a contaminant where a standard does not exist? Yes No

5. Were Alternate Remediation Standards used for the Ingestion/Dermal Pathway? Yes No

6. Were Alternate Remediation Standards used for the Inhalation Pathway? Yes No

7. Were Site Specific Standards used for the Impact to Ground Water Pathway? Yes No
If "Yes," check all that apply:

- Soil-Water Partitioning Equation
- SPLP
- Sesoil
- Sesoil/AT123D
- DAF Modification

8. Were Site Specific Ecological Remediation Goals used? Yes No

9. What is the ground water classification for this site as per N.J.A.C. 7:9C? (check all that apply)

- Class I-A
- Class II-A
- Class I-PL Pinelands Protection Area
- Class III-A
- Class I-PL Pinelands Preservation Area
- Class III-B

SECTION J. ALTERNATIVE AND CLEAN FILL USE

- 1. Was alternative fill used? Yes No
- 2. Was clean fill used? Yes No
- 3. Was material sent off-site for use as alternative and/or clean fill?..... Yes No
If "Yes," specify the section/page in the RAR where it states the SRP site receiving this
alternative and/or clean fill: _____
- 4. Was material sent off-site for use as alternative and/or clean fill at a non-SRP site? Yes No
If "Yes," specify the section/page in the RAR where it states the non-SRP site receiving this
alternative and/or clean fill: _____
- 5. Was alternative fill used in excess of the amount required for the remedial action? Yes No
If "Yes," was the NJDEP's preapproval obtained pursuant to N.J.A.C. 7:26E-5.2(b)3? Yes No

SECTION K. REMEDIAL ACTION REPORT INFORMATION

Soils

- 1. Did the remedy include a remedial action for soils?..... Yes No
If "No," skip to **Ground Water**
- 2. Is a restricted use required? Yes No
If "Yes," indicate the type of restriction being implemented. _____
- 3. If applicable, has consent from all involved property owners been obtained (i.e., for institutional or engineering controls)? Yes No
- 4. Was an engineering control required? Yes No
If "Yes," indicate the receptor(s) each engineering control is intended to protect. *(check all that apply)*
 Human Ecological Offsite Impacts

Ground Water

- 5. Did the remedy include a remedial action for ground water?..... Yes No
If "No," skip to **Ecological**
- 6. Is a restricted use required for ground water? Yes No
- 7. Is a revised CEA required? Yes No
- 8. Do any contaminant levels in ground water currently exceed the vapor intrusion ground water trigger? Yes No

Ecological

- 9. Did the remedy include a remedial action for Environmentally Sensitive Natural Resources (ESNRs)? Yes No
If "No," skip to **Indoor Air**
- 10. Was post-remedial sampling performed to determine whether contaminant levels currently meet ecological screening levels or ecological remediation goals?..... Yes No
- 11. Did the remedial action require filling of State open waters or wetlands? Yes No
- 12. Have ecological risk-based remediation goals been developed? Yes No
If "Yes," have the ecological risk-based remediation goals been approved by NJDEP?..... Yes No
- 13. Have Risk Management Decision (RMD) goals been developed? Yes No
If "Yes," have the RMD goals been approved by NJDEP? Yes No

Indoor Air

14. Have any vapor intrusion engineering controls/mitigation systems been installed in order to mitigate a vapor condition in a structure? Yes No

If "Yes," check each type of engineering control that was implemented:

- Subsurface Depressurization System
- Subsurface Ventilation System
- Soil Vapor Extraction System
- HVAC Positive Pressure
- Other (specify): _____

SECTION L. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: Hoffmann - La Roche Inc.

Representative First Name: Thomas Representative Last Name: Lyon

Title: Vice President, Site Head

Phone Number: (973) 562-2210 Ext: _____ Fax: (973) 562-3977

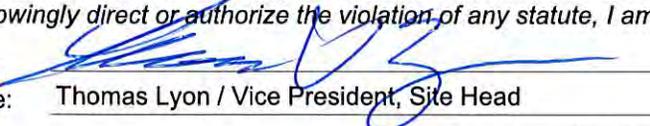
Mailing Address: 340 Kingsland Street

City/Town: Nutley State: New Jersey Zip Code: 07110

Email Address: tom.lyon@roche.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature:  Date: 9/2/14

Name/Title: Thomas Lyon / Vice President, Site Head

No changes to contact information since last submission

SECTION M. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: 585022

First Name: Rebecca Last Name: Hollender

Phone Number: (908) 988-1710 Ext: _____ Fax: (908) 464-3712

Mailing Address: 41 Spring Street

City/Town: New Providence State: New Jersey Zip Code: 07974

Email Address: rhollender@trcsolutions.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with section 14 of P.L.2009 c.60 (N.J.S.A. 58:10C-14), and paragraphs (1) and (2) of subsection b. of section 30 of P.L.2009 c.60 (N.J.S.A. 58:10B=1.3b(1) and (2)).

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

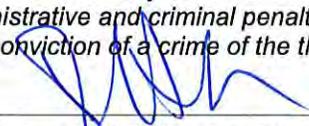
- directly oversaw and supervised all of the referenced remediation, and/or*
- personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature:  Date: 9/2/14

LSRP Name/Title: Rebecca K. Hollender / Principal Consultant

Company Name: TRC Environmental Corporation

No changes to contact information since last submission

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420



New Jersey Department of Environmental Protection
 Site Remediation Program

TRADITIONAL OVERSIGHT REPORT CERTIFICATION FORM

Date Stamp
 (For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: Hoffmann - La Roche Inc. Investigation Area 12 (IA-12)
 List All AKAs: Roche
 Street Address: 340 Kingsland Street
 Municipality: Nutley (Township Borough or City)
 County: Essex Zip Code: 07110
 Program Interest (PI) Number(s): 009949 Case Tracking Number(s): NJD002191211

SECTION B. REPORT INFORMATION

Report Name: Remedial Action Workplan - Investigative Area No. 12 (IA-12)
 Report Date: 09/02/2014
 Federal Traditional Case Type :
 RCRA GPRA 2020 CERCLA/NPL USDOD USDOE
 Other (explain): _____

SECTION C. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: Hoffmann - La Roche Inc.
 Representative First Name: Thomas Representative Last Name Lyon
 Title: Vice President, Site Head
 Phone Number: (973) 562-2210 Ext: _____ Fax: (973) 562-3977
 Mailing Address: 340 Kingsland Street
 City/Town: Nutley State: New Jersey Zip Code: 07110
 Email Address: tom.lyon@roche.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature:  Date: 9/2/14
 Name/Title: Thomas Lyon / Vice President, Site Head

SECTION D. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: 585022
First Name: Rebecca Last Name: Hollender
Phone Number: (908) 988-1710 Ext: _____ Fax: (908) 464-3712
Mailing Address: 41 Spring Street
City/Town: New Providence State: New Jersey Zip Code: 07974
Email Address: RHollender@trcsolutions.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

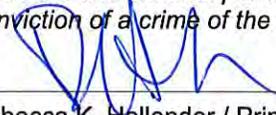
- directly oversaw and supervised all of the referenced remediation, and/or*
- personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: 
LSRP Name/Title: Rebecca K. Hollender / Principal Consultant
Company Name: TRC Environmental Corporation

Date: 9/2/14

Completed forms should be sent to:

Assigned Case Manager
Bureau of Case Management
Site Remediation Program
NJ Department of Environmental Protection
401-05F
PO Box 420
Trenton, NJ 08625-0420

APPENDIX C

Appendix C

Revised Table requested by NJDEP

Table 2
Soil Analytical Results - Manganese
Hoffmann - La Roche Inc. - Nutley, New Jersey
IA-12
Page 6 of 7

TRC Sample No./Depth: B-NS-8-13 B-NS-8(1)-12 B-NS-8(1)-13 B-NS-8(2)-12
Date Sampled: 03/11/14 03/18/14 03/11/14 03/18/14
Lab Sample No.: JB61579-10 JB62264-1 JB61579-1 JB62264-2
Laboratory: Accutest Accutest Accutest Accutest

Metals (ppm)	RDCSRS	NRDCSRS	DIGWSSL				
Manganese	5900	11000	65	8850	469	402	1350

TRC Sample No./Depth: B-NS-8(2)-13 B-NS-8(3)-12 B-NS-8(3)-13
Date Sampled: 03/11/14 03/18/14 03/11/14
Lab Sample No.: JB61579-4 JB62264-3 JB61579-7
Laboratory: Accutest Accutest Accutest

Metals (ppm)	RDCSRS	NRDCSRS	DIGWSSL			
Manganese	5900	11000	65	833	260	249

ND = Not Detected; NA = Not Analyzed.
RDCSRS = NJDEP's Residential Direct Contact Soil Remediation Standard
NRDCSRS = NJDEP's Non-Residential Direct Contact Soil Remediation Standard
DIGWSSL = NJDEP's Default Impact to Ground Water Soil Screening Level
Bold indicates concentration above most stringent criteria.

Table 2
Soil Analytical Results - Mercury
Hoffmann - La Roche Inc. - Nutley, New Jersey
IA-12
Page 7 of 7

TRC Sample No./Depth: I-8-5.2 I-8A-5.2 I-8B-5.2 I-12-4.8
Date Sampled: 01/24/14 01/24/14 01/24/14 01/24/14
Lab Sample No.: JB58501-1 JB58501-4 JB58501-7 JB58501-8
Laboratory: Accutest Accutest Accutest Accutest

Metals (ppm)	<i>RDCSRS</i>	<i>NRDCSRS</i>	<i>IGWSRS</i>				
Mercury	23	65	1.3	0.35	0.36	1	0.22

TRC Sample No./Depth: I-12A-4.8 I-12B-4.8 I-18-3.3 I-18A-3.3
Date Sampled: 01/24/14 01/24/14 01/24/14 01/24/14
Lab Sample No.: JB58501-9 JB58501-10 JB58501-14 JB58501-15R
Laboratory: Accutest Accutest Accutest Accutest

Metals (ppm)	<i>RDCSRS</i>	<i>NRDCSRS</i>	<i>IGWSRS</i>				
Mercury	23	65	1.3	0.11	0.089	0.98	1.3

TRC Sample No./Depth: I-18B-3.3 I-30-7.0 I-30A-7.0 I-30B-7.0
Date Sampled: 01/24/14 01/24/14 01/24/14 01/24/14
Lab Sample No.: JB58501-16 JB58501-2 JB58501-5 JB58501-6
Laboratory: Accutest Accutest Accutest Accutest

Metals (ppm)	<i>RDCSRS</i>	<i>NRDCSRS</i>	<i>IGWSRS</i>				
Mercury	23	65	1.3	0.68	0.37	0.0069 U	0.0074 U

TRC Sample No./Depth: UT-39-3-2.0 UT-39-3A-2.0 UT-39-3B-2.0
Date Sampled: 01/24/14 01/24/14 01/24/14
Lab Sample No.: JB58501-18 JB58501-17 JB58501-20
Laboratory: Accutest Accutest Accutest

Metals (ppm)	<i>RDCSRS</i>	<i>NRDCSRS</i>	<i>IGWSRS</i>			
Mercury	23	65	1.3	0.17	0.078	0.058

ND = Not Detected; NA = Not Analyzed.

RDCSRS = NJDEP's Residential Direct Contact Soil Remediation Standard

NRDCSRS = NJDEP's Non-Residential Direct Contact Soil Remediation Standard

IGWSRS = IA-Specific Impact to Ground Water Soil Remediation Standard

Bold indicates concentration above most stringent criteria.

APPENDIX D

Appendix D

Certified Clean Fill Receipts



weldon quarry
Lake Hopatcong
Phone: 973-663-2010

DATE: 06/06/14 TICKET NO.: 288321

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
RON 201.206.2273

FA-12 (North)

HAULER:
4262 Sanchez#10
TRUCK: 555

GROSS	:	39.93
TARE WEIGHT	:	13.81
NET TONS	:	26.12
LOADS TODAY	:	1
TONS TODAY	:	26.12

288321



DRIVER'S SIGNATURE:

CUSTOMER'S SIGNATURE:

TICKET NO.:288321
TIME OUT :05:27
CLERK :ps
LICENSE: 24257 EXP. 0312



weldon quarry
Lake Hopatcong
Phone: 973-663-2010

DATE: 06/06/14 TICKET NO.: 288391

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
RON 201.206.2273

FA-12 (North)

HAULER:
4262 Sanchez#10
TRUCK: 555

GROSS	:	39.92
TARE WEIGHT	:	13.81
NET TONS	:	26.11
LOADS TODAY	:	3
TONS TODAY	:	78.48

288391



DRIVER'S SIGNATURE:

CUSTOMER'S SIGNATURE:

TICKET NO.:288391
TIME OUT :08:10
CLERK :ps
LICENSE: 24257 EXP. 0312



weldon quarry
Lake Hopatcong
Phone: 973-663-2010

DATE: 06/06/14 TICKET NO.: 288324

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
RON 201.206.2273

FA-12 (North)

HAULER:
4027 R&R BULK TRANSPORT
TRUCK: 502

GROSS	:	39.91
TARE WEIGHT	:	13.66
NET TONS	:	26.25
LOADS TODAY	:	2
TONS TODAY	:	52.37

288324



DRIVER'S SIGNATURE:

CUSTOMER'S SIGNATURE:

TICKET NO.:288324
TIME OUT :05:31
CLERK :ps
LICENSE: 24257 EXP. 0312



weldon quarry

Lake Hopatcong

Phone: 973-663-2010

DATE: 07/02/14 TICKET NO.: 294170

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
JOHN 201.522.5089

HAULER:
0 CUSTOMER PICK-UP
TRUCK: 400

GROSS	:	37.99
TARE WEIGHT	:	16.09
NET TONS	:	21.90
LOADS TODAY	:	2
TONS TODAY	:	43.69

294170



DRIVER'S SIGNATURE:

Donnie P. T701

CUSTOMER'S SIGNATURE:

Backfill for IA-12 7-2-14

TICKET NO.: 294170
TIME OUT : 14:43
CLERK : ps
LICENSE: 24257 EXP. 0312



weldon quarry

Lake Hopatcong

Phone: 973-663-2010

DATE: 07/02/14 TICKET NO.: 294116

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
JOHN 201.522.5089

HAULER:
0 CUSTOMER PICK-UP
TRUCK: 400

GROSS	:	37.92
TARE WEIGHT	:	16.13
NET TONS	:	21.79
LOADS TODAY	:	1
TONS TODAY	:	21.79

294116



DRIVER'S SIGNATURE:

Donnie P. T701

CUSTOMER'S SIGNATURE:

Backfill for IA-12 - 7-2-14

TICKET NO.: 294116
TIME OUT : 12:34
CLERK : ps
LICENSE: 24257 EXP. 0312



weldon quarry

Lake Hopatcong

Phone: 973-663-2010

DATE: 07/02/14 TICKET NO.: 294170

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
JOHN 201.522.5089

HAULER:
0 CUSTOMER PICK-UP
TRUCK: 400

GROSS	:	37.99
TARE WEIGHT	:	16.09
NET TONS	:	21.90
LOADS TODAY	:	2
TONS TODAY	:	43.69

294170



DRIVER'S SIGNATURE:

Donnie P. T701

CUSTOMER'S SIGNATURE:

Backfill for IA-12 7-2-14

TICKET NO.: 294170
TIME OUT : 14:43
CLERK : ps
LICENSE: 24257 EXP. 0312



weldon quarry

Lake Hopatcong

Phone: 973-663-2010

DATE: 07/02/14 TICKET NO.: 294116

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
JOHN 201.522.5089

HAULER:
0 CUSTOMER PICK-UP
TRUCK: 400

GROSS	:	37.92
TARE WEIGHT	:	16.13
NET TONS	:	21.79
LOADS TODAY	:	1
TONS TODAY	:	21.79

294116



DRIVER'S SIGNATURE:

Donnie P. T701

CUSTOMER'S SIGNATURE:

Backfill for IA-12 - 7-2-14

TICKET NO.: 294116
TIME OUT : 12:34
CLERK : ps
LICENSE: 24257 EXP. 0312



weldon quarry
Lake Hopatcong
Phone: 973-663-2010

DATE: 06/06/14 TICKET NO.: 288321

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
RON 201.206.2273

FA-12 (North)

HAULER:
4262 Sanchez#10
TRUCK: 555

GROSS	:	39.93
TARE WEIGHT	:	13.81
NET TONS	:	26.12
LOADS TODAY	:	1
TONS TODAY	:	26.12

288321



DRIVER'S SIGNATURE:

CUSTOMER'S SIGNATURE:

TICKET NO.:288321
TIME OUT :05:27
CLERK :ps
LICENSE: 24257 EXP. 0312



weldon quarry
Lake Hopatcong
Phone: 973-663-2010

DATE: 06/06/14 TICKET NO.: 288391

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
RON 201.206.2273

FA-12 (North)

HAULER:
4262 Sanchez#10
TRUCK: 555

GROSS	:	39.92
TARE WEIGHT	:	13.81
NET TONS	:	26.11
LOADS TODAY	:	3
TONS TODAY	:	78.48

288391



DRIVER'S SIGNATURE:

CUSTOMER'S SIGNATURE:

TICKET NO.:288391
TIME OUT :08:10
CLERK :ps
LICENSE: 24257 EXP. 0312



weldon quarry
Lake Hopatcong
Phone: 973-663-2010

DATE: 06/06/14 TICKET NO.: 288324

SOLD TO: 154850 CREAMER ENVIRONMENTA
JOB NO.: 006
14-0994 7702392 NUTLEY
P.O. NO:
MATERIAL CODE: DGAH
NJDOT DGA/TYPE 5A HOPATCO

DELIVERY INFO:
HOFFMAN LA ROCHE
40 ISABELLA STREET
NUTLEY/CLIFTON
RON 201.206.2273

FA-12 (North)

HAULER:
4027 R&R BULK TRANSPORT
TRUCK: 502

GROSS	:	39.91
TARE WEIGHT	:	13.66
NET TONS	:	26.25
LOADS TODAY	:	2
TONS TODAY	:	52.37

288324



DRIVER'S SIGNATURE:

CUSTOMER'S SIGNATURE:

TICKET NO.:288324
TIME OUT :05:31
CLERK :ps
LICENSE: 24257 EXP. 0312

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.11

DATE OF ISSUE: 07/23/2014

EXPIRATION DATE: 10/23/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00

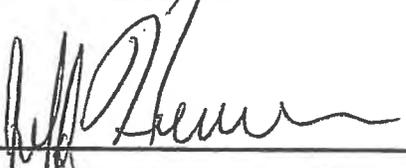
TONNAGE: 0.00

AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

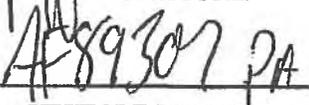
I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE



DATE



VEHICLE LICENSE PLATE

ELECTRONIC SCALE TICKET

7081

Date 7/28/14

Seller Horroth Trucking

Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 893074

Driver ON OFF _____

Weigher Aly M [signature]

ES-47 NCR

ID 29

GROSS 45240 1b IMBOUND

07/28/2014 07:03AM
ID 296

GROSS 69920 1b
TARE 26240 1b RECALLED
NET 43680 1b

07/28/2014 07:27AM

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

ACCOUNT: 94156

SCALE IN/OUT: 1

AUTHORIZATION TO DUMP

F.O.: 11

TRUCK ID: 0F89307

ACCOUNT NO: 14-178 Roche / 1A - 12

DATE/TIME: 07/28/2014 07:54:50 - 07:54:55

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

TOTAL

0.00

IN OPERATOR: KG

OUT OPERATOR: KG

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.10

DATE OF ISSUE: 07/23/2014

EXPIRATION DATE: 10/23/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00

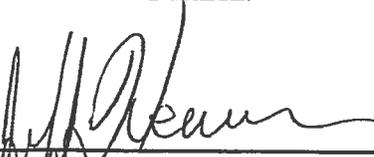
TONNAGE: 0.00

AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

**I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.**



SIGNATURE

7-25-14

DATE

AF89307A

VEHICLE LICENSE PLATE

ELECTRONIC SCALE TICKET

7100

Date 7/25/14

Seller Hermita Trucking

Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 51307DA

Driver ON OFF _____

Weigher Wagner

ES-47 NCR

ID 296

GROSS 26500 lb INBOUND

07/25/2014 07:01AM

ID 296

GROSS 80160 lb

TARE 26500 lb RECALLED

NET 53660 lb

07/25/2014 07:29AM

Office & Landfill Closed 9/1/2014



New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020 Main Office # 201-460-8161

STATEMENT OF SERVICES RENDERED

TICKET: 94097

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 10

TRUCK ID: A8937

ACCOUNT NO: 14-108 / Roche / IA - 12 DATE/TIME: 07/25/2014 07:59:29 - 07:59:50

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.000	0.00	0.00	0.00

TOTAL 0.00

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.9
DATE OF ISSUE: 07/21/2014
EXPIRATION DATE: 10/21/2014

JOB SITE:

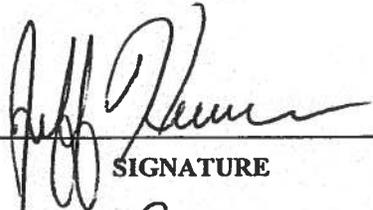
Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-23-14

DATE

AF893077

VEHICLE LICENSE PLATE

SPCOM

ELECTRONIC SCALE TICKET

7070

Date 7/23/14

Seller
Buyer HORWATH TRUCKING

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307

Driver ON OFF _____

Weigher Ally T. J. J. J.

ES-47 NCR

ID 296

GROSS	81040 lb
TARE	26240 lb RECALLED
NET	54800 lb

07/23/2014 08:52AM

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.8
DATE OF ISSUE: 07/21/2014
EXPIRATION DATE: 10/21/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-23-14

DATE

AF89307PA

VEHICLE LICENSE PLATE

ELECTRONIC SCALE TICKET

7068

Date 7/23/14

Seller Horwath Trucking
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307 PA

Driver ON OFF _____

Weigher Ally T W [Signature]

ES-47 NCR

ID 296

GROSS 26240 lb INBOUND

07/23/2014 07:05AM
ID 296

GROSS 78820 lb
TARE 26240 lb RECALLED
NET 52580 lb

07/23/2014 07:27AM

Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020 Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93979

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 9

TRUCK ID: AF89307

ACCOUNT NO: 14-100 / Roche / IA - 12

DATE/TIME: 07/23/2014 00:01:00 - 00:01:15

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

Q-79160

TOTAL 0.00

IN OPERATOR: DAS (28430)

OUT OPERATOR: DAS (28430)

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

FOR WITH
for with

AUTHORIZATION NO: 14-108.7

DATE OF ISSUE: 07/21/2014

EXPIRATION DATE: 10/21/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Lifton / Nutley, NJ

YARDAGE: 17.00

TONNAGE: 0.00

AMOUNT: \$340.00

DATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.


SIGNATURE

7-22-14
DATE

AF8930720
VEHICLE LICENSE PLATE

SFCOM

ELECTRONIC SCALE TICKET

7066

Date 7/22/14

Seller Horowitz Trucking
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307 PA

Driver ON OFF _____

Weigher Ally T. Young

ES-47 NCR

ID 296

GROSS	90780 lb
TARE	26300 lb RECALLED
NET	54480 lb

07/22/2014 01:51PM

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

QUANTITY TO DUMP

DATE RECEIVED: 08/15/07
TO: NEW JERSEY MEADOWLANDS COMMISSION
FROM: [Faint text]

DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL CHARGE
...
...

TOTAL \$ 20

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.6

DATE OF ISSUE: 07/21/2014

EXPIRATION DATE: 10/21/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00

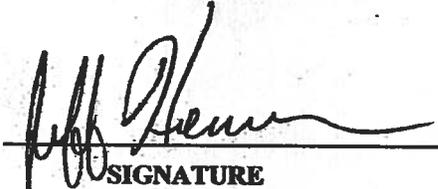
TONNAGE: 0.00

AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

**I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
S FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.**



SIGNATURE

7-22-14

DATE

AF89307 Z

VEHICLE LICENSE PLATE

ELECTRONIC SCALE TICKET

7054

Date 7/22/14

Seller
Buyer HORWITZ TRUCKING

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307 PA

Driver ON OFF _____

Weigher P. Boettig

ES-47 NCR

ID 296

GROSS	80400 lb
TARE	26300 lb RECALLED
NET	54100 lb

07/22/2014 12:38PM

New Jersey Meadowlands Commission Billing Agent



Landfill # 201-998-4020 Main Office # 201-460-8161

STATEMENT OF SERVICES RENDERED

TICKET: 02044

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 5

TRUCK ID: AF889067

ACCOUNT NO: 14-108 / Roche / IA - 12

DATE/TIME: 07/22/2014 13:01:23 - 13:01:32

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

TOTAL 0.00

IN OPERATOR: JJ

OUT OPERATOR: JJ

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.5
DATE OF ISSUE: 07/21/2014
EXPIRATION DATE: 10/21/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-22-14

DATE

AF89307 PA

VEHICLE LICENSE PLATE

New Jersey Meadowlands Commission Billing Agent



Landfill # 201-998-4020 Main Office # 201-460-8161

STATEMENT OF SERVICES RENDERED

TICKET: 93931

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O. # 5

TRUCK ID: AF89307

ACCOUNT NO: 14-108 / Roche / IA - 12

DATE/TIME: 07/22/2014 11:25:18 - 11:25:25

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

IN OPERATOR: RJD

TOTAL 0.00
OUT OPERATOR: RJD

ELECTRONIC SCALE TICKET

7053

SPCOM

Date 7/22/14

Seller
Buyer Horowitz Trucking

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF3E307 PA

Driver ON OFF _____

Weigher _____

ES-47 NCR

ID 296

GROSS	81100 lb
TARE	26300 lb RECALLED
NET	54800 lb

07/22/2014 11:04AM

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.4

DATE OF ISSUE: 07/21/2014

EXPIRATION DATE: 10/21/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00

TONNAGE: 0.00

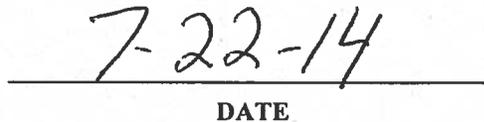
AMOUNT: \$340.00

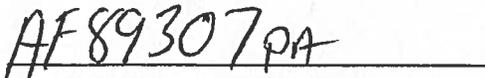
RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.


SIGNATURE


DATE


VEHICLE LICENSE PLATE

0
Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93920

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.D. : 4

TRUCK ID: AFB9307

ACCOUNT NO: 14-108 / Roche / IA - 12

DATE/TIME: 07/22/2014 10:14:07 - 10:14:18

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

3-76460

TOTAL 0.00

IN OPERATOR: DOC (20470)

OUT OPERATOR: DOC (20470)

ELECTRONIC SCALE TICKET

7049

Date 7/22/14

Seller
Buyer Howarth Trucking

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AP 89307 PA
Kearns

Driver ON OFF _____

Weigher Wey T W...

