



Environment

Prepared for:  
PPG Industries  
Allison Park, Pennsylvania

Prepared by:  
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Piscataway, New Jersey  
Project No. 60149955.4010A  
March 2011

# Remedial Investigation Work Plan

## Non-Residential Chromate Chemical Production Waste Sites – Site 016 (SRI-PI G000008791) Jersey City, New Jersey

### Final - Tables



## Tables

**Table 1**  
**Property Location Summary**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

<b>Site Number</b>	<b>Site Address (Name)</b>	<b>Block</b>	<b>Lot</b>	<b>Owner</b>
<b>ACO - 016</b>	45 Linden Avenue East	1507	4.L	K.I.D.S. Realty Co., LLC

Notes:

1. In 1990 and on later dates, each ACO site was given a Group Number and often a common Tax Block Number based on their proximity to each other.

Source: Tax Records Search 9/24/2010, District: 0906 Jersey City Data as of 9/24/2010; [http://tax1.co.monmouth.nj.us/cgi-bin/prc6.cgi?menu=index&ms\\_user=glou&passwd=data&district=0801&mode=11](http://tax1.co.monmouth.nj.us/cgi-bin/prc6.cgi?menu=index&ms_user=glou&passwd=data&district=0801&mode=11)

**Table 2a**  
**Soil Sample Summary**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1,5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_C007	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_C009	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C009_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_C011	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C011_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_C013	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C013_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_C015	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C015_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_C017	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C017_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_C019	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_C019_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW01
016_D005	Horizontal / Vertical	New boring to evaluate soil quality north of the Levy Warehouse adjacent to the Claremont Ditch.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D005a	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D005a_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D007	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D008	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D008_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D010	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D010_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--

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Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1,5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_D012	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D012_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D014	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D014_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D016	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D016_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_D018	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_D018_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E005	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E007	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E009	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E009_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW04
016_E011	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E011_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E013	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E013_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E015	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E015_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E017	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E017_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_E019	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_E019_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--

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Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1,5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_F005	Horizontal / Vertical	New boring to evaluate soil quality north of the Levy Warehouse adjacent to the Claremont Ditch.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F005a	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F005a_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F007	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F008	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F008_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F010	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F010_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F012	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F012_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F014	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F014_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_F016	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_F016_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G005	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G007	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G008	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G008_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G009	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G009_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--

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Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1,5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_G010	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G010_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G011	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G011_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G012	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G012_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G013	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G013_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G014	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G014_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G015	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G015_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW02
016_G016	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G016_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_G017	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_G017_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H005	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H007	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H008	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H008_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H009	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H009_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--

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Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1,5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_H010	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H010_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H011	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H011_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW03
016_H012	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H012_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H013	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H013_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H014	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H014_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H015	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H015_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_H016	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_H016_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I005	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I006	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I006_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW05
016_I006a	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I006a_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I009	Horizontal / Vertical	New boring to evaluate fill east of the Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I009_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I011	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I011_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--



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**Remedial Investigation Work Plan - Site 016**

Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1,5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_I012	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building in the general vicinity of post-excavation boring PE11-001.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I012_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I013	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I013_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I014	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I014_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_I015	Horizontal / Vertical	New boring to evaluate fill beneath Levy Warehouse building.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_I015_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_J005	Horizontal / Vertical	New boring to evaluate soil quality north of the Levy Warehouse adjacent to the Claremont Ditch.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_J005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_J014	Horizontal / Vertical	New boring to evaluate soil quality east of the Levy Warehouse, south of the previously excavated loading dock areas.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_J014_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_K007	Horizontal / Vertical	New boring to evaluate soil quality east of the Levy Warehouse.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_K007_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW06
016_K009	Horizontal / Vertical	New boring to evaluate soil quality east of the Levy Warehouse.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_K009_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_K013	Horizontal / Vertical	New boring to evaluate soil quality east of the Levy Warehouse, southeast of the previously excavated loading dock areas.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_K013_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW08