ES-47 NCR

ID 296

GROSS 76120 lb
TARE 26300 lb RECALLED
NET 49820 lb

07/22/2014 09:51AM

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.3
DATE OF ISSUE: 07/11/2014
EXPIRATION DATE: 10/11/2014

JOB SITE:

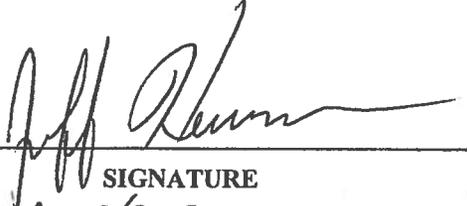
Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

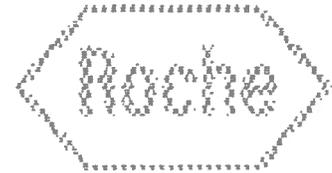
CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.


SIGNATURE

7-16-14
DATE

AF89307 PR
VEHICLE LICENSE PLATE



HOFFMANN-LA ROCHE

INDEMNIFICATION

Hoffmann-La Roche Inc. warrants that the soil delivered to the New Jersey Meadowlands Commission includes nothing other than soil represented in the submitted analytical information for property located at 340 Kingsland Street, Nutley, NJ and which has also been approved by the NJMC for use as cover material. Hoffmann-La Roche Inc. agrees to indemnify the NJMC and the facility operator against any and all claims, losses, or damages caused in whole or in part by breach of this warranty. Hoffmann-La Roche Inc. understands that should the NJMC or the landfill operator's personnel deem any or all of this material unacceptable as soil cover for the landfill at any time it will be rejected. Hoffmann-La Roche Inc. understands that should cover material requirements change at the NJMC facility, the NJMC will discontinue acceptance of this soil. Further, it is understood that if any of the soil is judged unacceptable or refused for any reason by the NJMC or the landfill operator, the soil shall be redirected to the appropriate county facility.

Signature of owner: 

7-16-14

TRC Ticket Number IA 12-AOC N/S-5

New Jersey Meadowlands Commission Billing Agent



Landfill # 201-998-4020 Main Office # 201-460-8161

DEPARTMENT OF ENVIRONMENTAL PROTECTION

TICKET: 93713

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 3

TRUCK ID: AF89307

ACCOUNT NO: 14-108 / Roche / 1A - 12

DATE/TIME: 07/16/2014 08:22:49 - 08:24:38

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

IN OPERATOR: JBC (SG-6181)

TOTAL 0.00
OUT OPERATOR: JBC (SG-6181)

SPCOM

ELECTRONIC SCALE TICKET

7168

Date 7/16/14

Seller
Buyer H.W. Trucking

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307 PA

Driver ON OFF _____

Weigher Ally Wiggins

ES-47 NCR

ID 296

GROSS 26440 lb INBOUND

07/16/2014 06:12AM

ID 296

GROSS 77020 lb

TARE 26440 lb RECALLED

NET 50580 lb

07/16/2014 06:52AM

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.2
DATE OF ISSUE: 07/11/2014
EXPIRATION DATE: 10/11/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



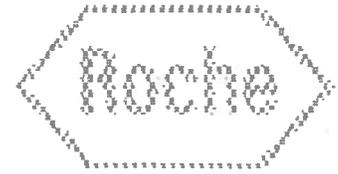
SIGNATURE

7-15-14

DATE

AF89307

VEHICLE LICENSE PLATE



HOFFMANN-LA ROCHE

INDEMNIFICATION

Hoffmann-La Roche Inc. warrants that the soil delivered to the New Jersey Meadowlands Commission includes nothing other than soil represented in the submitted analytical information for property located at 340 Kingsland Street, Nutley, NJ and which has also been approved by the NJMC for use as cover material. Hoffmann-La Roche Inc. agrees to indemnify the NJMC and the facility operator against any and all claims, losses, or damages caused in whole or in part by breach of this warranty. Hoffmann-La Roche Inc. understands that should the NJMC or the landfill operator's personnel deem any or all of this material unacceptable as soil cover for the landfill at any time it will be rejected. Hoffmann-La Roche Inc. understands that should cover material requirements change at the NJMC facility, the NJMC will discontinue acceptance of this soil. Further, it is understood that if any of the soil is judged unacceptable or refused for any reason by the NJMC or the landfill operator, the soil shall be redirected to the appropriate county facility.

Signature of owner:  7-15-14

TRC Ticket Number: IA 12-AOC N/S-4

Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93704

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 2

TRUCK ID: AF89307

ACCOUNT NO: 14-100 / Roche / IA - 12

DATE/TIME: 07/15/2014 14:48:00 - 14:48:13

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00
TOTAL					0.00

ELECTRONIC SCALE TICKET

7012

Date 7/15/14

Seller Normal Trucking
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 893070A

Driver ON OFF _____

Weigher Ally T. Wynn

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-108.1

DATE OF ISSUE: 07/11/2014

EXPIRATION DATE: 10/11/2014

JOB SITE:

Roche / IA - 12 North
Route 3
Clifton / Nutley, NJ

YARDAGE: 17.00

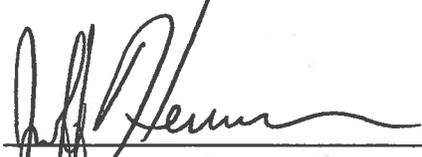
TONNAGE: 0.00

AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-15-14

DATE

AF89307 PA

VEHICLE LICENSE PLATE



INDEMNIFICATION

Hoffmann-La Roche Inc. warrants that the soil delivered to the New Jersey Meadowlands Commission includes nothing other than soil represented in the submitted analytical information for property located at 340 Kingsland Street, Nutley, NJ and which has also been approved by the NJMC for use as cover material. Hoffmann-La Roche Inc. agrees to indemnify the NJMC and the facility operator against any and all claims, losses, or damages caused in whole or in part by breach of this warranty. Hoffmann-La Roche Inc. understands that should the NJMC or the landfill operator's personnel deem any or all of this material unacceptable as soil cover for the landfill at any time it will be rejected. Hoffmann-La Roche Inc. understands that should cover material requirements change at the NJMC facility, the NJMC will discontinue acceptance of this soil. Further, it is understood that if any of the soil is judged unacceptable or refused for any reason by the NJMC or the landfill operator, the soil shall be redirected to the appropriate county facility.

Signature of owner:  7-15-14

TRC Ticket Number: IA 12-AOC N/S-2

ELECTRONIC SCALE TICKET

7011

Date 7/15/14

Seller Mac W/Hk Truckers

Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks ~~AF~~ AF 89307 PA

Driver ON OFF _____

Weigher WHS IV jmw

ES-47 NCR

ID 296

GROSS 75520 lb
TARE 26480 lb RECALLED
NET 50040 lb

07/15/2014 12:03PM

Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93694

SCALE IN/OUT:

AUTHORIZATION TO DUMP

P.O. # 2

TRUCK ID: AF89307

ACCOUNT NO: 14-109 / Roche / IA - 12

DATE/TIME: 07/15/2014 11:52:45 - 11:52:52

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	DY	17.00	Yards 0.00	0.00	0.00

TOTAL 0.00

IN OPERATOR: KG

OUT OPERATOR: KG

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

FOR WITH
lorwith

AUTHORIZATION NO: 14-109.1

DATE OF ISSUE: 07/11/2014

EXPIRATION DATE: 10/11/2014

JOB SITE:

Roche / IA - 12 South
Route 3
Clifton / Nutley, NJ, NJ

YARDAGE: 17.00

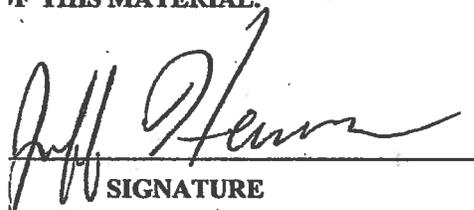
TONNAGE: 0.00

AMOUNT: \$340.00

DATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

**CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.**


SIGNATURE

7-15-14
DATE

AF89307
VEHICLE LICENSE PLATE



INDEMNIFICATION

Hoffmann-La Roche Inc. warrants that the soil delivered to the New Jersey Meadowlands Commission includes nothing other than soil represented in the submitted analytical information for property located at 340 Kingsland Street, Nutley, NJ and which has also been approved by the NJMC for use as cover material. Hoffmann-La Roche Inc. agrees to indemnify the NJMC and the facility operator against any and all claims, losses, or damages caused in whole or in part by breach of this warranty. Hoffmann-La Roche Inc. understands that should the NJMC or the landfill operator's personnel deem any or all of this material unacceptable as soil cover for the landfill at any time it will be rejected. Hoffmann-La Roche Inc. understands that should cover material requirements change at the NJMC facility, the NJMC will discontinue acceptance of this soil. Further, it is understood that if any of the soil is judged unacceptable or refused for any reason by the NJMC or the landfill operator, the soil shall be redirected to the appropriate county facility.

Signature of owner:

A handwritten signature in black ink, appearing to be "V. J. [unclear]", written over a horizontal line.

TRC Ticket Number: JA 12-AOC N/S-3

7-15-14

LOAD #1

845

Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93695

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 1

TRUCK ID: AF89307

ACCOUNT NO: 14-109 / Roche / IA - 12

DATE/TIME: 07/15/2014 09:25:27 - 09:25:38

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	BURCHARGE	TOTAL CHARGE
--------	------------	----------	-------------	-----------	--------------

NA	CY	17.80	Yards 0.00	0.00	0.00
----	----	-------	------------	------	------

B-80840

TOTAL 0.00

IN OPERATOR: JAC (20430)

OUT OPERATOR: JAC (20430)

ELECTRONIC SCALE TICKET

7008

Date _____

Seller _____
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks _____

Driver ON OFF _____

Weigher _____

ES-47 NCR

ID 296

GROSS 26480 lb INBOUND

07/15/2014 06:50AM
ID 296

GROSS 80980 lb

TARE 26480 lb RECALLED

NET 54500 lb

07/15/2014 07:42AM

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-109.2
DATE OF ISSUE: 07/11/2014
EXPIRATION DATE: 10/11/2014

JOB SITE:

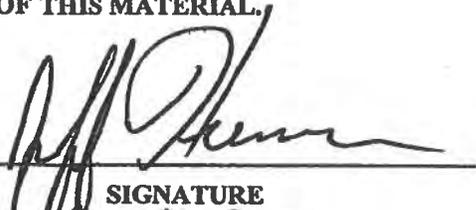
Roche / IA - 12 South
Route 3
Clifton / Nutley, NJ, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-15-14

DATE

AF89307

VEHICLE LICENSE PLATE



HOFFMANN-LA ROCHE

INDEMNIFICATION

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Signature of owner:

7-15-14

TRC Ticket Number: IA 12-AOC N/S-1

ELECTRONIC SCALE TICKET

7009

Date 7/15/14

Seller Horwith Trucking
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307 PA

Driver ON OFF _____

Weigher WJZ

ES-47 NCR

ID 296

GROSS 67120 lb
TARE 26480 lb RECALLED
NET 40640 lb

07/15/2014 09:49AM

New Jersey Meadowlands Commission Billing Agent



Landfill # 201-998-4020 Main Office # 201-460-8161
STATEMENT OF SERVICES RENDERED

TICKET: 53833

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 1

TRUCK ID: AF89307

ACCOUNT NO: 14-100 / Roche / IA - 12

DATE/TIME: 07/15/2014 13:24:45 - 13:24:53

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

IN OPERATOR: JJ

OUT OPERATOR: JJ

TOTAL 0.00

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-109.3
DATE OF ISSUE: 07/11/2014
EXPIRATION DATE: 10/11/2014

JOB SITE:

Roche / IA - 12 South
Route 3
Clifton / Nutley, NJ, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-16-14

DATE

AF893072#

VEHICLE LICENSE PLATE

SFCOM

ELECTRONIC SCALE TICKET

7169

Date 7/16/14

Seller Hor With Trucking
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 39307 DA

Driver ON OFF _____

Weigher *Alex J. Williams*

ES-47 NCR

ID 296

GROSS	78520 lb
TARE	26440 lb RECALLED
NET	52080 lb

07/16/2014 09:41AM

Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93723

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 3

TRUCK ID: AF29307

ACCOUNT NO: 14-109 / Roche / IA - 12

DATE/TIME: 07/16/2014 10:08:49 - 10:08:57

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

B-78600

TOTAL

0.00

IN OPERATOR: DAS (22430)

OUT OPERATOR: DAS (22430)

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-109.4
DATE OF ISSUE: 07/11/2014
EXPIRATION DATE: 10/11/2014

JOB SITE:

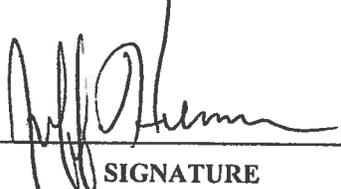
Roche / IA - 12 South
Route 3
Clifton / Nutley, NJ, NJ

YARDAGE: 17.00
TONNAGE: 0.00
AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

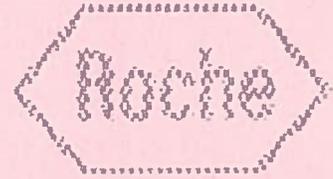
7-16-14

DATE

AF89307 PA

VEHICLE LICENSE PLATE

7



HOFFMANN-LA ROCHE

INDEMNIFICATION

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Signature of owner: Peter Chapman 7-16-14

TRC Ticket Number: IA 12-AOC N/S-7

ELECTRONIC SCALE TICKET

7170

Date 7/16/14

Seller Hor W. Th Trucking
Buyer _____

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89 307 PA

Driver ON OFF _____

Weigher Ally T. Wiggins
ES-47 NCR

ID 296

GROSS	78700 lb
TARE	26440 lb RECALLED
NET	52260 lb

07/16/2014 10:05AM

New Jersey Meadowlands Commission Billing Agent



Landfill # 201-998-4020

Main Office # 201-460-8161

STATEMENT OF SERVICES RENDERED

TICKET: 93729

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O.: 4

TRUCK ID: AF89307

ACCOUNT NO: 14-109 / Roche / IA - 12

DATE/TIME: 07/16/2014 11:30:34 - 11:30:44

COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

IN OPERATOR: RJD

OUT OPERATOR: RJD TOTAL 0.00

NJMC ESCROW OPERATIONS DEPT.
1 DEKORTE PARK PLAZA
LYNDHURST, NJ 07071

AUTHORIZATION TO DUMP COVER BY THE YARD

HAULER:

HORWITH
Horwith

AUTHORIZATION NO: 14-109.5

DATE OF ISSUE: 07/11/2014

EXPIRATION DATE: 10/11/2014

JOB SITE:

Roche / IA - 12 South
Route 3
Clifton / Nutley, NJ, NJ

YARDAGE: 17.00

TONNAGE: 0.00

AMOUNT: \$340.00

RATE AS OF: July 2014

CERTIFICATION BY CUSTOMER:

I CERTIFY THAT THE MATERIAL BEING DELIVERED TO THE NJMC:
IS FROM THE JOB SITE SHOWN ABOVE AND IN
ACCORDANCE WITH NJMC'S TERMS AND CONDITIONS FOR ACCEPTANCE
OF THIS MATERIAL.



SIGNATURE

7-16-14

DATE

AF89307 PA

VEHICLE LICENSE PLATE

#8



HOFFMANN-LA ROCHE

INDEMNIFICATION

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Signature of owner: Peter Chapman 7-16-14

TRC Ticket Number: IA 12-AOC N/S-8

SFCOM

ELECTRONIC SCALE TICKET

7173

Date 2/16/14

Seller
Buyer Herwin Trucking

Address _____

City _____

State _____ Zip _____

Commodity _____

Price _____

Remarks AF 89307 PA

Driver ON OFF _____

Weigher Ally T Njirumony

ID 296

GROSS 79760 lb
TARE 26440 lb RECALLED
NET 53320 lb

07/16/2014 11:41AM

Office & Landfill Closed 9/1/2014

New Jersey Meadowlands Commission Billing Agent

Landfill # 201-998-4020

Main Office # 201-460-8161



STATEMENT OF SERVICES RENDERED

TICKET: 93734

SCALE IN/OUT: /

AUTHORIZATION TO DUMP

P.O. : 5

TRUCK ID: AF89307

ACCOUNT NO: 14-109 / Roche / IA - 12

DATE/TIME: 07/16/2014 13:00:48 - 13:00:55

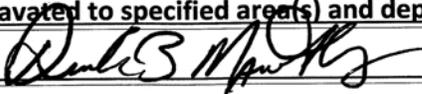
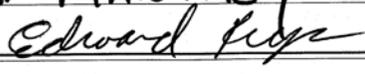
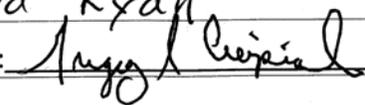
COMMENT:

ORIGIN	WASTE TYPE	QUANTITY	TIPPING FEE	SURCHARGE	TOTAL CHARGE
NA	CY	17.00	Yards 0.00	0.00	0.00

TOTAL

0.00

SOIL REMEDIATION EXCAVATION CHECKLIST ROCHE, NUTLEY, NJ

Sordoni Rep: <u>Mike Vizzoni</u> Date: <u>6/6/14, 6/30 to 7/3/14</u>	
Excavation Contr.: <u>CEI</u> Foreman/Super <u>Paul/John Castellani</u>	
Work Area: <u>IA-12 "North" area</u> B.M. Elevation: <u>123.30</u>	
Proposed BOE: <u>110.05</u> Actual BOE: <u>109.10</u>	
TRC Field Rep: <u>ED Ryan</u>	
Osiris Field Rep: <u>Derek Muntney</u>	
<input checked="" type="checkbox"/>	Work Plan - Final Released
<input checked="" type="checkbox"/>	Industrial Hygienist HASP
<input checked="" type="checkbox"/>	Contractor - One Call
<input checked="" type="checkbox"/>	Osiris - Mark out per Work Plan
<input checked="" type="checkbox"/>	Roche Excavation Permit
<input checked="" type="checkbox"/>	Contractor Mobilization & Site Set Up
<input checked="" type="checkbox"/>	Industrial Hygienist Mobilization
<input checked="" type="checkbox"/>	Contractor Excavate per Work Plan & Mark Out
<input checked="" type="checkbox"/>	Osiris Survey of Limits of Excavation
<input checked="" type="checkbox"/>	TRC Field Observation
<input checked="" type="checkbox"/>	TRC Reviews Survey & Field Report
<input checked="" type="checkbox"/>	Excavation Complete/Approved for Backfill
OR	
<input checked="" type="checkbox"/>	Continue Excavation per TRC Direction
<input checked="" type="checkbox"/>	Demobilize Industrial Hygienist
<input checked="" type="checkbox"/>	Complete Backfill Operations
<input checked="" type="checkbox"/>	Contractor Breakdown / Demobilize
<input checked="" type="checkbox"/>	All soil has been excavated to specified area(s) and depth(s).
	Osiris Approval (sign): 
	Print name: <u>DEREK B. MUNTNEY</u>
	TRC Approval (sign): 
	Print name: <u>Edward Ryan</u>
	Roche Approval (sign):  7/7/14
	Print name:

BOE = Bottom of Excavation

SOIL REMEDIATION EXCAVATION CHECKLIST ROCHE, NUTLEY, NJ

Sordoni Rep: <u>Mike Vizzoni</u> Date: <u>6-3-14</u>	
Excavation Contr.: <u>Creamer Environmental</u> Foreman/Super <u>Paul/Ron Allen</u>	
Work Area: <u>IA-12 north & south</u> B.M. Elevation: <u>123.90</u>	
Proposed BOE: <u>119.90</u> Actual BOE: <u>119.90 - 119.75</u>	
TRC Field Rep: <u>Jilliana Walsh</u>	
Osiris Field Rep: <u>Derek Mantley</u>	
<input checked="" type="checkbox"/>	Work Plan - Final Released
<input checked="" type="checkbox"/>	Industrial Hygienist HASP
<input checked="" type="checkbox"/>	Contractor - One Call
<input checked="" type="checkbox"/>	Osiris - Mark out per Work Plan
<input checked="" type="checkbox"/>	Roche Excavation Permit
<input checked="" type="checkbox"/>	Contractor Mobilization & Site Set Up
<input checked="" type="checkbox"/>	Industrial Hygienist Mobilization
<input checked="" type="checkbox"/>	Contractor Excavate per Work Plan & Mark Out
<input checked="" type="checkbox"/>	Osiris Survey of Limits of Excavation
<input checked="" type="checkbox"/>	TRC Field Observation
<input checked="" type="checkbox"/>	TRC Reviews Survey & Field Report
<input checked="" type="checkbox"/>	Excavation Complete/Approved for Backfill
OR	
<input checked="" type="checkbox"/>	Continue Excavation per TRC Direction
<input checked="" type="checkbox"/>	Demobilize Industrial Hygienist
<input checked="" type="checkbox"/>	Complete Backfill Operations
<input checked="" type="checkbox"/>	Contractor Breakdown / Demobilize
All soil has been excavated to specified area(s) and depth(s).	
Osiris Approval (sign):	<u>[Signature]</u>
Print name:	<u>DEREK B. MANTLEY</u>
TRC Approval (sign):	<u>[Signature]</u>
Print name:	<u>MARTIN P. Mac DONALD</u>
Roche Approval (sign):	<u>[Signature]</u>
Print name:	<u>Greg Ciupiel</u>

BOE = Bottom of Excavation

APPENDIX E

Appendix E

Air Monitoring Data



Environmental Health Investigations, Inc.

655 West Shore Trail
Sparta, New Jersey 07871

Phone/Fax: 973-729-5649
www.ghi-inc.com

July 16, 2014

Mr. Keith Vastola
Sordoni Construction Company
409 Main Street
Chester, NJ 07930

Re: Soil Remediation Monitoring
Investigative Area 12 (1A-12)
1A-12 North & 1A-12 South
Hoffmann-La Roche
Nutley, NJ Facility

Dear Mr. Vastola:

Enclosed you will find our report of findings concerning the soil remediation excavation monitoring provided during soil remediation operations conducted at Investigative Area 12 (IA-12) with excavation areas identified as IA-12 North and IA-12 South located on the Hoffmann-La Roche Facility Campus at 340 Kingsland Street Nutley, NJ between June 3, 2014 and July 1, 2014.

Please let me know if you have any questions.

Very truly yours,

A handwritten signature in cursive script, appearing to read "William S. Kerbel".

William S. Kerbel, CIH
President



Environmental Health Investigations, Inc.

655 West Shore Trail
Sparta, New Jersey 07871

Phone/Fax: 973-729-5649
www.ghi-inc.com

REPORT OF FINDINGS

Soil Remediation Monitoring Services

Location:

**Hoffmann-La Roche, Inc.
Investigative Area 12 (1A-12)
Excavation Areas 1A-12 South & 1A-12 North
340 Kingsland Street
Nutley, NJ 07110**

On Behalf Of:

**Sordoni Construction Company
409 Main Street
Chester, NJ 07930**

**Monitoring Dates: June 3 thru July 1, 2013
Report Date: July 16, 2014**

EHI Project #: 0755-5066A

Sordoni @ Hoffmann-La Roche, Inc.
Investigative Area 12 (IA-12)
Nutley, NJ
1.0 Introduction

Soil Excavation Monitoring
June 3 - July 1, 2014
EHI Project #: 0755-5066A

Environmental Health Investigations, Inc. (EHI) was retained by Sordoni Construction Company of 409 Main Street Chester, NJ on behalf of Hoffmann-La Roche Corporation to provide on-site health and safety monitoring services during work activity at Investigative Area 12 (IA-12) – Soil Excavation Area South and Soil Excavation Area North located at the Hoffmann-La Roche Campus at 340 Kingsland Street Nutley, NJ.

Creamer Environmental was the excavation contractor that performed the digging and hauling of the contaminated soil. EHI provided on site health and safety services including real time monitoring for: total airborne particulate; total volatile organic compounds; carbon monoxide; hydrogen sulfide; mercury vapor; percent lower explosive limit; and percent oxygen during the digging operation. In addition, industrial hygiene personal and/or area sampling for: poly aromatic hydrocarbons (PAHs); arsenic; mercury; and volatile organic hydrocarbons (VOCs) was performed. All work was performed between June 3, 2014 and July 1, 2014. EHI was represented on site by Howard Leemann, CIH.

2.0 Project Scope

The objective of this soil remediation excavation monitoring project was to ensure that all soil remediation activities included in the project were in compliance with the health and safety requirements of the project Health & Safety Plan (HASP) prepared by Environmental Health Investigations, Inc., dated May 16, 2014.

EHI provided a Site Health and Safety Officer (SSHO) who remained on site throughout the operation. The SSHO's duties included the continuous measurement of: total airborne

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particulate (T. Part); total volatile organic compounds (TVOC); carbon monoxide (CO); hydrogen sulfide (H₂S); mercury vapor (Hg); and percent lower explosive limit (%LEL), potentially being released during soil disturbance. Ambient oxygen (O₂) levels were also monitored. In addition, EHI was responsible for overall safety at the site and served as the site's point of contact for safety and health matters in accordance with the site HASP.

In addition to real time monitoring, industrial hygiene sampling including personal and/or area sampling was conducted for poly aromatic hydrocarbons (PAHs); arsenic; mercury; and volatile organic hydrocarbons (VOCs) at Excavation Area 12 – South.

Contaminants present at the site according to information provided by Sordoni Construction included soils contaminated with the poly aromatic hydrocarbons (PAHs) benzo (a) pyrene, & naphthalene; volatile organic compounds trichloroethene & tetrachloroethene; mercury, and arsenic. The contaminated soils were present in two relatively small areas located near the First Avenue entrance to Parking Lot 902 (approx. 35 cubic yards) and just outside the Gate 54 facility entrance at US Route 3 (approx. 75 cubic yards)

3.0 Procedures

A total of seven parameters were continuously monitored using real time instruments throughout all soil excavation and most backfilling operations associated with this soil remediation project.

Measurements were primarily made at the point where the backhoe bucket used during this operation made contact with the soil and or other backfill materials, as this position provided the presumed worst case scenario.

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Monitoring was conducted throughout active excavation operations including all digging and most backfilling. Readings observed during excavation were recorded at various intervals mostly dependent upon specific activities performed such as digging, truck loading, and backfilling. The readings were recorded on field data sheets designed for this purpose. The peak concentration during each specific work activity was recorded.

Total airborne particulate was monitored during this project via the use of a Model pDR-1000AN/1200 Personal/DATARAM Particulate Monitor CK manufactured by Thermo Fisher Scientific. Total airborne particulate was monitored as a surrogate for poly aromatic hydrocarbons (PAHs) and heavy metals such as arsenic since there are no real time instruments available to monitor these parameters directly. PAHs, when present, are likely to have both a solid and vapor phase. Only the solid phase was considered during monitoring due to the inability to measure the vapor phase with direct reading instruments. An action level of five milligrams per cubic meter (5 mg/m^3) was established in the HASP for total airborne particulate to provide a sufficient safety factor for combined exposure to PAHs and arsenic during this project. This instrument has a lower detection limit of 0.001 mg/m^3 . Calibration of this particulate measuring instrument was limited to performing at least daily zeroing via the use of manufacturer provided clean chamber and zero air filter system in accordance with manufacturers recommended procedures.