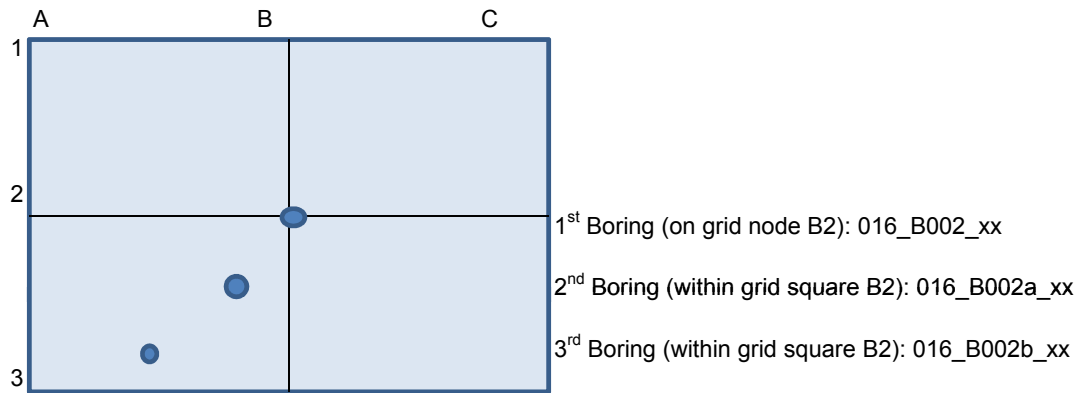
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**Soil Sample Summary**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

Boring No.	Delineation Type	Basis for delineation	Visual Classification		Analytical Sample			Monitoring Well
			Geologic Logging	Estimate Boring Depth	Sample Note <sup>1, 5</sup>	Sample Name <sup>6</sup>	Analysis Required <sup>2,3,4</sup>	Corresponding Permanent Monitoring Well ID
016_L005	Horizontal / Vertical	New boring to evaluate soil quality north of the Levy Warehouse adjacent to the Claremont Ditch.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_L005_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	--
016_L010	Horizontal / Vertical	New boring to evaluate soil in the eastern portion of the site.	Continuous geologic logging from ground surface to total depth.	24 ft bgs	See Sample Definitions.	016_L010_xx	Cr+6, Eh, pH, TAL Metals - Cr, Sb, Ni, Ti, V	016_MW07

**Notes:**

- <sup>1</sup> All soil samples will be collected from a discrete 6-inch sample interval selected from within each 2- or 4-foot core, as applicable. Soil sample collection depth intervals, as defined by the Sample Definitions below and Section 4.3.2 of the RIWP, may vary based on field conditions.
- <sup>2</sup> Hexavalent chromium ("Cr<sup>+6</sup>") sample analysis will include pH and Eh (oxidation-reduction potential) for both soil and groundwater. Refer to the most recent Field Sampling Plan-Quality Assurance Project Plan ("FSP-QAPP") for further details.
- <sup>3</sup> Cr<sup>+6</sup> analysis failing matrix spike/matrix spike duplicate ("MS/MSD") quality control criteria will require hexavalent chromium reanalysis, including Sulfide, Total Organic Carbon ("TOC"), pH, Eh, and Ferrous Iron. Chemical Oxygen Demand ("COD") and Biochemical Oxygen Demand ("BOD") may be necessary and will be decided on a case-by-case basis. Refer to the most recent FSP-QAPP for further details.
- <sup>4</sup> Target Analyte List ("TAL") Metals analysis will be conducted for Chromate Chemical Production Waste ("CCPW")-related metals: chromium ("Cr"), nickel ("Ni"), antimony ("Sb"), thallium ("Tl"), and vanadium ("V").
- <sup>5</sup> Soil samples will be collected for visual classification continuously down to native material and every 4 feet thereafter. Analytical samples will be collected from 6-inch discrete intervals in accordance with Section 4.3.2 of the RIWP and Sample Definitions of this table. At a minimum, 1 analytical sample will be collected for every 4-foot depth interval.
- <sup>6</sup> Sample Nomenclature: Site Name (underscore) Grid Space, Boring Designation (underscore) Sample Depth (top of interval only)

Sample names based upon grid node location (i.e. 016\_B002x\_xx) or for the grid square northeast of each grid node. If more than one boring is advanced within a given grid square, additional borings will be designated as "a," "b," "c," etc. For example, boring 016\_B002 would be the boring advanced on grid node B2 or the first boring advanced within grid square, and 016\_B002a would be the second, and 016\_B002b would be the third, as depicted below.



Concrete core sample to be collected at borings within the warehouse building where visible evidence of CCPW is encountered in the fill beneath the floor. Cores will be disposed of without analysis if CCPW is not visibly observed in that location.

**Sample Definitions:**

- \* One soil sample will be collected from 0-0.5 ft bgs (or from the first 6-inch soil/fill interval beneath pavement and sub-base).
- \* One soil sample will be collected in 6-inch intervals within each 4-foot interval unless CCPW is visually identified.
- \* Where CCPW is visually identified:
  - \* One soil sample will be collected from the 6-inch interval directly above visible CCPW material, unless the surficial sample is CCPW.
  - \* One soil sample will be collected from the 6-inch interval directly below the bottom of visible CCPW.
- \* One sample will be collected from the 6-inch interval directly above the first native soil.
- \* One soil sample will be collected from the 6-inch interval approximately 4 feet below the fill/native soil surface interface.
- \* One soil sample will be collected from the 6-inch interval approximately 8 feet below the fill/native soil surface interface (4 feet below the previous sample interval).
- \* One soil sample will be collected from the 6-inch interval approximately 12 feet below the fill/native soil surface interface (4 feet below the previous sample interval).

ft bgs - feet below ground surface  
 CCPW - Chromate Chemical Production Waste  
 Cr<sup>+6</sup> - hexavalent chromium

pH - pH scale  
 Eh - Oxidation-reduction potential ("ORP")  
 TBD - To Be Determined

**Table 2b**  
**Concrete Foundation Wall Sample Summary**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

Concrete Foundation Wall Location ID	Sample Type	Rationale	Estimated Sample Depth	Sample Name	Analysis Required
016_I010FW	Concrete Chip Sample	Determine presence/absence of CCPW-related impacts in the warehouse building foundation wall.	5.0 ft bgs	016_I010FW_xx	Cr <sup>+6</sup> , Eh, pH, Cr
016_I010aFW	Concrete Chip Sample	Determine presence/absence of CCPW-related impacts in the warehouse building foundation wall.	5.0 ft bgs	016_I010aFW_xx	Cr <sup>+6</sup> , Eh, pH, Cr
016_I011FW	Concrete Chip Sample	Determine presence/absence of CCPW-related impacts in the warehouse building foundation wall.	4.5 ft bgs	016_I011FW_xx	Cr <sup>+6</sup> , Eh, pH, Cr
016_I012FW	Concrete Chip Sample	Determine presence/absence of CCPW-related impacts in the warehouse building foundation wall.	4.5 ft bgs	016_I012FW_xx	Cr <sup>+6</sup> , Eh, pH, Cr

Notes:

Cr - total chromium

Cr<sup>+6</sup> - hexavalent chromium

CCPW - Chromate Chemical Production Waste

Eh - oxidation-reduction potential ("ORP")