A hand held portable Photo-Ionization Detector (PID) MiniRAe 3000 was used to monitor total volatile organic compounds at the site. This direct reading instrument measures concentrations of total volatile organic compounds (TVOCs) in parts per million (ppm) and has a

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lower limit of detection of 0.1 ppm. An action level of five parts per million (5 ppm) was established in the HASP for total volatile organic compounds to provide a sufficient safety factor exposure to VOCs during this project. The photo-ionization detector was calibrated and maintained in accordance with manufacturer recommendations. This included a zero air calibration, test gas calibration using 100 ppm isobutylene, and periodic bump testing.

Lower explosive limit, oxygen, carbon monoxide, and hydrogen sulfide were monitored using a QRAEII Gas Meter (4 Gas Meter) and or a Gas Alert MX four gas meter. Readings obtained using the QRAE II and Gas Alert were also recorded on the data sheet along with the total particulate and total volatile organic compound readings. The four gas meters were calibrated using a single cylinder containing the four gases being monitored. Bump testing was also preformed periodically before and during use each day in accordance with manufacturer recommendations. Action levels of twenty-five parts per million (25 ppm) for carbon monoxide and ten parts per million (10 ppm) for hydrogen sulfide were established in the HASP in the event that these contaminants were observed at the work area. The source of the carbon monoxide would be the equipment being used at the site and the source of hydrogen sulfide would be any anaerobic microbial activity encountered at the site. While no action level for % LEL was established in the HASP for this project, typically any detectable reading of % LEL would trigger an investigation into the source of this level of explosive gases. Likewise no action level was established for oxygen level since the project was conducted outdoors and there was no expectation that the O₂ level would fall below the normal ambient background level of twenty point nine percent (20.9%).

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Airborne mercury vapor was measured with a Jerome Model 431X Mercury Vapor Analyzer. This instrument provides real time measurements on a semi continuous basis and can provide airborne mercury vapor measurements in milligrams per cubic meter (mg/m^3) with a lower detection limit for mercury vapor of $0.001 \text{ mg}/\text{m}^3$. An action level of $0.1 \text{ mg}/\text{m}^3$, the current OSHA permissible exposure limit, was established for mercury vapor in the project HASP as mercury was a suspect soil contaminant in the area. The Jerome Model 431X Mercury Vapor Analyzer was calibrated and maintained in accordance with manufacturer recommendations. This included, at least daily, a Filament Regeneration or “film heat procedure” to maintain the instrument sensor in optimal condition for sampling.

The real time instrument readings for each day are provided at the end of this report (See Appendix A - Real Time Instrument Monitoring Results).

In addition to real time air monitoring, industrial hygiene sampling was conducted at the IA-12 Excavation Area - South for: poly aromatic hydrocarbons (PAHs); arsenic; mercury; and volatile organic compounds (VOCs). Passive badge type monitors were used to provide personal samples for volatile organic compounds and mercury. Traditional industrial hygiene sampling methods were used to collect area samples for poly aromatic hydrocarbons and arsenic. (See Appendix B – Laboratory Results for Industrial Hygiene Samples)

4.0 Observations

June 3, 2014

EHI’s Howard Leemann, CIH arrived on site and prepared air monitoring equipment for sampling. The VOC monitor was zeroed and calibrated with 100 ppm Isobutene; the aerosol

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monitor was zeroed using manufacturer supplied plastic bag and zero air filtration hand pump; the 4 Gas Meter was bump tested with calibration gas mixture provided by the manufacturer; the mercury monitor was zeroed in the field with recommended regeneration procedure performed at home earlier in the morning since this procedure requires AC electric power. All units checked out and were functioning as intended by manufactures.

Creamer moved their heavy equipment to the first location identified as IA -12 Excavation Area - South located on First Avenue at the entrance to Parking Lot 902. H. Leemann of EHI set up industrial hygiene area samples for poly aromatic hydrocarbons and arsenic on the southeast side of the area to be excavated. In addition, personal industrial hygiene samples (badge samples) are started on Creamer employees Jose Costa (VOC badge) and Peter Pawlowski (Hg Vapor badge) to provide shift long Occupational Safety & Health Administration (OSHA) samples for this excavation project.

Creamer removed the pavement from the designated area and began to remove soil using a large backhoe. Contaminated soil was loaded into a waiting dump truck after the swing path of the backhoe bucket was protected from contaminated soil via the deployment of plastic sheeting between the edge of the hold and the dump truck. A clay storm drain pipe was broken during the removal of soil and it was removed along with the contaminated soil. The existing storm sewer basin was also removed and loaded into the dump truck to be disposed of as contaminated waste.

Brief volatile organic compound (VOC) readings as high as 11.4 parts per million were observed at the excavation site immediately after the backhoe re-started after fueling. The VOC reading lasted only approx. 15 seconds and VOC readings returned to less than 0.1 ppm the

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lower detection limit of the instrument.

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Hand digging was performed by Creamer personnel during the removal of existing pipe and preparation for the re-installation of new pipe and catch basin that replaced the contaminated structures. Creamer workers wore disposable coveralls (Tyvek Suits), rubber boots, and plastic gloves while in the hole.

A brief VOC reading of 1.4 ppm was observed in the excavated hole when a section of storm sewer pipe was removed. This reading was checked further by allowing the Creamer laborer to place the VOC monitoring instrument directly inside the pipe. The VOC reading dropped to 0.3 ppm within a few minutes and eventually to <0.1 ppm within approx. an hour.

Upon completion of digging and reconstruction of storm sewer catch basin, non-disposable rubber boots worn by Creamer laborers while in the hole were decontaminated (washed with water) on site via the use of a large plastic wash basin and stiff bristle brush to remove soil from the boots. Decontamination water and disposable PPE were placed in the dump truck along with contaminated soil for temporary storage at the soil storage area. In addition, the backhoe bucket was decontaminated via the removal of all residual soil and washing the bucket with water. Waste from this bucket decontamination and the plastic sheeting used to protect the pavement between the hole and the dump truck were placed in the dump truck for disposal as contaminated waste.

Upon verification by the survey team that all contaminated soil and sewer materials had been removed, Creamer began to reconstruct / re-install the storm sewer catch basin and pipe that had been removed. Creamer backfilled the excavated hole with quarry process (QP), once

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reconstruction activities had been completed.

Industrial hygiene samples were ended at the end of the shift (approx. 15:05 hours) and samples were prepared to shipment to the industrial hygiene laboratory (Galson Labs of East Syracuse, NY).

All real time airborne particulate concentrations measured during the removal of soil at IA-12 Excavation Area - South were below the HASP action level for particulate of 5 mg/m³. In addition, VOC concentrations were also less than the HASP action level for VOCs of 5 ppm with exception noted during refueling of the backhoe. Hydrogen sulfide, carbon monoxide and mercury vapor concentrations all remained undetected throughout the soil removal and backfilling operation. Based on the result of the air monitoring obtained during digging, truck loading, and backfilling, no changes in the level of personal protection equipment (PPE) were required and PPE remained at LEVEL D as per the project HASP.

June 6, 2014

EHI's H. Leemann, CIH arrived on site and prepared air monitoring equipment for sampling. The VOC monitor was zeroed and calibrated with 100 ppm Isobutene; the aerosol monitor was zeroed using manufacturer supplied plastic bag and zero air filtration hand pump; the 4 Gas Meter was bump tested with calibration gas mixture provided by the manufacturer; the mercury monitor was zeroed in the field with recommended regeneration procedure performed at home earlier in the morning since this procedure requires AC electric power. All units checked out and were functioning as intended by manufactures.

Creamer moves their heavy equipment to the second of two work areas at the IA-12 site

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known as Excavation Area – North. Approximately 75 cubic yards of contaminated soil is to be removed from this location. This location is at the old main entrance to the Hoffmann La Roche plant on US Route 3 and is a more difficult work area than IA-12 Excavation Area – South due to the location of street light, facility sign; fencing and concrete barriers all of which are in close proximity to the area to be excavated.

Creamer prepared the work area by laying plastic sheeting in the swing path between the site of the intended hole and the location to be used by the dump truck during soil removal and loading.

Creamer removed pre-cut pavement, placed it in the dump truck, and removed it for disposal. Creamer removed contaminated soil to a depth of approx. 9 feet and discovered a large diameter pipe that was not identified or marked during pre-excavation utility identification. All parties on site are consulted; however, the purpose of the pipe and its owner cannot be determined.

Creamer stands down with digging equipment after removal of a little more soil in an attempt to better identify the pipe. No additional digging was performed for the remainder of the day since the pipe cannot be identified. The remainder of the day is used by various entities to attempt to identify the pipe, but all efforts are in vain. Creamer lines the hole with plastic sheeting and backfills the hole with QP. No additional digging was performed, since if the pipe was active it would have to be protected and Creamer's current plan contained no provisions for this kind of event. The project design would have to change to accommodate the new conditions which would require Creamer personnel to enter the hole to perform hand digging around the

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pipe. This would require a type of shoring not anticipated in the original project design.

All real time instrument readings observed during digging up to and including the depth at which the unknown pipe was found were well below HASP Action levels of 5 mg/m³ for airborne particulate; 5 ppm for total volatile organic compounds; 0.1 mg/m³ for mercury vapor; 25 ppm for carbon monoxide; and 10 ppm for hydrogen sulfide. In addition, no detectable concentration of combustible gas was observed and oxygen levels remained at 20.9% throughout the excavation. (See Appendix A – Real Time Instrument Monitoring Results).

June 10, 2014

No progress was made between June 6, 2014 and June 10, 2014 in determining the identity of the pipe discovered in the IA-12 Excavation Area – North hole. As a result, Creamer attempted to obtain more information about the unknown pipe in the IA-12 Excavation Area – North pit by entering an adjacent manhole associated with the Clifton, NJ sewer system. The objective of this manhole entry and inspection was to determine if the unknown pipe was connected to the Clifton City sewer system.

EHI performed confined space entry air testing using a VOC monitor and a four gas meter to provide combustible gas; carbon monoxide; hydrogen sulfide and oxygen readings prior to entry into the manhole by Creamer personnel. EHI arrived at the manhole and performed zeroing and calibration procedures on the VOC monitor (photoionization detector) and 4 gas meter prior to performing manhole atmosphere testing. In addition, Hoffmann La Roche safety personnel also performed confined space air monitoring prior to their issuing a confined space entry permit.

Creamer used a gasoline powered air pump to blow ambient air into the manhole using a

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flexible hose designed for this purpose. However, carbon monoxide generated by the gasoline powered air pump was entrained into the air blown into the manhole resulting in elevated carbon monoxide levels in the manhole as high as 37 ppm. Adjustments were made to the air pump that prevented the carbon monoxide exhaust gases from being entrained in the supply air where upon the carbon monoxide levels dropped to non-detected levels. Hoffmann La Roche Safety then performed their testing and issued the confined space permit needed to enter the manhole.

Creamer foreman Paulo Rodriguez entered the manhole using full retrieval protection including full body harness, retrieval rope, and tripod.

No connection between the Clifton City sewer line and the unknown pipe found in the bottom of the excavation hole could be verified. As a result, Creamer was obliged to change their project design in such a way as to be able to deal with a worst case scenario. This required extensive shoring using interlocking steel panels and the need for Creamer personnel to enter the hole to dig around the pipe by hand to remove the contaminated soil under pipe. In addition extra precautions would be required to protect the pipe from damage from the heavy digging equipment.

June 30, 2014

EHI's Howard Leemann, CIH arrived on site and prepared air monitoring equipment for sampling. The VOC monitor was zeroed and calibrated with 100 ppm Isobutene. However, this instrument was observed to be experiencing a drift problem even though the self-test, zeroing, and calibrations conducted indicate the instrument is functioning properly. The other three instruments are all ready for use. The aerosol monitor was zeroed using manufacturer supplied

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plastic bag and zero air filtration hand pump; 4 Gas Meter bump tested with calibration gas mixture provided by the manufacturer; mercury monitor zeroed in the field, recommended regeneration procedure performed at home earlier this morning since this procedure requires AC electric power.

Creamer has amended their work plan to address the unknown pipe present in the IA-12 Excavation Area – North. The pipe remained unknown since no entity was able to claim it as part of their system. All parties except for the dump truck are on site. However, EHI continued to have an issue with the PID used to monitor volatile organic compounds. A second PID is obtained from the EHI office to be used to corroborate readings obtained from the original instrument.

Digging did not begin until after coffee break due to the absence of the dump truck needed to haul contaminated soil from the excavation site to the soil storage yard. Creamer began by removing the quarry process from the hole. The edges of the hole were then shaved to accommodate the heavy steel shoring panels needed to secure the sides of the excavation pit. There was a monitoring well present in the southeast corner of the excavation area which increased the difficulty factor in installing shoring and removing soil and residual QP.

Creamer completed installation of the steel trench box prior to resumption of soil removal. The pipe was not uncovered by the end of the day, and Creamer opted to stop digging at approx. 1415 hours, since Creamer personnel would have to enter the hole to guide any additional machine digging to uncover the unknown pipe.

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All real time instrument readings observed during shoring installation and related digging were well below HASP action levels of 5 mg/m³ for airborne particulate; 5 ppm for total volatile organic compounds; 0.1 mg/m³ for mercury vapor 25 ppm for carbon monoxide; and 10 ppm for hydrogen sulfide. In addition, no detectable concentration of combustible gas was observed and oxygen levels remained at 20.9% throughout the excavation. (See Appendix A – Real Time Instrument Monitoring Results).

July 1, 2014

EHI's H. Leemann, CIH arrives on site and prepares air monitoring equipment for sampling. The VOC monitor was zeroed and calibrated without problems observed on June 30, 2014; the aerosol monitor was zeroed using manufacturer supplied plastic bag and zero air filtration hand pump; the 4 Gas Meter was bump tested with calibration gas mixture provided by the manufacturer; the mercury monitor was zeroed in the field, with recommended regeneration procedure performed at home earlier in the morning, as this procedure requires AC electric power. All units checked out and were functioning as intended by manufactures.