pH - pH scale

ft bgs - feet below ground surface

**Table 3**  
**Sampling and Analysis Summary**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

Matrix	Analysis	No. Samples	Field DUP's	MS/MSD	Trip Blanks	Field Blanks <sup>6</sup>	Sample Container and Size	Preservation	Holding Time	Analytical Method <sup>1,5</sup>
Soil <sup>7</sup>	Hexavalent Chromium ( $Cr^{+6}$ ) (including pH & Eh) <sup>2,3</sup>	497	25	25	0	1/day	1 x 8 oz. glass	Cool to 4°C (± 2 °C)	30 days to digestion	SW-846 3060A/ SW846 7196A
	pH and ORP (Eh)	497	25	0	0	1/day	1 x 4 oz. glass jar	Cool to 4°C (± 2 °C)	24 hours	SW846 9045C and ASTM 1498
	TAL Metals <sup>4</sup> – Cr, Ni, Sb, Tl, & V	497	25	25	0	1/day	1 x 4 oz. glass	Cool to 4°C (± 2 °C)	6 months	SW846 3050B/ SW846 6010B, 6020
Concrete Core Samples <sup>8</sup>	Hexavalent Chromium ( $Cr^{+6}$ ) (including pH & Eh) <sup>2,3</sup>	±61	0	0	0	0	1 x 5 oz. Ziploc bag	Cool to 4°C	30 days to digestion	SW-846 3060A/ SW846 7196A
	pH and ORP (Eh)	±61	0	0	0	0	1 x 5 oz. Ziploc bag	Cool to 4°C (± 2 °C)	24 hours	SW846 9045/ ASTM 1498
	Total Cr	±61	0	0	0	0	1 x 5oz. Ziploc bag	Cool to 4°C	6 months	SW846 3050B/ SW846 6010, 6020
Concrete Foundation Samples	Hexavalent Chromium ( $Cr^{+6}$ ) (including pH & Eh) <sup>2,3</sup>	4	0	0	0	0	1 x 5 oz. Ziploc bag	Cool to 4°C	30 days to digestion	SW-846 3060A/ SW846 7196A
	pH and ORP (Eh)	4	0	0	0	0	1 x 5 oz. Ziploc bag	Cool to 4°C (± 2 °C)	24 hours	SW846 9045/ ASTM 1498
	Total Cr	4	0	0	0	0	1 x 5 oz. Ziploc bag	Cool to 4°C	6 months	SW846 3050B/ SW846 6010, 6020
Aqueous <sup>9</sup>	Hexavalent Chromium ( $Cr^{+6}$ ) (including pH & Eh) <sup>2</sup>	18	1	1	0	1/day	1 x 500 ml poly	Cool to 4°C (± 2 °C)	24 hours	SW846 3067A 7196A Undigested
	TAL Metals <sup>4</sup> – Cr, Ni, Sb, Tl, & V	18	1	1	0	1/day	1 x 500 ml poly	Cool to 4°C (± 2 °C) HNO <sub>3</sub> , pH<2	6 months	SW846 3050B/ SW846 6010, 6020 Undigested & Digested

Notes:

<sup>1</sup> The version of the analytical method used will depend on the specific analytical laboratory's NJ certification for the parameter.

<sup>2</sup> Hexavalent chromium ("Cr<sup>+6</sup>") sample analysis will include pH and Eh (oxidation reduction potential) for both soil and groundwater. Refer to the most recent Field Sampling Plan-Quality Assurance Project Plan ("FSP-QAPP") or further details.

<sup>3</sup> Cr<sup>+6</sup> analysis failing matrix spike/matrix spike duplicate ("MS/MSD") quality control criteria will require hexavalent chromium reanalysis, including Sulfide, Total Organic Carbon ("TOC"), pH, Eh, and Ferrous Iron. Chemical Oxygen Demand ("COD") and Biochemical Oxygen Demand ("BOD") may be necessary and will be decided on a case-by-case basis. Refer to the most recent FSP-QAPP for further details.

<sup>4</sup> Target Analyte List ("TAL") Metals analysis will be conducted for Chromate Chemical Production Waste ("CCPW") and CCPW-related metals: chromium ("Cr"), nickel ("Ni"), antimony ("Sb"), thallium ("Tl"), and vanadium ("V").

<sup>5</sup> Full New Jersey Tier I (CLP-I) data deliverables will be provided by the laboratory.

<sup>6</sup> For soils, field blanks can be collected either once per day or 10% of the total number of samples collected, but not more than once per day. For aqueous samples, field blanks must be collected at a rate of once per day. Field blanks will not be collected for concrete core samples.

<sup>7</sup> Soil sample quantity estimate based on 7 samples from each of 71 24-ft borings.

<sup>8</sup> Concrete cores will only be submitted for analysis if CCPW and/or CCPW-impacted material is visibly identified in the subsurface soils.

<sup>9</sup> Existing monitoring wells have screened intervals greater than 5 ft (see Table 5); therefore, two samples will be collected from each well (one per 5-ft interval). See text section 4.4.3.2.

**Table 4**  
**Monitoring Well Sampling**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

Monitoring Well No.	Water Bearing Zone	Rationale for Installation	Approximate Depth of Boring (ft bgs)	Approximate Screen Interval (ft bgs) for delineation	Groundwater Analysis <sup>1,2</sup>	Sample Name	Comments	Installed in Boring No.
016_MW01	Shallow	New permanent well to evaluate groundwater beneath the building on Site 016. Well located in the southwest portion of the building.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW01	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_C019
016_MW02	Shallow	New permanent well to evaluate groundwater beneath the building on Site 016. Well located in the southeast portion of the building.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW02	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_G015
016_MW03	Shallow	New permanent well to evaluate groundwater beneath the building on Site 016. Well located in the eastern portion of the building near the loading dock IRMs.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW03	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_H011
016_MW04	Shallow	New permanent well to evaluate groundwater beneath the building on Site 016. Well located in the middle portion of the building.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW04	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_E009
016_MW05	Shallow	New permanent well to evaluate groundwater beneath the building on Site 016. Well located in the northeast portion of the building.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW05	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_I006
016_MW06	Shallow	New permanent well to evaluate Site 016. Well located in the northeastern portion of the site.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW06	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_K007
016_MW07	Shallow	New permanent well to evaluate Site 016. Well located in the eastern portion of the site.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW07	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_L010
016_MW08	Shallow	New permanent well to evaluate Site 016. Well located in the southeastern portion of the site.	24 ft bgs	10 - 15 ft bgs or 5 ft into water table	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, TI, V	016_MW08	Intermediate water-bearing zone temporary well may be installed pending analytical results.	016_K013

**Notes:**

<sup>1</sup> Hexavalent chromium ("Cr<sup>+6</sup>") sample analysis will include pH and Eh (oxidation-reduction potential). Refer to the most recent Field Sampling Plan-Quality Assurance Project Plan ("FSP-QAPP") for further details.

<sup>2</sup> Target Analyte List ("TAL") Metals analysis will be conducted for Chromate Chemical Production Waste ("CCPW")-related metals: chromium ("Cr"), nickel ("Ni"), antimony ("Sb"), thallium ("TI"), and vanadium ("V").

bgs - below ground surface  
Cr<sup>+6</sup> - hexavalent chromium

Eh - Oxidation-reduction potential  
ft - feet

IRM - Interim Remedial Measure  
MW - Monitoring Well

pH - pH scale

**Table 5**  
**Existing Monitoring Well Sample Summary**  
**PPG Non-Residential Chromium Remediation Project**  
**Remedial Investigation Work Plan - Site 016**

Monitoring Well Number	Water Bearing Zone	Rationale for Sampling	Approximate Depth of Well (ft bgs)	Approximate Screen Interval Range (ft bgs)	Groundwater Analysis <sup>1,2</sup>	Sample Name	Number of Samples to be Collected <sup>3</sup>	Corresponding Boring ID
PPG4-MW2	Shallow	Resample Existing Well	16	7 - 16	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, Tl, V	016_PPG4-MW2	2	NA
PPG4-MW13	Shallow	Resample Existing Well	16	3.5 - 13.5	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, Tl, V	016_PPG4-MW13	2	PPG4-B88
PPG4-MW14	Shallow	Resample Existing Well	12	2 - 12	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, Tl, V	016_PPG4-MW14	2	PPG4-B57
PPG4-MW15	Shallow	Resample Existing Well	14	3.5 - 11	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, Tl, V	016_PPG4-MW15	2	PPG4-B91
PPG4-MW16	Shallow	Resample Existing Well	12	4.5 - 12	Cr <sup>+6</sup> , Eh, pH, TAL Metals - Cr, Sb, Ni, Tl, V	016_PPG4-MW16	2	PPG4-B86

**Notes:**

<sup>1</sup> Hexavalent chromium ("Cr<sup>+6m</sup>") sample analysis will include pH and Eh (oxidation-reduction potential) for both soil and groundwater. Refer to the most recent Field Sampling Plan-Quality Assurance Project Plan ("FSP-QAPP") for further details.

<sup>2</sup> Target Analyte List ("TAL") Metals analysis will be conducted for Chromate Chemical Production Waste ("CCPW")-related metals: chromium ("Cr"), nickel ("Ni"), antimony ("Sb"), thallium ("Tl"), and vanadium ("V").

<sup>3</sup> If the screened interval is greater than 5 feet, additional samples are required in accordance with Chapter 6E of the NJDEP Field Sampling Procedures Manual ("FSPM").

bgs - below ground surface  
 Cr<sup>+6</sup> - hexavalent chromium  
 pH - pH scale

Eh - Oxidation-reduction potential  
 ft bgs - feet below ground surface  
 NA - Not applicable