Creamer began to remove soil from excavation pit when dump truck arrived and after backhoe bucket swing area had been protected with plastic sheeting. Creamer removed approx. two more feet of contaminated soil present above unknown pipe before pipe is exposed. Careful digging with the backhoe seemed to reveal that the unknown pipe is open on the east end. This means the pipe is not active and is not a water supply, waste line, or gas line. All real time air monitoring readings for VOCs; combustible gas; hydrogen sulfide; carbon monoxide and mercury are at or below detection limits. Oxygen levels remained at 20.9%. The airborne

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particulate concentration remained at less than 1 mg/m^3 except for several momentary concentrations caused by the backhoe impacting the steel shoring panels or the sweeping of loose stone powder present around pit. Hoffmann La Roche Safety personnel provided a confined space permit after testing the pit and finding no issues.

Creamer personnel suited up with personal protective equipment including fall protection harness; Tyvek suits; rubber boots; and impermeable gloves and entered the excavation pit and confirmed that the pipe is open on the east end and that it is empty. However, the ultimate function of this pipe could not be confirmed. The pipe was then broken up and removed from the hole as contaminated waste. Creamer personnel then exited the pit and decontaminated their boots and discarded their remaining PPE. Creamer continued to remove contaminated soil to a depth of approx. 14 feet as confirmed by the survey team. Creamer then began to backfill pit with quarry process after decontaminating the backhoe bucket and loading this waste soil and associated plastic sheeting into the last dump truck. The day ended with the pit backfilled approx. half way. Creamer protected the pit via erection of a plastic snow fence around the trench box which still protruded from the ground approx. two and half feet. This ended EHI's participation in the project and no air monitoring was deemed necessary for the remaining backfilling and trench box removal to be conducted at a later time.

All real time instrument readings observed during digging and backfilling were well below HASP action levels of 5 mg/m^3 for airborne particulate; 5 ppm for total volatile organic compounds; 0.1 mg/m^3 for mercury vapor; 25 ppm for carbon monoxide; and 10 ppm for hydrogen sulfide. In addition, no detectable concentration of combustible gas was observed and

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oxygen levels remained at 20.9% throughout the excavation. (See Appendix A – Real Time Instrument Monitoring Results).

5.0 Real Time Monitoring Results

Total airborne particulate concentrations observed throughout this project remained at least an order of magnitude below the project HASP required action level of 5 mg/m³ with a few exceptions (see Appendix A – Real Time Monitoring Results). Total airborne particulate was used as a surrogate for the contaminants including PAHs and heavy metals (arsenic) listed as being present in the work areas at IA-12 South and North.

In addition, measured concentrations of VOCs, hydrogen sulfide, and carbon monoxide were all either un-detected or were well below the respective action levels provided in the project Health & Safety Plan (HASP). Again there were exceptions described in the daily observations and on the field sheets used to record this information (see Appendix A – Real Time Monitoring Results)

Furthermore, percent lower explosive limit readings and mercury vapor concentrations were undetected throughout all phases of the project. Also as expected oxygen levels remained at normal background levels throughout the project. All real time air monitoring results are provided in Appendix A of this report.

6.0 Industrial Hygiene Sampling Results

Laboratory results for area and personal industrial hygiene samples collected during excavation of soil at IA-12 – South were reported to be less the respective lower detection limit for the sampling and analytical procedures employed. This includes personal samples collected

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for total volatile organics and airborne mercury vapor collected via badge technique and area samples for poly aromatic hydrocarbons and arsenic collected via standard industrial hygiene techniques using portable air sampling pumps. All laboratory results for industrial hygiene samples are provided in Appendix B – Laboratory Results for Industrial Hygiene Samples.

7.0 Conclusions and Recommendations

Real time monitoring data collected during this investigation indicate that total airborne particulate concentrations were all less than one milligrams per cubic meter (1.0 mg/m^3) throughout the project, except with noted momentary exceptions (see field data sheets & daily observations for details). As a result, the total airborne particulate concentrations throughout the project were well below the airborne particulate action level of 5 mg/m^3 established in the project HASP.

In addition, total volatile organic compound concentrations, hydrogen sulfide concentrations, and carbon monoxide concentrations were also either undetected or well below the respective action levels established in the project HASP (see June 10, 2014 observations regarding carbon monoxide during manhole inspection for exception). Furthermore, percent lower explosive limit readings and mercury vapor concentrations remained undetected throughout the project.

As a result of these findings, there was no need to increase the level of personal protection, at any time, above Level D Protection that was originally established for this project in the Health & Safety Plan (HASP). However, personnel who entered the excavation pits during the project wore disposable Tyvek suits, rubber boots and impermeable gloves as an added

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precaution while working in the hole.

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Survey & Report by: Howard Leemann, CIH

Reviewed By: 

William S. Kerbel, CIH
President

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A P P E N D I X

A

Real Time Instrument Monitoring Results

1 OF 2

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

Soil Excavation Monitoring Data Sheet

Weather: Clear
Temperature: 70°F
Humidity:
Wind Direction: Light & Variable

Client: HLR/SORDON
Location: IA-12 EXCAVATION AREA 50074
Date: 6/3/14
Project #: 0755-5066A

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H ₂ S ppm	CO ppm	Oxygen %	Mercury mg/m ³	T. PHE mk/m ³
0722	BACKGROUND	N/A	<0.1	<1	<1	<1	20.9	<0.001	0.015
0754	PAVEMENT REMOVAL	±1'	<0.1	<1	<1	<1	20.9	<0.001	0.19C
0815	DIGGING - C TAGE	±2'	<0.1	<1	<1	<1	20.9	<0.001	0.353
0832	MOVING SOIL IN HOLE	±4'	<0.1	<1	<1	<1	20.9	<0.001	1.053
0840	HANDLING FOR ELECTRIC	±1'	<0.1	<1	<1	<1	20.9	<0.001	0.023
0858	DIGGING	±4'	<0.1	<1	<1	<1	20.9	<0.001	0.062
0928	HAND DIGGING	±1.5'	<0.1	<1	<1	<1	20.9	<0.001	0.08'
0933	NO ACTIVITY BACKHOLE STARTS	N/A	*11.4	<1	<1	<1	20.9	<0.001	0.02'
0940	DIGGING	±4.5'	<0.1	<1	<1	<1	20.9	<0.001	0.07'
0953	DIGGING	±5'	0.3	<1	<1	<1	20.9	<0.001	0.13C
1014	DIGGING	±5'	**1.4	<1	<1	<1	20.9	<0.001	0.06
1030	HAND DIGGING	±3'	0.3	<1	<1	<1	20.9	<0.001	0.041

Observations
 Time/Activity * A BREF READING OF 11.4 PPM WAS OBSERVED AS BACK HOLE STARTED AFTER REFUELING
 Time/Activity ** A BREF READING OBSERVED NEAR BROKE STORM SEWER PIPE
 Time/Activity

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

2 OF 2

Soil Excavation Monitoring Data Sheet

Weather: Clear
Temperature: 70°F - 80°F
Humidity: _____

Client: HLR / Sorboni
Location: IA-2 EXCAVATION AREA SOUTH
Date: 6/3/14
Project #: 0255-5066A

Wind Direction: Light Variables

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H ₂ S ppm	CO ppm	Oxygen %	Mercury mg/m ³	T, PAR <u>uv/m³</u>
1050	HAND DIGGING	4.5'	0.3	<1	<1	<1	20.9	<0.001	0.178
1111	HAND DIGGING	4.5'	0.1	<1	<1	<1	20.9	<0.001	0.045
1125	MACHINE DIGGING	4.5'	<0.1	<1	<1	<1	20.9	<0.001	0.085
1135	DECON BUCKET	N/A	<0.1	<1	<1	<1	20.9	<0.001	0.04
1145	WORK COMPLETE	N/A	<0.1	<1	<1	<1	20.9	<0.001	0.075
1249	BACKFILLING	24'	0.1	<1	<1	<1	20.9	<0.001	0.135
1304	BACKFILLING	24'	0.1	<1	<1	<1	20.9	<0.001	0.091
1321	LAYING PIPE	24'	<0.1	<1	<1	<1	20.9	<0.001	0.056
1348	BUILDING BASIN	24'	<0.1	<1	<1	<1	20.9	<0.001	0.068
1410	BUILDING BASIN	24'	0.1	<1	<1	<1	20.9	<0.001	0.06
1430	BUILDING BASIN	24'	<0.1	<1	<1	<1	20.9	<0.001	0.06
1505	BACKFILLING	N/A	<0.1	<1	<1	<1	20.9	<0.001	0.472

Observations
Time/Activity
Time/Activity
Time/Activity

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

Soil Excavation Monitoring Data Sheet

1 of 2

Client: HLF/SORDANI

Location: EA-12 EXCAVATION AREA-NORTH

Date: 6/6/14

Project #: 0755-5066A

Weather: CLEAR
Temperature: 60°F
Humidity:
Wind Direction: NORTH WEST

T. Pave
mg/m³
0.060
0.412
0.030
1.08"
0.29
0.030
0.32

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H ₂ S ppm	CO ppm	Oxygen %	Mercury mg/m ³
0805	PAVEMENT REMOVAL	<1'	0.1	<1	<1	<1	20.9	<0.001
0825	PAVEMENT REMOVAL	<1'	0.1	<1	<1	<1	20.9	<0.001
0845	DIGGING	~6'	0.1	<1	<1	<1	20.9	<0.001
0942	DIGGING	~9'	0.1	<1	<1	<1	20.9	<0.001
1000	DIGGING	~10'	0.1	<1	<1	<1	20.9	<0.001
1040	DIGGING CLEARING	~10'	0.4	<1	<1	<1	20.9	<0.001
1330	BACKFILLING	N/A	<0.1	<1	<1	<1	20.9	<0.001

Observations
 Time/Activity * DIGGING STOPS WHEN A PIPE IS OBSERVED IN THE BOTTOM OF THE HOLE
 Time/Activity IT IS UNEXPECTED AND CAN NOT BE IDENTIFIED BY ON SITE PERSONNEL AND AS
 Time/Activity CONTRACTORS - IT IS LATER DETERMINED TO BE A 20" DIA ACTIVE WATER MAIN THAT
 MUST REMAIN IN PLACE & BE PROTECTED - CREWMEN WILL ADJUST ITS WORK PLAN BUT IT
 WILL TAKE A DAY OR TWO TO BE COMPLETED

EA NORTH

*

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

Soil Excavation Monitoring Data Sheet

1 OF 1

Weather: Overcast
Temperature: 70°F
Humidity: _____
Wind Direction: Light & Variable

Client: HLE / SORDEN!
Location: IA-12 EXCAVATION AREA - NORTH MAN HOLE
Date: 6/10/14
Project #: 0755-5066A

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H2S ppm	CO ppm	Oxygen %	Mercury mg/m3
0945	MH BEFORE FLUSHING	MAN HOLE	<1	<1	<1	<1	20.9	
1003	DURING FLUSHING	"	<1	<1	<1	43*	20.9	
1007	DURING FLUSHING	"	<1	<1	<1	<1	20.9	
1015	DURING FLUSHING	"	<1	<1	<1	37**	20.9	
1030	DURING FLUSHING	"	<1	<1	<1	<1	20.9	
1040	DURING FLUSHING	"	<1	<1	<1	<1	20.9	
1045	DURING FLUSHING	"	<1	<1	<1	<1	20.9	
1055	AIR PUMP OFF	"	<1	<1	<1	<1	20.9	

Observations
 Time/Activity * CO FROM GAS BLEW POWERED AIR BLOWER BLOWN INTO MH, CREMER EXHAUST RE-POSITIONS BLOWER SO BLOWER EXHAUST IS NOT PULLED INTO AIR BLOWER
 Time/Activity ** CO LEVEL - CO LEVEL DROPS BACK TO <1
 ** CO LEVEL IS 39 PPM SETTING OFF 4 GAS METER ALARM FOR CO, THIS IS AGAIN CAUSED BY EXHAUST FROM BLOWER MOTOR - CREMER BLOCKS EXHAUST FROM HOOD WITH A PIECE OF PLYWOOD

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

Soil Excavation Monitoring Data Sheet

1 OF 2

Weather: CLEAR
 Temperature: 70°F
 Humidity: MODERATE

Client: HLR / SOLEDON
 Location: FA-12 NORTH
 Date: 6/30/14
 Project #: 0755-5066A

Wind Direction:

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H ₂ S ppm	CO ppm	Oxygen %	Mercury mg/m ³	T.Pac mg/m ³
0740	BACKGROUND	N/A	<1	<1	<1	<1	20.9	<0.001	0.001
0922	DIGGING - RP	<1'	<1	<1	<1	<1	20.9	<0.001	0.03
0940	DIGGING - RP	≈ 3'	<1	<1	<1	<1	20.9	<0.001	0.962
0955	DIGGING - RP	≈ 4'	0.1	<1	<1	<1	20.9	<0.001	0.058
1010	DIGGING SOIL	≈ 5'	0.4	<1	<1	<1	20.9	<0.001	0.857
1030	SHRINK INSTALLATION	≈ 6'	<0.1	<1	<1	<1	20.9	<0.001	0.21
1050	SHRINK INSTALLATION	≈ 6'	0.2	<1	<1	<1	20.9	<0.001	0.75
1125	DIGGING	≈ 6.5'	<0.1	<1	<1	<1	20.9	<0.001	0.798
1245	DIGGING	≈ 7'	<0.1	<1	<1	<1	20.9	<0.001	0.609
1310	DIGGING	≈ 7'	<0.1	<1	<1	<1	20.9	<0.001	0.129
1320	SHRINK INSTALLATION	≈ 7'	<0.1	<1	<1	<1	20.9	<0.001	0.08
1340	DIGGING	≈ 7'	0.1	<1	<1	<1	20.9	<0.001	0.041

Observations
 Time/Activity 9:40 Shrink sweeps & P dust from pavement at edge of hole
 Time/Activity _____
 Time/Activity _____

v
s

*

Soil Excavation Monitoring Data Sheet

Client: HLR/SORDANI
 Location: LA-12-NORTH
 Date: 6/30/14
 Project #: 0755-5066A

Weather: Cloud
 Temperature: 80°F
 Humidity: High
 Wind Direction: West & Variable

T. Part
 mg/m³
 0.168
 0.108

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	HPS ppm	CO ppm	Oxygen %	Mercury mg/m ³
1400	DIGGING	27.5'	<0.1	<1	<1	<1	20.9	<0.001
1415	DIGGING	27.5'	<0.1	<1	<1	<1	20.9	<0.001

Observations
 Time/Activity
 Time/Activity
 Time/Activity

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

1 OF 2

Soil Excavation Monitoring Data Sheet

Client: HLK/SORDEN I

Location: TA-12

Date: 7/11/14

Project #: 0755-5066A

Weather: PARTLY CLOUDY
 Temperature: ~80°F
 Humidity: HIGH

Wind Direction: LIGHT VARIABLE

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H ₂ S ppm	CO ppm	Oxygen %	Mercury mg/m ³	T.P.M. ^{per year}
0715	BACKGROUND	N/A	<0.1	<1	<1	<1	20.9	<0.001	0.023
0732	MENDING SOIL IN HOLE	~7.5'	<0.1	<1	<1	<1	20.9	<0.001	0.273
0750	DIGGING	~9'	0.1	<1	<1	<1	20.9	<0.001	0.144
0807	DIGGING	~10'	0.1	<1	<1	<1	20.9	<0.001	0.803
0822	DIGGING	~11'	<0.1	<1	<1	<1	20.9	<0.001	0.228
0845	WAITING	~12'	<0.1	<1	<1	<1	20.9	<0.001	1.170
0859	HARD DIGGING	~12'	<0.1	<1	<1	<1	20.9	<0.001	0.170
0935	WAITING	~12'	<0.1	<1	<1	<1	20.9	<0.001	0.22
1000	BREAKING PIPES	~12'	<0.1	<1	<1	<1	20.9	<0.001	0.26
1023	DIGGING	~13'	0.1	<1	<1	<1	20.9	<0.001	0.541
1045	DIGGING	~13'	<0.1	<1	<1	<1	20.9	<0.001	0.835
1105	DIGGING	~13.5'	<0.1	<1	<1	<1	20.9	<0.001	0.944

Observations
 Time/Activity: * THIS CONCENTRATION THE RESULT OF SWEEPING PERFORMED BY LABORS AND ONLY LATEST
 Time/Activity: LESS THAN 30 SECONDS
 Time/Activity:

ENVIRONMENTAL HEALTH INVESTIGATIONS, INC.

2 OF 2

Soil Excavation Monitoring Data Sheet

Weather: PARTLY CLOUDY
 Temperature: 80°S F
 Humidity: High
 Wind Direction: VARIABLE ~ S MPH

Client: HAR/SARBONI
 Location: IA-12
 Date: 8/11/14
 Project #: 0755-5066A

T.PART
 mg/m³
 0.306
 0.144
 0.046
 0.464
 0.087

Time	Activity	Soil Depth / ft	VOCs ppm	LEL %	H ₂ S ppm	CO ppm	Oxygen %	Mercury mg/m ³
1125	DIGGING	~13.5'	<0.1	<1	<1	<1	20.9	<0.001
1150	DIGGING	~14'	<0.1	<1	<1	<1	20.9	<0.001
1235	DIGGING	~14'	<0.1	<1	<1	<1	20.9	<0.001
1250	DIGGING	~14'	<0.1	<1	<1	<1	20.9	<0.001
1312	DECON OF BENEKE 7	N/A	<0.1	<1	<1	<1	20.9	<0.001

Observations
 Time/Activity
 Time/Activity
 Time/Activity

**Sordoni @ Hoffmann-La Roche, Inc.
Investigative Area 12 (1A-12)
Nutley, NJ**

**Soil Excavation Monitoring
June 3 - July 1, 2014
EHI Project #: 0755-5066A**

A P P E N D I X

B

Laboratory Results For Industrial Hygiene Samples



Mr. William Kerbel
Environmental Health Investigations
655 West Shore Trail
Sparta, NJ 07871

June 05, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 14900

Login# L320182

Dear Mr. Kerbel:

Enclosed are the analytical results for the samples received by our laboratory on June 04, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Amanda Frateschi at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

A handwritten signature in black ink that reads "Mary G. Unangst". The signature is written in a cursive style with a large, looped "M" and "U".

Mary G. Unangst
Laboratory Director

Enclosure(s)



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : Environmental Health Investigations
Site : Hoffmann La Roche
Project No. : 0755-5066A
Date Sampled : 03-JUN-14
Date Received : 04-JUN-14
Date Analyzed : 04-JUN-14
Report ID : 835114

Account No.: 14900
Login No. : L320182

Arsenic

Table with 5 columns: Sample ID, Lab ID, Air Vol (liter), Total (ug), Conc (mg/m3). Row 1: HLR-IA12-060314-1M, L320182-2, 770, <0.30, <0.00039

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.30 ug Submitted by: KML
Analytical Method : mod. NIOSH 7300/mod. OSHA ID-125G; ICP Approved by : keg
OSHA PEL : 0.01 mg/m3 (TWA) Date : 05-JUN-14 NYS DOH # : 11626
Collection Media : Filter QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY ANALYSIS REPORT

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Client : Environmental Health Investigations
Site : Hoffmann La Roche
Project No. : 0755-5066A
Date Sampled : 03-JUN-14
Date Received : 04-JUN-14
Date Analyzed : 04-JUN-14
Report ID : 835154

Account No.: 14900
Login No. : L320182

Mercury

Table with 5 columns: Sample ID, Lab ID, Time minutes, Total ug, Conc mg/m3. Row 1: HLR-IA12-060314-1HG, L320182-3, 442, <0.10, <0.011

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.10 ug
Analytical Method : mod. OSHA ID-140; CVAA BADGE
OSHA PEL : 0.1 mg/m3
Collection Media : 520-02A
Submitted by: PWL
Approved by : keg
Date : 05-JUN-14 NYS DOH # : 11626
QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY ANALYSIS REPORT

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Client : Environmental Health Investigations
 Site : Hoffmann La Roche
 Project No. : 0755-5066A
 Date Sampled : 03-JUN-14
 Date Received : 04-JUN-14
 Date Analyzed : 04-JUN-14
 Report ID : 834934
 Account No.: 14900
 Login No. : L320182

Client ID : HLR-IA12-060314-1 Lab ID : L320182-1 Air Volume : 758 Liter
 Date Sampled : 06/03/14 Date Analyzed : 06/04/14

Parameter	LOQ ug	Filter ug	Front ug	Back ug	Total ug	Conc mg/m3	ppm
1-Nitropyrene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00005
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.0004	<0.00007
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.0004	<0.00007
Anthracene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00006
Benzo(a)anthracene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00005
Benzo(a)pyrene	0.3	<0.3	<0.3	<0.3	<0.5	<0.0006	<0.00006
Benzo(b)fluoranthene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00005
Benzo(e)pyrene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0006	<0.00006
Benzo(g,h,i)perylene	0.3	<0.3	<0.3	<0.3	<0.5	<0.0007	<0.00006
Benzo(k)fluoranthene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00005
Chrysene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00006
Dibenzo(a,h)anthracene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00005
Fluoranthene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00006
Fluorene	0.3	<0.3	<0.3	<0.3	<0.3	<0.0004	<0.00006
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3	<0.5	<0.0006	<0.00005
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	<0.0004	<0.00008
Phenanthrene	0.3	<0.3	<0.3	<0.3	<0.3	<0.0005	<0.00006
Pyrene	0.3	<0.3	<0.3	<0.3	<0.4	<0.0005	<0.00006

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : FilterTube

Submitted by: crd/bcf
 Approved by : nkp
 Date : 05-JUN-14 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

6601 Kirkville Road East Syracuse, NY 13057 (315) 432-5227 FAX: (315) 437-0571 www.galsonlabs.com	Client : Environmental Health Investigations Site : Hoffmann La Roche Project No. : 0755-5066A Date Sampled : 03-JUN-14 Date Received : 04-JUN-14 Date Analyzed : 04-JUN-14 Report ID : 834949	Account No.: 14900 Login No. : L320182
---	--	---

Client ID : HLR-IA12-060314-1VOC Lab ID : L320182-4 Time : 443 Minutes
Date Sampled : 06/03/14 Date Analyzed : 06/04/14

Parameter	LOQ ug	Raw ug	Total ug	Conc mg/m3	ppm
Methyl Chloroform	5	<5	<5	<0.4	<0.07
1,1,2-Trichloroethane	5	<5	<5	<0.4	<0.07
1,1-Dichloroethane	5	<5	<5	<0.3	<0.08
1,2-Dichloroethane	5	<5	<5	<0.3	<0.08
Acetone	10.	<10	<10	<0.57	<0.24
Benzene	2	<2	<2	<0.1	<0.04
Chlorobenzene	5	<5	<5	<0.4	<0.08
Chloroform	5	<5	<5	<0.3	<0.07
Cumene	5	<5	<5	<0.5	<0.09
Cyclohexane	5	<5	<5	<0.3	<0.1
Cyclohexanone	5	<5	<5	<0.4	<0.1
Cyclohexene	5	<5	<5	<0.4	<0.1
Ethyl Alcohol	5	<5	<6	<0.3	<0.2
Ethylbenzene	5	<5	<5	<0.4	<0.09
Isopropyl Alcohol	5	<5	<5	<0.3	<0.1
m-Dichlorobenzene	5	<5	<5	<0.4	<0.07
Methyl Ethyl Ketone	5	<5	<5	<0.3	<0.1
Methyl Isobutyl Ketone	5	<5	<5	<0.4	<0.09
Methyl n-Propyl Ketone	5	<5	<5	<0.3	<0.1
Methylene Chloride	5	<5	<5	<0.3	<0.09
n-Butyl Acetate	5	<5	<5	<0.3	<0.07
n-Hexane	5	<5	<5	<0.3	<0.1

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : M3M-3500	Submitted by: BDK
	Approved by : dnf
	Date : 05-JUN-14 NYS DOH # : 11626
	QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY ANALYSIS REPORT

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Client : Environmental Health Investigations
 Site : Hoffmann La Roche
 Project No. : 0755-5066A
 Date Sampled : 03-JUN-14
 Date Received : 04-JUN-14
 Date Analyzed : 04-JUN-14
 Report ID : 834949
 Account No. : 14900
 Login No. : L320182

Client ID : HLR-IA12-060314-1VOC Lab ID : L320182-4 Time : 443 Minutes
 Date Sampled : 06/03/14 Date Analyzed : 06/04/14

Parameter	LOQ ug	Raw ug	Total ug	Conc mq/m3	ppm
n-Propyl Acetate	5	<5	<5	<0.4	<0.09
o-Dichlorobenzene	5	<5	<5	<0.4	<0.07
p-Dichlorobenzene	5	<5	<5	<0.4	<0.07
Pentane	5	<5	<5	<0.3	<0.1
Tetrachloroethylene	5	<5	<5	<0.4	<0.06
Tetrahydrofuran	5	<5	<5	<0.3	<0.1
Toluene	5	<5	<5	<0.4	<0.09
Trichloroethylene	5	<5	<5	<0.4	<0.07
Xylene	15	<15	<15	<1.3	<0.29

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Collection Media : M3M-3500

Submitted by: BDK
 Approved by : dnf
 Date : 05-JUN-14 NYS DOH # : 11626
 QC by: Tom Burgess

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
 > -Greater Than ug -Micrograms l -Liters NS -Not Specified
 NA -Not Applicable ND -Not Detected ppm -Parts per Million LOQ-Limit of Quantitation

Field sampling was not performed by Galson. Galson presents results based on sampling data provided by clients.



LABORATORY FOOTNOTE REPORT

Client Name : Environmental Health Investigations
Site : Hoffmann La Roche
Project No. : 0755-5066A
6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com
Date Sampled : 03-JUN-14
Date Received: 04-JUN-14
Date Analyzed: 04-JUN-14
Account No.: 14900
Login No. : L320182

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L320182 (Report ID: 835114):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(25), im-filter(19)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Table with 3 columns: Parameter, Accuracy, Mean Recovery. Row: Arsenic, +/-8.6%, 105%

L320182 (Report ID: 835154):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: im-hg(24), im-hgair(15)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Table with 3 columns: Parameter, Accuracy, Mean Recovery. Row: Mercury, +/-13.3%, 100%

L320182 (Report ID: 834934):
SOPs: il-n5506(11)
Results corrected for matrix and compound specific desorption efficiencies.

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Table with 3 columns: Parameter, Accuracy, Mean Recovery. Rows: 1-Nitropyrene (+/-15.8%, 107%), Acenaphthene (+/-10.4%, 101%), Acenaphthylene (+/-10.7%, 101%)

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million



LABORATORY FOOTNOTE REPORT

6601 Kirkville Road
 East Syracuse, NY 13057
 (315) 432-5227
 FAX: (315) 437-0571
 www.galsonlabs.com

Client Name : Environmental Health Investigations
 Site : Hoffmann La Roche
 Project No. : 0755-5066A

Date Sampled : 03-JUN-14
 Date Received: 04-JUN-14
 Date Analyzed: 04-JUN-14

Account No.: 14900
 Login No. : L320182

Anthracene	+/-20.4%	104%
Benzo(a)anthracene	+/-11.9%	105%
Benzo(a)pyrene	+/-20.2%	112%
Benzo(b)fluoranthene	+/-12.8%	108%
Benzo(e)pyrene	+/-16.9%	107%
Benzo(g,h,i)perylene	+/-16.3%	107%
Benzo(k)fluoranthene	+/-12.3%	107%
Chrysene	+/-14.2%	105%
Dibenzo(a,h)anthracene	+/-12.3%	101%
Fluoranthene	+/-12.4%	106%
Fluorene	+/-9.6%	104%
Indeno(1,2,3-cd)pyrene	+/-13.8%	107%
Naphthalene	+/-16.5%	102%
Phenanthrene	+/-12.2%	106%
Pyrene	+/-12%	106%

Parameter	Method	PEL
1-Nitropyrene	mod. NIOSH 5506; HPLC/UV	NA
Acenaphthene	mod. NIOSH 5506; HPLC/UV	NA
Acenaphthylene	mod. NIOSH 5506; HPLC/UV	NA
Anthracene	mod. NIOSH 5506; HPLC/UV	NA
Benzo(a)anthracene	mod. NIOSH 5506; HPLC/UV	NA
Benzo(a)pyrene	mod. NIOSH 5506; HPLC/UV	0.2 mg/m3 (TWA)
Benzo(b)fluoranthene	mod. NIOSH 5506; HPLC/UV	NA
Benzo(e)pyrene	mod. NIOSH 5506; HPLC/UV	NA
Benzo(g,h,i)perylene	mod. NIOSH 5506; HPLC/UV	NA
Benzo(k)fluoranthene	mod. NIOSH 5506; HPLC/UV	NA
Chrysene	mod. NIOSH 5506; HPLC/UV	0.2 mg/m3 (TWA)
Dibenzo(a,h)anthracene	mod. NIOSH 5506; HPLC/UV	NA
Fluoranthene	mod. NIOSH 5506; HPLC/UV	NA
Fluorene	mod. NIOSH 5506; HPLC/UV	NA
Indeno(1,2,3-cd)pyrene	mod. NIOSH 5506; HPLC/UV	NA
Naphthalene	mod. NIOSH 5506; HPLC/UV	10 ppm (TWA)
Phenanthrene	mod. NIOSH 5506; HPLC/UV	NA
Pyrene	mod. NIOSH 5506; HPLC/UV	NA

L320182 (Report ID: 834949):

- 1,1,2-Trichloroethane - Total ug corrected for a desorption efficiency of 101%.
- 1,1-Dichloroethane - Total ug corrected for a desorption efficiency of 100%.
- 1,2-Dichloroethane - Total ug corrected for a desorption efficiency of 104%.
- Acetone - Total ug corrected for a desorption efficiency of 99%.
- Benzene - Total ug corrected for a desorption efficiency of 100%.
- Chlorobenzene - Total ug corrected for a desorption efficiency of 99%.
- Chloroform - Total ug corrected for a desorption efficiency of 97%.
- Cumene - Total ug corrected for a desorption efficiency of 101%.
- Cyclohexane - Total ug corrected for a desorption efficiency of 104%.
- Cyclohexanone - Total ug corrected for a desorption efficiency of 99%.
- Cyclohexene - Total ug corrected for a desorption efficiency of 96%.
- Ethyl Alcohol - Total ug corrected for a desorption efficiency of 84%.
- Ethylbenzene - Total ug corrected for a desorption efficiency of 103%.
- Isopropyl Alcohol - Total ug corrected for a desorption efficiency of 98%.
- Methyl Chloroform - Total ug corrected for a desorption efficiency of 102%.
- Methyl Ethyl Ketone - Total ug corrected for a desorption efficiency of 100%.
- Methyl Isobutyl Ketone - Total ug corrected for a desorption efficiency of 102%.

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Account No.: 14900
 Login No. : L320182

L320182 (Report ID: 834949):

Methyl n-Propyl Ketone - Total ug corrected for a desorption efficiency of 99%.
 Methylene Chloride - Total ug corrected for a desorption efficiency of 99%.
 Pentane - Total ug corrected for a desorption efficiency of 103%.
 Tetrachloroethylene - Total ug corrected for a desorption efficiency of 99%.
 Tetrahydrofuran - Total ug corrected for a desorption efficiency of 100%.
 Toluene - Total ug corrected for a desorption efficiency of 102%.
 Trichloroethylene - Total ug corrected for a desorption efficiency of 101%.
 Xylene - Total ug corrected for a desorption efficiency of 97%.
 m-Dichlorobenzene - Total ug corrected for a desorption efficiency of 96%.
 n-Butyl Acetate - Total ug corrected for a desorption efficiency of 103%.
 n-Hexane - Total ug corrected for a desorption efficiency of 103%.
 n-Propyl Acetate - Total ug corrected for a desorption efficiency of 101%.
 o-Dichlorobenzene - Total ug corrected for a desorption efficiency of 95%.
 p-Dichlorobenzene - Total ug corrected for a desorption efficiency of 92%.
 SOPs: GC-SOP-12(6), GC-SOP-16(12), GC-SOP-9(9)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2).
 The estimated uncertainty applies to the media, technology, and SOP referenced in this report
 and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
1,1,2-Trichloroethane	+/-7.4%	98.8%
1,1-Dichloroethane	+/-5.9%	97%
1,2-Dichloroethane	+/-6.3%	94.1%
Acetone	+/-9.5%	92.9%
Benzene	+/-6.4%	94.1%
Chlorobenzene	+/-8.4%	96.9%
Chloroform	+/-5.5%	99.6%
Cumene	+/-6.3%	96.3%
Cyclohexane	+/-5.7%	95.5%
Cyclohexanone	+/-6.8%	91.8%
Cyclohexene	+/-6.8%	105%
Ethyl Alcohol	+/-18%	98%
Ethylbenzene	+/-7.8%	94.4%
Isopropyl Alcohol	+/-10.4%	92.2%
Methyl Chloroform	+/-6.5%	95.9%
Methyl Ethyl Ketone	+/-7.9%	94.3%
Methyl Isobutyl Ketone	+/-8%	95.1%
Methyl n-Propyl Ketone	+/-6%	97.5%
Methylene Chloride	+/-9.5%	97%
Pentane	+/-6.4%	96.7%
Tetrachloroethylene	+/-8.2%	97.9%
Tetrahydrofuran	+/-16.7%	100%
Toluene	+/-6.5%	93.4%
Trichloroethylene	+/-6.3%	97.2%
Xylene	+/-7.7%	98.1%
m-Dichlorobenzene	+/-6.5%	95.2%
n-Butyl Acetate	+/-6.4%	94%
n-Hexane	+/-7.9%	94.5%
n-Propyl Acetate	+/-8.5%	97.3%
o-Dichlorobenzene	+/-3.7%	95.7%
p-Dichlorobenzene	+/-8.2%	98.4%

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Account No.: 14900
 Login No. : L320182

L320182 (Report ID: 834949):

Parameter	Method	PEL
1,1,2-Trichloroethane	mod. NIOSH 1003; GC/FID BADGE	10 ppm (TWA)
1,1-Dichloroethane	mod. NIOSH 1003; GC/FID BADGE	100 ppm (TWA)
1,2-Dichloroethane	mod. NIOSH 1003; GC/FID BADGE	50 ppm (TWA)
Acetone	mod. NIOSH 1300; GC/FID BADGE	1000 ppm (TWA)
Benzene	mod. NIOSH 1501; GC/FID BADGE	1 ppm (TWA)
Chlorobenzene	mod. NIOSH 1003; GC/FID BADGE	75 ppm (TWA)
Chloroform	mod. NIOSH 1003; GC/FID BADGE	50 ppm CEIL
Cumene	mod. NIOSH 1501; GC/FID BADGE	50 ppm (TWA)
Cyclohexane	mod. NIOSH 1500; GC/FID BADGE	300 ppm (TWA)
Cyclohexanone	mod. NIOSH 1300; GC/FID BADGE	50 ppm (TWA)
Cyclohexene	mod. NIOSH 1500; GC/FID BADGE	300 ppm (TWA)
Ethyl Alcohol	mod. NIOSH 1400; GC/FID BADGE	1000 ppm (TWA)
Ethylbenzene	mod. NIOSH 1501; GC/FID BADGE	100 ppm (TWA)
Isopropyl Alcohol	mod. NIOSH 1400; GC/FID BADGE	400 ppm (TWA)
Methyl Chloroform	mod. NIOSH 1003; GC/FID BADGE	350 ppm (TWA)
Methyl Ethyl Ketone	mod. NIOSH 1300; GC/FID BADGE	200 ppm (TWA)
Methyl Isobutyl Ketone	mod. NIOSH 1300; GC/FID BADGE	100 ppm (TWA)
Methyl n-Propyl Ketone	mod. NIOSH 1300; GC/FID BADGE	200 ppm (TWA)
Methylene Chloride	mod. NIOSH 1005; GC/FID BADGE	25 ppm (TWA)
Pentane	mod. NIOSH 1500; GC/FID BADGE	1000 ppm (TWA)
Tetrachloroethylene	mod. NIOSH 1003; GC/FID BADGE	100 ppm (TWA)
Tetrahydrofuran	mod. NIOSH 1609; GC/FID BADGE	200 ppm (TWA)
Toluene	mod. NIOSH 1501/OSHA 111; GC/FID BADGE	200 ppm (TWA)
Trichloroethylene	mod. NIOSH 1022; GC/FID BADGE	100 ppm (TWA)
Xylene	mod. NIOSH 1501; GC/FID BADGE	100 ppm (TWA)
m-Dichlorobenzene	mod. NIOSH 1003; GC/FID BADGE	NA
n-Butyl Acetate	mod. NIOSH 1450; GC/FID BADGE	150 ppm (TWA)
n-Hexane	mod. NIOSH 1500; GC/FID BADGE	500 ppm (TWA)
n-Propyl Acetate	mod. NIOSH 1450; GC/FID BADGE	200 ppm (TWA)
o-Dichlorobenzene	mod. NIOSH 1003; GC/FID BADGE	50 ppm CEIL
p-Dichlorobenzene	mod. NIOSH 1003; GC/FID BADGE	75 ppm (TWA)

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New Client? Report To*: BILL KERBEL Invoice To*: TRACY BAVETTA
 Client Account No.*: 305539 Phone No.*: 973 343 3069 Email: HOWARD
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 Email Address: HOWARD Credit Card: Credit Card on File Call for Credit Card Info
 Samples submitted using the FreePumpLoan™ Program.

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 Client Account No.*: TRACY B2 CPTD. NET Phone No.*: 973 729 5649 Email: HOWARD
 Email Results To: HOWARD Purchase Order No.: 973 729 5649
 Email Address: HOWARD Credit Card: Credit Card on File Call for Credit Card Info
 Samples submitted using the FreePumpLoan™ Program.

Need Results By*:	(surcharge)	State samples were collected in (ex. NY):	List description of industry or process/interferences present in sampling area:	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Volume, Sample Time, or Sample Area*	Sample Units: L, ml, min., in ² , cm ² , ft ²	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (ex. welding, plating, painting, etc.)*	
<input type="checkbox"/> Standard	0%	<u>NY</u>	<u>NO BLANKS</u>	<u>01/01/11</u>	<u>2pc UW PVC</u>	<u>960</u>	<u>L</u>	<u>Hexavalent Chromium (Cr6)</u>	<u>mod. OSHA ID-215</u>	<u>Welding</u>	
<input type="checkbox"/> 4 Business Days	35%			<u>6/3/14</u>	<u>37MM PTFE XAD-2</u>	<u>758</u>	<u>L</u>	<u>PAH PROFILES</u>	<u>NIOSH 5506</u>	<u>SOIL EXCAVATION</u>	
<input type="checkbox"/> 5 Business Days	50%			<u>6/3/14</u>	<u>37MM MCE</u>	<u>770</u>	<u>L</u>	<u>METAL PROFILES</u>	<u>NIOSH 7300</u>		
<input type="checkbox"/> 7 Business Days	75%			<u>6/3/14</u>	<u>37MM MCE</u>	<u>442</u>	<u>MIN.</u>	<u>TOTAL MERCURY</u>	<u>OSHA ID-140</u>		
<input checked="" type="checkbox"/> Next Day by 6pm	100%			<u>6/3/14</u>	<u>3M 3500 BADGE</u>	<u>443</u>	<u>MIN</u>	<u>VOLATILE ORGANIC PROFILES</u>			
<input type="checkbox"/> Next Day by Noon	150%										
<input type="checkbox"/> Same Day	200%										
Sample Identification*		Please indicate which OEL this data will be used for:		Chain of Custody		Date/Time		Print Name/Signature		Date/Time	
<input type="checkbox"/> Maximum of 20 characters, ID's longer than 20 characters will be abbreviated.		<input checked="" type="checkbox"/> OSHA PEL <input type="checkbox"/> ACGIH TLV <input type="checkbox"/> Cal OSHA <input type="checkbox"/> MSHA <input type="checkbox"/> Other (specify):		Received by: <u>HOWARD</u>		Received by: <u>HOWARD</u>		Received by: <u>HOWARD</u>		Received by: <u>HOWARD</u>	
Example <u>HER-IA12-060314-1</u>											
<u>HER-IA12-060314-1M</u>											
<u>HER-IA12-060314-1HG</u>											
<u>HER-IA12-060314-1VOC</u>											

^Galson Laboratories will substitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: Use method(s) listed on COC
 For metals analysis: if requesting an analyte with the option of a lower LOQ please indicate if the lower LOQ is required (only available for certain analytes see SAG):
 For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*: