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November 23, 2010

VIA: HAND DELIVERY

Honorable Thomas P. Olivieri, P.J. Ch.
Hudson County Superior Court
Chancery Division, General Equity
Brennan Courthouse, 2nd Flr.
583 Newark Avenue
Jersey City, New Jersey 07306

**RE: New Jersey Department of Environmental Protection, et al.
v. Honeywell International, Inc. et al. v. City of Jersey
City et al., Superior Court of New Jersey, Law Division,
Hudson County, Civil Action No. HUD-C-77-05**

Dear Judge Olivieri:

I am the duly appointed Site Administrator for the above referenced matter.

In accordance with the Consent Order entered by the Court on November 10, 2010, DEP and PPG are required to provide a status update to the Court with regard to eight (8) outstanding issues. I am pleased to inform the Court that the parties have addressed all eight issues and by doing so have realigned project priorities to meet the five (5) year remediation goal. The parties have asked that I deliver this report to Your Honor. DEP and PPG respond to the eight (8) issues set forth in the Consent Order as follows:

1. Broad parameters of PPG excavation plan for the Garfield Avenue Site with transition process and timeline from existing interim remedial measures (IRMs) to excavation plan.

Response: Enclosed please find the PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group attached hereto as Exhibit A.

2. Joint review by respective DEP/PPG experts of premises and assumptions underlying application of the 49ng/m3 AAC level, and development of a reasonable method of measuring and applying the AAC level.

Response: The review was conducted at DEP headquarters on November 8, 2010 and information exchanged during the review was incorporated into a revised air monitoring plan. Enclosed please find the PPG Air Monitoring Plan for the Garfield Avenue Group attached hereto as Exhibit B.

3. Results from initial collection and analysis of hexavalent chrome PM 10 and the relevance of sampling to AAC data collection.

Response: PPG has installed PM 10 monitoring equipment and is collecting data for integration into the PPG Air Monitoring Plan for the Garfield Avenue Group attached hereto as Exhibit B.

4. Revised correlation between the dust surrogate level and hex chrome.

Response: Please see the PPG Air Monitoring Plan for the Garfield Avenue Group attached hereto as Exhibit B.

5. Cost and benefit review of a 24-hour turnaround for hex chrome analysis.

Response: Please see the PPG Air Monitoring Plan for the Garfield Avenue Group attached hereto as Exhibit B.

6. Revised management plan for implementing dust suppression best management practices, including an assessment of best dust suppression technologies.

Honorable Thomas P. Olivieri, P.J. Ch.

November 23, 2010

Page - 3 -

Response: Please see the PPG Air Monitoring Plan for the Garfield Avenue Group attached hereto as Exhibit B and the PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group attached hereto as Exhibit A.

7. Schedule for negotiations with PSEG on site cleanup coordination.

Response: PPG intends to meet with PSEG representatives in January 2011. PPG will outline the goals and agenda with PSEG before this meeting takes place.

8. Revised Master Schedule with revisions reflecting changes made to meet JCO 5-year cleanup goal.

Response: Enclosed please find a summary graphic of relevant changes to the Master Schedule timeline, which is attached hereto as Exhibit C. A revised Master Schedule based on the agreements reached in this plan is being developed and will be submitted at our next appearance before the Court.

I thank the Court for its attention to this matter. If Your Honor has any questions, please feel free to contact me. If not, all of the parties will be fully prepared to discuss the enclosed with Your Honor at our scheduled hearing on December 16, 2010.

Respectfully submitted,

W. Michael McCabe

W. MICHAEL MCCABE

PAS:baw

Encls.

cc: (All via email/with enclosure)

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Brian McPeak, Planning Progress, LLC

EXHIBIT A

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

This outline provides a draft conceptual plan for remediation of Chromate Chemical Processing Waste (CCPW) in soil and groundwater at the Garfield Avenue Group of Sites (Sites 114, 132, 133, 135, 137 and 143) in Jersey City, New Jersey. The goal of this document is to provide a very broad, conceptual overview of proposed remediation activities. The document is divided into three sections. The first section presents the conceptual approach for source materials in soils. The second section presents the conceptual approach for groundwater. The third section presents a proposed sequence and approximate schedule for remedial activities.

1.0 Conceptual Approach for Source Materials

Excavation and off-site disposal is the proposed remedy for source materials as defined below. The overall remediation goals are:

- Elimination of potential exposure to hexavalent chromium in source materials due to direct contact or windborne dust;
- Removal of source materials that adversely affect groundwater quality; and
- Establishing site conditions suitable for future uses of the Site

Source materials are defined as Chromate Chemical Processing Waste (CCPW) which includes Chromium Processing Ore Residuals (COPR nodules), green/grey mud, and fill mixed with COPR or green/grey mud. Procedures for identification of COPR and green/grey mud were developed as part of the IRM Work Plans and the Feasibility Study Work Plan. In general, source materials are confined to depths above the meadow mat in areas where the meadow mat is contiguous. In areas where the meadow mat is not contiguous, source materials may extend to greater depths.

A preliminary depiction of areas for source materials excavation and off-site disposal is provided as Figure 1. A cross section depicting the proposed depth of excavation and off-site disposal on the main Garfield Avenue Site (Site 114) is provided as Figure 2.

1.1 Proposed Excavation Criteria

The horizontal extent of excavation (in this conceptual plan, excavation includes off-site disposal) will be determined by the presence of hexavalent chromium above 20 parts per million (ppm) and for depths from ground surface to the meadow mat. The vertical extent of excavation will be determined using the following criteria in sequence:

- Excavation will continue until all source material is removed; or
- The excavation has reached the meadow mat; or
- In areas where the meadow mat is not competent, excavation will continue until source material is removed.

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

The meadow mat provides a natural barrier to chromium migration and, therefore, will be protected from damage to the extent practical. The meadow mat is effective at absorbing hexavalent and trivalent chromium and possibly effective at reducing hexavalent chromium to the less mobile and less toxic trivalent state. The meadow mat limits both the horizontal and vertical migration of groundwater impacted with hexavalent chromium. Removal of the meadow mat could possibly allow increased vertical or horizontal migration of hexavalent chromium in groundwater.

In most circumstances the proposed excavation will meet the 20/20 chromium policy (memorandum from Lisa Jackson, Commissioner, February 8, 2007) by achieving pit bottom samples with hexavalent chromium concentrations of less than 20 part per million (ppm) or by reaching a depth of 20 feet below ground surface or greater. If circumstances exist where source removal excavation is less than 20 feet and soil in the pit bottom exceeds 20 ppm hexavalent chromium, PPG will achieve compliance with the chromium policy by extending the depth of excavation to achieve the 20 ppm goal or the 20 foot depth or by subsequent treatment of soil to achieve the 20 ppm goal. With removal of the source material, in-situ treatment of soils exceeding 20 ppm is expected to be feasible (subject to pilot scale demonstration). If treatment to below 20 ppm hexavalent chromium is not successful, areas not meeting the 20 ppm standard will be excavated.

To date, a circumstance where hexavalent chromium concentrations in the meadow mat have exceeded 20 ppm has not been encountered. PPG will propose a specific procedure for addressing hexavalent chromium in meadow mat over 20 ppm. That procedure will consider the depth of the excavation, the thickness of the meadow mat at that location, and the probability of successful in-situ treatment.

The above criteria apply to areas and depths that are accessible for excavation. The accessible depth of excavation will be determined as part of the detailed design and will be in the range of a maximum of 35 feet deep. Accessible areas are depicted in Figure 1. Accessible areas are defined as those that are not inaccessible areas as defined in Section 1.3 below.

1.2 Excavation Areas and Approximate Tonnage

In general, essentially all source materials at the Garfield Avenue Group of sites will be excavated and disposed off-site. The excavation depth will likely average 15 feet and range from 10 feet to about 35 feet on the Garfield Avenue Site. Excavation depths may vary on the other sites. Preliminary excavation estimates for chromium source material removal for all sites are as follows:

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

Property	Estimated Tonnage
Site 114	500,000*
Talarico	1,000*
Town & Country	35,000*
Rudolf Bass	140,000*
Ross Wax	30,000*
Vitarroz	2,000*
Estimated Total	708,000*

*these numbers are approximate and subject to refinement

Preliminary estimates for manufactured gas plant wastes for all sites are as follows:

Property	Estimated Tonnage
Site 114	520,000 tons (30,000 tons co-mingle with CCPW)*
Talarico	Not known, not expected here*
Town & Country	Not known, possible small amount*
Rudolf Bass	Not known, possible small amount*
Ross Wax	Not known, possible small amount*
Vitarroz	Not known, possible small amount*
Estimated Total	Approximately 520,000*

*these numbers are approximate and subject to refinement.

1.3 Areas Presumed to be Inaccessible to Excavation and Off-site Disposal

The following areas are presumed to be inaccessible for excavation:

- Garfield Avenue and within approximately 10 feet of Garfield Avenue:** Garfield Avenue is a main road and is underlain by numerous utilities. Closing of this roadway and the associated utilities would be a major disruption to the City. Only a small amount of impacted soil is expected to be near or under this roadway. Use of shoring is proposed to allow excavation as close as practical to the roadway. As part of Interim Remedial Measure #1 (IRM #1) shoring was installed on east side of Garfield Avenue and excavation to within 10 feet of Garfield Avenue has been conducted without damage to the roadway. Other than closing the sidewalk, inconvenience to City residents has been minimal.
- Within 30 to 50 feet from the Light Rail Tracks:** The exact distance is subject to discussions with the transit authority, geotechnical evaluations, and detailed design. Shoring or other measures may be used to establish the closest safe distance for excavation.

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

- **Carteret Street and within approximately 10 feet of Carteret Street:** In addition to being a side street, Carteret is underlain by numerous utilities including two large diameter (over three feet) sewer mains. These sewer mains are critical to the Jersey City infrastructure. PPG will evaluate the utility and feasibility of closing Carteret during remediation work.
- **Halladay Street and within approximately 10 feet of Halladay Street:** Halladay Street is a side street that contains various utilities.
- **Valley and Forrest Streets and within 10 feet of these streets:** Both of these streets are side streets (Valley is a "paper" street) that contain various utilities.
- **Work that may damage nearby properties:** If the depth and proximity of CCPW removal could undermine nearby structures, some areas may be determined to be inaccessible.

Final determination to be made during detailed design. Other inaccessible areas may be defined as part of the detailed design. The detailed design will include geotechnical assessments, inventorying utilities and buildings, and negotiations with the City and nearby property owners. The feasibility of containment systems, reactive barriers, and in-situ treatment methods in and near the inaccessible areas will be evaluated as part of the detailed design.

1.4 Backfill and Site Restoration

Backfill specifications, compaction requirements, final grades, and surface finishes will be determined as part of the detailed design. Where fill is placed in excavated areas, only allowable reusable fill or fill that meets the regulatory definition of "clean fill" will be used. Selection of backfill, compaction, and other aspects of the site restoration will be discussed with the owner/future developer of the properties. However, PPG makes no commitment to improve site conditions, other than addressing environmental issues, to facilitate re-development of the properties.

1.5 Storm Water Management

The current IRM work is being conducted under an approved Soil Erosion and Sediment Control Plan to prevent impacts from storm water run-off. A similar plan will be developed as part of the full-scale design. The remediation work will be designed to minimize the potential for rainwater to come into contact with impacted soils. Where contact with impacted soils is unavoidable, water coming into contact with impacted soil will be contained, tested, and treated as necessary prior to disposal. The full-scale design will also include an approach to manage storm water in a manner to prevent hexavalent chromium from impacting storm water and potentially migrating off-site. The proposed remedy will include removal and replacement of the storm water drains at Site 114. The

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

replacement drainage system will be designed to be water tight and not allow groundwater infiltration. This will eliminate the potential for storm water leaving the site to contain hexavalent chromium. Removal and replacement of storm water lines in other areas of the Garfield Group of sites will be evaluated as part of the detailed design.

1.6 Integration of Chromium Remediation and Manufactured Gas Plant (MGP) Remediation

MGP residuals including oil, tar, filter wastes, and groundwater impacts with semi-volatile and volatile organic compounds are present at Site 114. The primary concerns, oil and tar, are present on the eastern half of Site 114. Tar and oil may also be present off Site 114 in the area of Halladay and Carteret Streets. Oil and tar is collocated with chromium material but is mostly deeper in the system. As shown in Figure 2, oil and tar are present at depths of up to 45 feet below the ground surface. While the MGP material is generally at a greater depth, some co-mingling of the chromium and MGP materials has occurred. Minimizing further cross-contamination of the chromium impacted and MGP impacted soils will be addressed in the detailed design. Disposal of co-mingled waste may present some challenges and possibly require pre-treatment prior to disposal. On-site pre-treatment is not being considered at this time. Comingled waste will be addressed consistent with Section 1.1 of this conceptual plan.

1.7 Post Remediation Institutional Controls for Soil

Institutional controls may include:

- Deed notices for the properties;
- Soil management plan for soil in inaccessible areas and below 20 feet (to prevent utility work or others from contacting the soil); and
- Maintenance of covers over the inaccessible areas.

1.8 Integration of the Current IRM Work With the Final Remedy

Fieldwork is currently underway to complete IRM#1 and IRM#2. The specific work areas and how the IRM work will be modified to dovetail into the proposed final remedy are as follows:

- Western half of IRM#1: Currently this area is being fully excavated and backfilled with clean fill. This approach will be continued. The criterion for terminating vertical excavation was 600 to 1,000 ppm hexavalent chromium, a level which is expected to be treatable through in-situ injection approaches to the applicable soil chrome standard. In future grids, excavation will proceed until the criteria

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

presented in Section 1.1 are met. In this area excavation is being conducted in 30x30 foot grids. The grids are fully dewatered for inspection and each 30x30 foot grid is sampled for hexavalent chromium.

- Eastern half of IRM#1: The original focus in this area was removal of concrete and green/grey mud only. The resulting excavation pits would have been backfilled with site soils that do not contain green/grey mud. When work resumes in this area, all materials will be removed until the criteria in Section 1.1 area met. This area will be excavated in 30x30 foot grids and each grid will be sampled for hexavalent chromium. This area will be backfilled with clean fill.
- Morris Canal: Source material in this area was slated for excavation and backfilled with clean fill. This area has already been surrounded by sheet piling and is slated for excavation to at least 20 feet below ground surface. Pit bottom samples will be collected every 900 square feet for informational purposes. This work is consistent with the final remedy and will proceed unchanged.
- IRM#2: The original focus in this area was removal of concrete and green/grey mud only. The resulting excavation pits would have been backfilled with site soils that do not contain green/grey mud. To be consistent with the final remedy, all materials in this area will now be removed until the criteria in Section 1.1 area met. This area will be excavated in 30x30 foot grids and each grid will be sampled for hexavalent chromium. This area will be backfilled with clean fill.
- Soil Treatment Pilot Studies: Test pitting and testing designed to select optimal locations for treatability tests are on-going and will continue. Pilot testing of the In-Situ ARCADIS biological process and the In-Situ Calcium Polysulfide treatment process will be conducted as originally planned. These technologies may have applications near the inaccessible areas, at other PPG sites or as part of the groundwater remediation approach. Pilot testing of the RMT ex-situ treatment process has been cancelled. Soil in the pilot study cell will be excavated and disposed of off-site at the conclusion of the pilot studies.
- Dewatering and Treatment of Extracted Groundwater: The current process of localized dewatering, off-site disposal of groundwater, and additional processing of excavated soil prior to off-site disposal has proven successful in the western portion of IRM#1. The larger excavation area and deeper excavations of the full-scale remediation will necessitate another approach. PPG will begin design and construction of an on-site groundwater treatment plant. Use of this facility is necessary to manage the expected volume of water from a fuller-scale excavation. The facility will also allow PPG to conduct long-term (weeks) dewatering prior to excavation in specific areas.

2.0 Conceptual Approach for Groundwater

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

The general area of groundwater impacts is depicted in Figure 3. In the remedial investigation, the groundwater has been divided into three overburden zones and the bedrock. The zones and very general conditions are discussed below:

- The Shallow Zone is approximately 5 to 20 feet below ground surface and is above the meadow mat (where present). This zone contains groundwater in direct contact with source materials (COPR and green mud). This zone contains the highest levels of chromium in groundwater (up 8,000,000 ug/l)
- The Intermediate Zone is from approximately 20 feet to 40 feet. Source material is also present in this zone but only in limited areas such as within the Morris Canal. Chromium levels in groundwater are over 1,000,000 ug/l in portions of the intermediate zone.
- The Deep Zone is from approximately 40 feet to the bedrock (depth varies, typically 60 feet below ground surface). No source material is present in the deep zone. Chromium levels are typically below 1,000 ug/l.
- The Bedrock Zone: The need for remediation in the bedrock zone has not been determined at this time.

In general, the overall flow direction is to the southeast towards the Hudson River. However, the groundwater flow direction in the shallow zone is variable and may be influenced by sewers, buried utilities and foundations.

Remediation for groundwater may include the following:

- removal of source materials (underway as part of IRMs and soil remediation);
- in-situ treatment (pilot studies of abiotic and biological treatment are planned);
- containment walls (will be evaluated for inaccessible areas);
- reactive barriers and/or reactive zones (will be evaluated for impacted groundwater migrating from inaccessible areas);
- groundwater extraction and treatment
- natural attenuation; and
- institutional controls

Removal of source material and in-situ treatment of groundwater is planned by PPG. Natural attenuation is also expected to be part of the final remedy. The need and feasibility of additional measures will be evaluated. Other technologies or methods beyond those listed above may be considered by PPG to address groundwater.

2.1 Groundwater Goals

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

Groundwater in the area is not used for drinking water or withdrawn for other purposes. Recharge to surface water bodies does not occur in the area. Infiltration of impacted groundwater into storm sewers is occurring.

The initial goal for groundwater remediation is to achieve approximately 1 ppm or less hexavalent chromium after initial in-situ treatment. The ultimate goal is to reduce the concentration of chromium in groundwater to below the NJDEP Groundwater Quality Standard of 70 ug/l.

2.2 Impacted Area

The areas of chromium in groundwater over 1,000 ug/l and over 70 ug/l are depicted in Figure 3. The area of groundwater over 1,000 ug/l corresponds closely to the planned soil excavation areas. The area of groundwater over 70 ug/l is only slightly larger than the area over 1,000 ug/l.

2.2 Removal of Source Material

As discussed in Section 1, green/grey mud, COPR, and soil mixed with COPR or green/grey mud will be removed. This material is the primary source of impacts to groundwater. The excavation and off-site disposal work will include removal of a significant amount of saturated source material with high levels of chromium. This will result in a significant improvement in groundwater quality. As shown in Figure 1, a limited amount of source materials may be inaccessible for excavation and off-site disposal.

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

2.3 In-Situ Groundwater Treatment

Following removal of the source materials, in-situ treatment of groundwater will be conducted. This will be conducted in the shallow zones as a polishing step after excavation. In-Situ injections are also planned for the intermediate zone. Based on monitoring for natural recovery, injections in the deep zone may be unnecessary.

In-situ treatment of groundwater involves the reduction of highly soluble hexavalent chromium to the less soluble trivalent form. PPG will be pilot testing two methods for in-situ groundwater treatment. The first method to be tested uses a quick acting reductant (calcium polysulfide) and a long lasting reductant (ferrous sulfide) to convert the hexavalent chromium to trivalent chromium. The second method to be tested is a biologically mediated reduction of hexavalent chromium. Following the pilot scale testing, one or a combination of these in-situ methods will be selected for full-scale application.

Both of the in-situ treatment methods under consideration involve the installation of injections wells and the injection of treatment solutions into the groundwater. These injections would be conducted in areas of elevated chromium concentrations. The in-situ groundwater technologies under consideration also provide on-going treatment of impacted groundwater that may migrate into the treatment area after the initial treatment is completed.

2.4 Containment Wall/Reactive Barriers

As discussed in Section 1.3, some areas are inaccessible to excavation. In the up-gradient areas west and north of Site 114, groundwater and possibly source material may be inaccessible to excavation or treatment and present an on-going source of groundwater impacts. This condition may be addressed by installation of impermeable containment walls (water tight sheet piling, for example). Another approach would be to provide a long lasting reductant in down gradient areas to treat hexavalent chromium that may migrate from the inaccessible areas. Installation of a permeable reactive barrier to treat the groundwater is another similar approach.

Inaccessible areas are also present in areas down gradient of the main source areas. Impacted groundwater and possibly source materials may be present underneath Carteret Street and Halladay Streets. Containment walls and reactive barrier walls may also be effective treatment methods in these areas.

2.5 Groundwater Extraction and Treatment

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

Groundwater extraction and treatment is expected to be used for dewatering during the excavation of source materials. Groundwater extraction and treatment will also be evaluated as a component of the In-Situ Groundwater remediation or part of a broader groundwater remediation strategy.

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

2.6 Natural Attenuation

With removal of the source materials, natural processes will contribute to the removal of chromium from the groundwater. Within the source areas, groundwater concentrations will remain elevated after soil removal. In-situ groundwater treatment is necessary to reduce chromium concentrations from 1,000's of parts per million to the low parts per million range. With this head start, natural attenuation may be effective at further reducing chromium concentrations to approach the 70 ppb goal.

The distance from areas with hexavalent chromium levels over 1,000 ug/l to under 70 ug/l is only a few hundred feet or less. This may indicate that natural conditions outside the source areas prevent the rapid migration of hexavalent chromium in groundwater. As part of the natural attenuation assessment additional testing to assess the ability of the aquifer to treat hexavalent chromium will be conducted.

3.0 Conceptual Sequence and Schedule

A detailed schedule will be developed as part of the detailed design. A very conceptual schedule and sequence is as follows:

- Continue IRM Work (as modified above): October 2010 to Fall of 2011 (this will include excavation and off-site disposal of approximately 130,000 tons of soil)
- Document changes to IRM approach in revised IRM Plan: December 2010
- Conduct Soil Pilot Studies: December 2010 to April 2011
- Detailed Design of Soil Remedy: November 2010 – Spring 2011 (note this time may be extended if pre-design fieldwork is needed). Design of containment/treatment of small amount of CCPW in inaccessible areas may lag design of the excavation work.
- Groundwater pilot studies: March 2011-December 2011
- Begin full-scale excavation outside limits of IRM #1 and #2: Fall of 2011
- Groundwater Remediation Design: January to March 2012
- Begin Work in Areas outside the Site 114: Fall 2012 (note to meet the overall schedule, it will be necessary to work Site 114 and one or more of the other sites in this group at the same time)
- Complete Excavation and Site Restoration: December 2014
- Begin Groundwater Remedies: January 2015

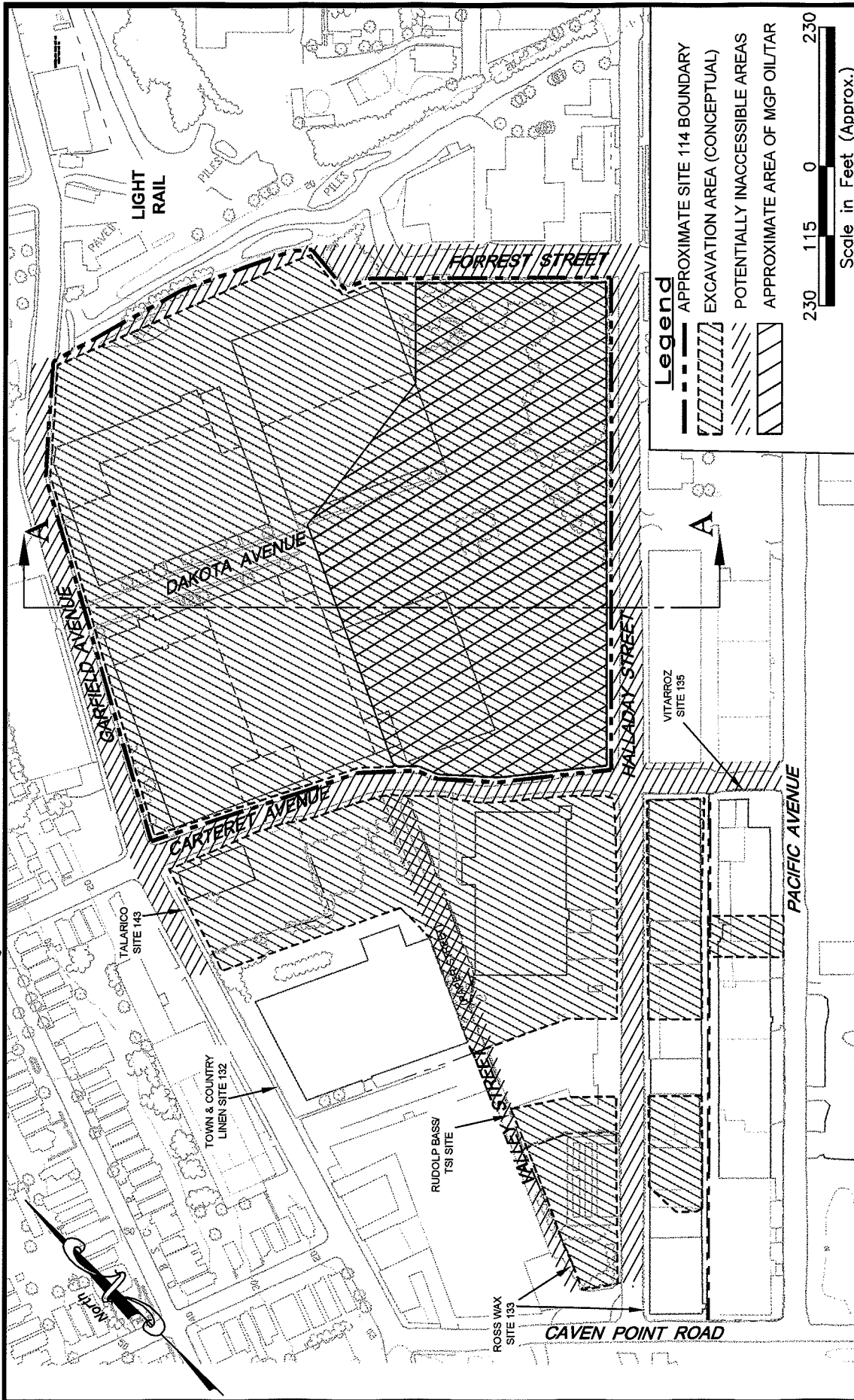
The excavation work in the IRMs is currently underway. The excavation/load-out rate will be in the range of 400 to 600 tons per day for the balance of 2010. Assuming a viable goal for dust in air is implemented, the IRM work will gradually ramp up to a rate of 800 to 1,000 tons per day in early 2011. With completion of the design for removal of source material, a second or possibly third excavation team will be deployed. This will

PPG Conceptual Plan for Remediation of CCPW for the Garfield Avenue Group

allow an overall production rate in the range of 1,000 to 1,250 tons per day. This increase in production rate is necessary to reach the goal of completion of the source removal by December 2014. The assumed production rate is based on 138 days per year of active excavation and loading, a 7 am to 3:30 pm, five days per week work schedule. These parameters may be adjusted based on the detailed design, conditions encountered in the field, new regulatory restrictions, limitations on local truck traffic, limitations on disposal of water from dewatering, property access, or other factors.

With the transition to full-scale excavation, PPG is planning to design and construct an on-site groundwater treatment plant. The groundwater treatment plant will allow a more comprehensive dewatering program. The dewatering program will include installation of sheet piling in strategic locations, use of wellpoints, and long-term dewatering prior to excavation. These upgrades will facilitate reaching excavation depths, inspection/sampling of pit bottoms, and minimize additional processing to address free liquids in soil prior to load-out.

To meet the anticipated production rate, PPG is evaluating and testing different transportation means and other disposal facilities. For example, use of intermodal containers in has been recently tested. It is anticipated that several disposal facilities and two or three different transportation mechanisms will be developed for use in the full-scale design.



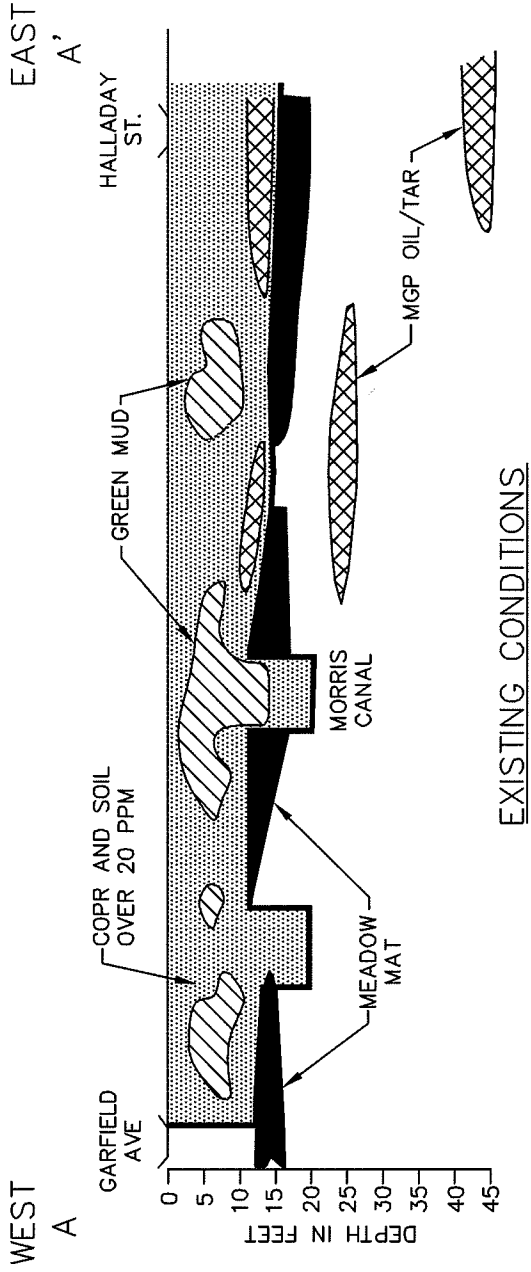
DESIGNED BY:		REVISIONS	
CWM	NO.:	DESCRIPTION:	DATE:
DRAWN BY:			
JK			
CHECKED BY:			
APPROVED BY:			

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CONCEPTUAL EXCAVATION AREAS	
PPG - GARFIELD AVENUE PROJECT AREA	
JERSEY CITY, NEW JERSEY	
SCALE:	PROJECT NUMBER:
NTS	60158739.4011.1
DATE:	
11/17/10	

FIGURE NUMBER:
1
SHEET NUMBER:
-

Piscataway on 'USPSW1FP004'(J)Project/PPG Industries - PPG/Cadd/Site 114/Concept-Remed/ExcavAreas_2010-11-17



EXISTING CONDITIONS



PPG GARFIELD GROUP

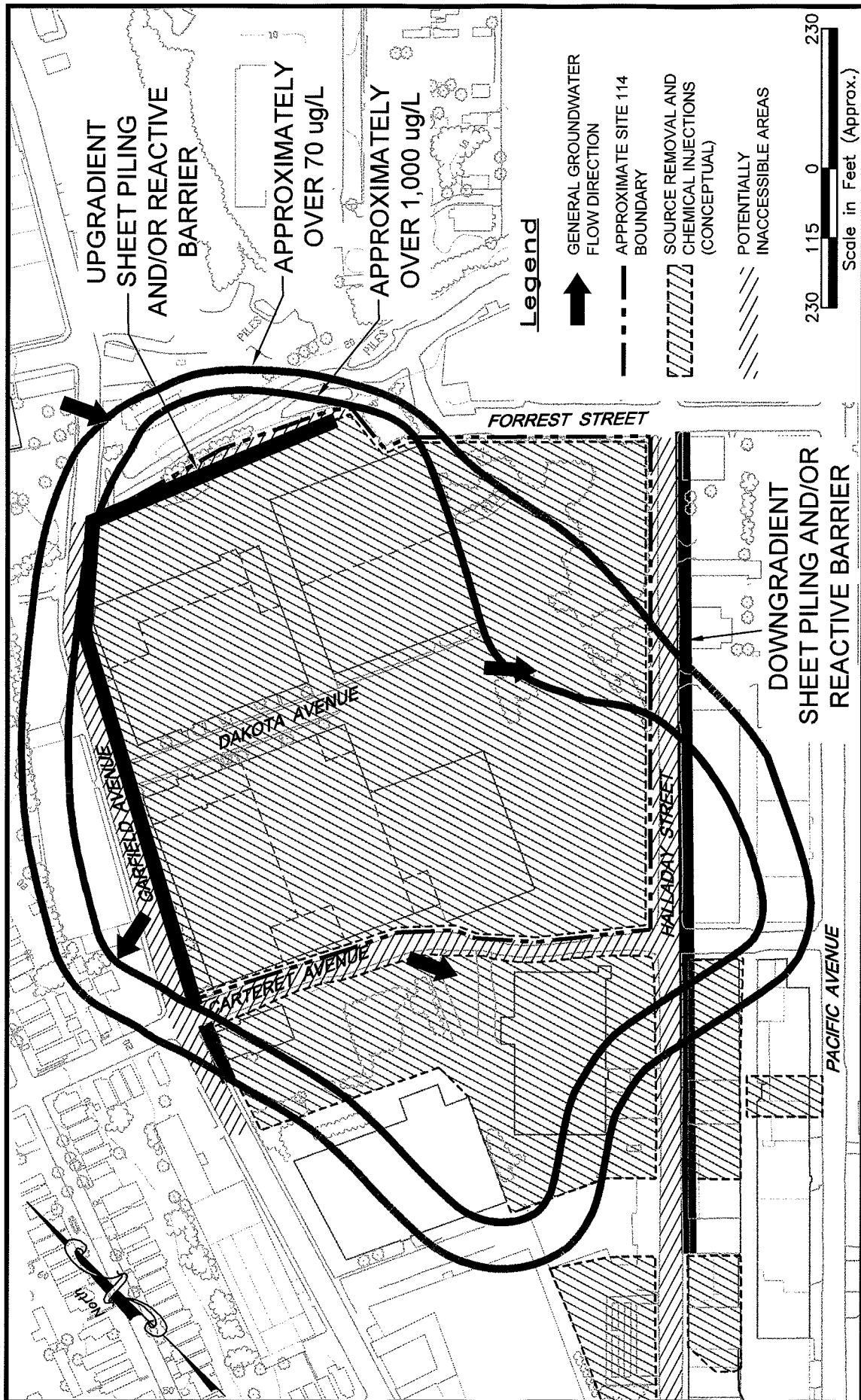
60158739.4011.1

DATE: 11/22/2010

DRWN: J.E.B.

CROSS SECTION OF SOIL REMEDIATION

FIGURE 2



DESIGNED BY:	NO.:	DESCRIPTION:	DATE:	BY:
CWM				
DRAWN BY:				
JK				
CHECKED BY:				
SM				
APPROVED BY:				

AECOM

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CONCEPTUAL HEXAVALENT CHROMIUM IN GROUNDWATER REMEDIATION	
PPG GARFIELD AVENUE PROJECT JERSEY CITY, NEW JERSEY	
SCALE:	PROJECT NUMBER:
NTS	60158739.4011.1
DATE:	
11/11/10	

FIGURE NUMBER:
3
SHEET NUMBER:
1

Piscataway on 'USPSWIFP004'(J)Project/PPG Industries - PPG/Site_114/Concept-Remed/ExcavAreas_2010-11-11

EXHIBIT B

PPG Air Monitoring Plan for the Garfield Avenue Group

The purpose of this memo is to provide PPG's approach to meeting the Acceptable Air Concentration (AAC) for hexavalent chromium of 49 ng/m³ over the project duration at the Garfield Avenue sites. NJDEP has calculated an AAC for hexavalent chromium of 49 ng/m³ based on 8 hours-per-day, 138 days-per-year and 5 years of exposure over the project duration.

The AAC, measured over the project duration, will be the principal measure of the effectiveness of dust control. However, PPG will utilize shorter duration rolling averages that will provide for the early assessment of performance trends and, if necessary, allow for responsive corrective measures to that emissions of hexavalent chromium are maintained below the AAC and minimized to the greatest extent practical.

The real-time dust monitoring program and strong focus on rolling average metrics of integrated hexavalent chromium concentrations provide for ongoing and regular data evaluation that will, if necessary, be used to trigger any needed corrective actions. The metrics and response actions that are proposed herein represent a tool to be used to continually evaluate integrated Cr⁶ concentrations and direct any needed modifications to site activities to remain below the AAC on a project-to-date basis.

PPG Proposal

The real-time continuous dust monitoring results will continue to provide added protection and will drive immediate corrective actions in the event that elevated dust levels are observed. Beyond the real-time data, in order to provide a focus on integrated hexavalent chromium concentrations, PPG will utilize the rolling averages identified in the below table as supplemental metrics to provide a mechanism for triggering action to ensure compliance with the AAC. These metrics will be applied at each individual perimeter fence line air monitoring station.

The action levels associated with these metrics have been selected to provide flexibility in performing site operations needed to meet the aggressive 5-year project duration while demonstrating compliance with the AAC. It is important to note that these action levels are based on consideration that the AAC is an average value, and as such, are representative of the range of a data set that consists of individual values both below and above the average.

Proposed durations for the rolling averages are 30, 60 and 90 working days which correspond to about 5%, 10% and 15% of the total estimated project duration of 690 days. These time frames are of sufficient duration to adequately display realistic, actionable data trends and sufficiently short to provide adequate response time to ensure that the AAC can be achieved over the project duration. In addition, the action levels of 45, 40 and 35 ng/m³ for the 30-day, 60-day and 90-day rolling averages

PPG Air Monitoring Plan for the Garfield Avenue Group

respectively are intended to be regressive when applied as a whole and, therefore, are protective of the AAC (49 ng/m³). Note that these rolling averages will be calculated on a regular basis as data is received from the laboratories, and corrective actions will be evaluated and implemented as necessary.

PPG Air Monitoring Plan for the Garfield Avenue Group

Metric Observation	Response Action
Cr6 30-day TWA concentration ≥ 45 ng/m ³	External meeting (appropriate JCO participants) to review levels, evaluate activities each day when elevated levels were observed, and trigger corrective action. (See guidelines below)
Cr6 60-day TWA concentration ≥ 40 ng/m ³	
Cr6 90-day TWA concentration ≥ 35 ng/m ³	
Cr6 project-to-date TWA concentration GOAL < 30 ng/m ³	

Note – these metrics apply only at the fenceline AMS

An action level of 45 ng/m³ as proposed for the 30-day rolling average, will require corrective actions to be taken to maintain or reduce the 30-day rolling average to below 45 ng/m³. As a result the 30-day rolling average alone is protective of the AAC but when used in combination with the 60-day and 90-day rolling averages and their lower associated action levels, provides an additional safety factor further assuring attainment of the AAC. Collectively, the application of these three rolling averages and their associated action levels is designed to keep the long-term average hexavalent chromium air concentrations below 30 ng/m³ which is about 30% below the AAC.

Dust Control and Response Action Guidelines:

PPG is committed to continuously maintaining site conditions that are protective of the surrounding community, and will continue to utilize the existing robust dust control measures that have already been implemented at the site. The current dust control program at Site 114 includes the following:

- Assignment of a full-time Dust Control Manager whose sole responsibility is dust monitoring and suppression. This person reports directly to the site manager and has authority to deploy additional dust control measures, slow work, or stop work to address dust issues.
- A detailed accounting of work activities, wind conditions, weather, and real-time dust readings are kept every day to improve understanding of the conditions likely to generate elevated dust. This real-time, daily data compilation and review is used to constantly evaluate potential dust sources and implement corrective actions with a sharp focus on maintaining compliance with the AAC.
- AECOM staff is required to fill-out a daily check list to ensure that requirements of the IRM work plan and the dust control plan are implemented.

PPG Air Monitoring Plan for the Garfield Avenue Group

- Weston is informed of any proposed or actual deviation for the approved dust suppression measures or monitoring methods.
- Phased resumption in site work to study the potential for various activities to generate dust with hexavalent chromium. This work may lead to changes in how specific activities are conducted.
- Apply Formula 480 to concrete slabs and roadways.
- Maintain soil stockpiles at a maximum of 4,000 cubic yards.
- Except small amounts of soil draining back into the excavation, all soil is placed in the designated stockpile areas at the end of the day.
- Cover with plastic sheeting inactive areas where soil has been disturbed. Note that the work area is inspected several times each day for the presence of chromium blooms. If detected, the blooms are covered or otherwise addressed immediately or by the end of the day at the latest.
- Soil piles are kept covered with tarps that are in good condition. Inactive piles are covered within two hours.
- PPG is installing a water line into the site to ensure an adequate supply of water on-site at all times.
- Concrete and metal debris piles are kept covered.
- Installation of security cameras with night vision to allow for remote site reconnaissance during non-working hours. In the event of an action level exceedance, the technician is currently paged and logs in remotely to review data. The security cameras will allow the technician to also get a remote view of the site to help evaluate what may be causing the elevated measurements.

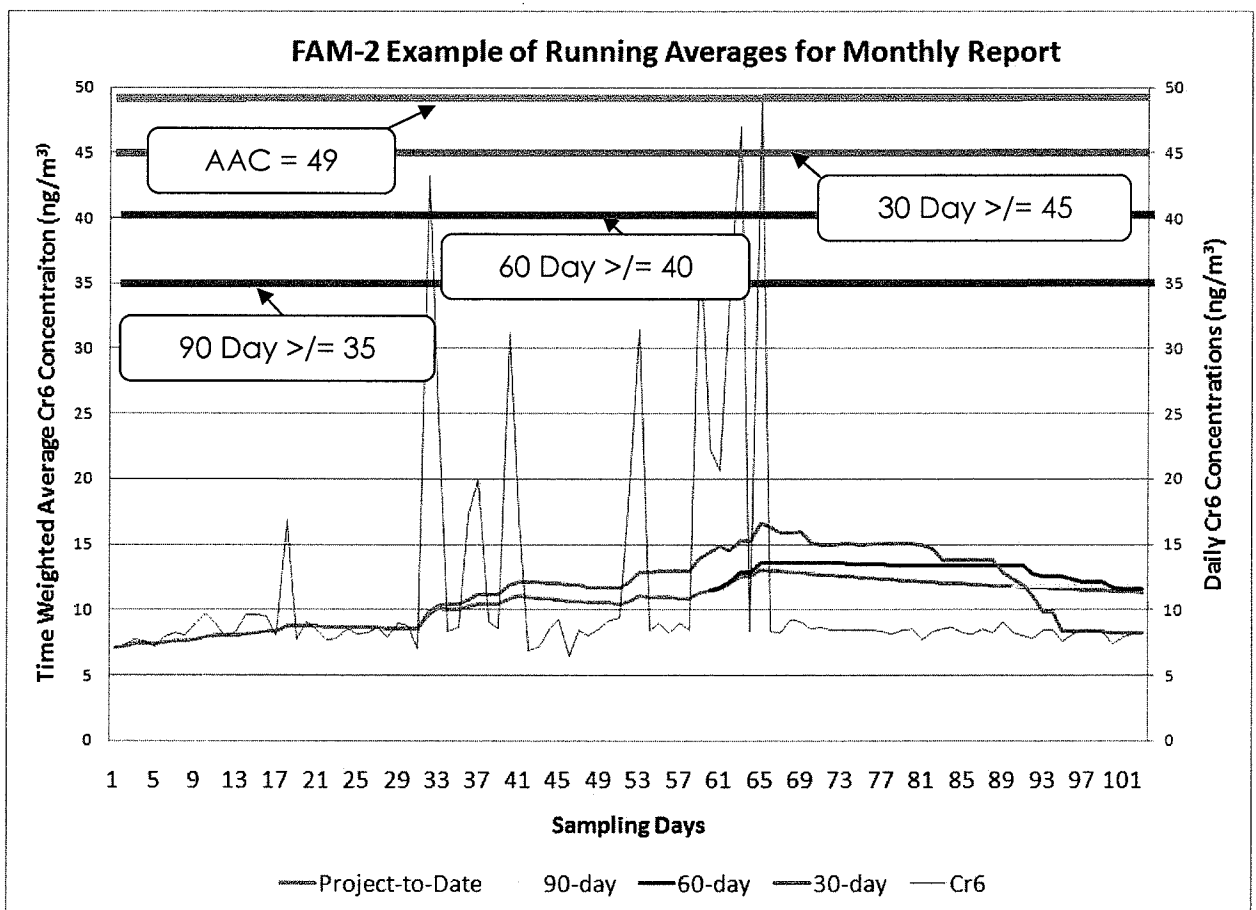
Following is a non-exhaustive list of potential additional technological tools and potential response actions that will be evaluated for applicability based upon the sources of dust that are determined after a thorough review of the data. These tools/actions will be implemented daily in response to elevated real-time measurements and to avoid visible dust leaving the site, and any time the rolling average metric action levels are exceeded:

- Assign two laborers to applying water mist to work areas where necessary. Use of two misters will be used whenever impacted concrete is broken up.
- Reduce open excavation area to reduce footprint of potential dust sources.
- Deploy a water curtain, consisting of several misters, in downwind areas and other areas around the work area as needed.
- Utilize a mister directly on the concrete hammer.
- Work near the fenceline will be curtailed or stopped if wind conditions are unfavorable (high winds going in the direction of the nearest fenceline).
- Slow the pace of work.

PPG Air Monitoring Plan for the Garfield Avenue Group

- The use of the DustBoss automatic misting system was considered. This technology is best for building demolition. It is hard to control where the mist goes. The water curtain recently deployed is much more effective. This may be re-considered by an outside dust expert.
- The use of other dust suppressing material instead of Formula 480. SoilLoc has been attempted at the site but because it is clear it was hard to tell where it had been applied. Other options may be considered by an outside dust expert.

The figure below, which presents the data collected at the perimeter air monitoring station FAM2 which has been the location where the majority of elevated hexavalent chromium concentrations have been observed to date, illustrates the use of the three proposed rolling averages and their associated action levels.



Data Evaluation and Reporting

PPG Air Monitoring Plan for the Garfield Avenue Group

Air monitoring data is evaluated on a daily basis, and observations are recorded regarding activities being performed at the site. This strong focus on air monitoring and dust control allows for the consideration for the implementation of corrective actions on an immediate basis. The Event Documentation Reports (EDR) that are produced within 3 days and submitted to Site Administrator for timely distribution after analytical results are received provide an additional level of protection and increase communication to alert the stakeholders any time elevated hexavalent chromium or dust concentrations are observed. Regular report submittals beyond the EDR include the current weekly summaries that are now proposed to be supplemented by Biweekly and Monthly Summary Reports.

Monthly Summary Reports

Monthly Summary Reports will be completed to provide a comprehensive evaluation of the program-to-date results. These comprehensive reports *will be completed within three weeks of the close of the calendar month* and will compile and present a summary of the previously discussed metrics. These reports will also provide an interpretation of the trend analysis metrics and air monitoring results with respect to site activities, and the corrective measures deployed, if any were necessary.

Biweekly Summary Reports

Biweekly Summary Reports will be submitted that will provide routine program updates. The biweekly summaries are designed to provide on-site personnel with timely information necessary to manage the level of site activities in order to be protective of the community. These will be prepared and delivered to site personnel and the NJDEP/Weston and the Site Administrator for operational use. These *biweekly summaries will be prepared and delivered every other week, following the data upload to NJDEP/Weston (approximately 10 days after end of 2 week period)*. These summaries will include daily real-time air monitoring results for the fenceline and the exclusion zone perimeter, and updated program-to-date average Cr6 and PM10 concentrations; and daily/weekly site maps.

Weekly Data Summary Reports

Weekly Data Summary Reports will continue to be submitted to provide timely, routine program updates of daily real time fenceline and exclusion zone perimeter air monitoring results, updated program to date average integrated Cr6 and PM10 concentrations, and site activity maps. These *weekly summaries of the data will be prepared and delivered after weekly data are downloaded and tabulated (approximately 3 days after prior week end)*.

PPG Air Monitoring Plan for the Garfield Avenue Group

Other Operational Modifications

In addition to the preceding air monitoring and dust control approach modifications, two additional procedural changes will be implemented:

- Use of PM10 inlet on Cr6 samplers and Standard Lab Turnaround Times
- Use of a 1-Minute Alert Level at perimeter fenceline air monitoring stations

Hexavalent Chromium Integrated Sampling using PM10 Impactors and Lab Turnaround Times:

PPG will modify the air sampling protocol by replacing all existing Cr6 TSP integrated samplers with particle size-selective MiniVol samplers for Cr6 integrated sample collection, to more accurately represent the respirable fraction. For the Cr6 PM10 integrated sample collections, the MiniVol configurations will be modified/configured to draw air through a 10 micron particle size separator (impactor) and then through the standard 47 mm filter. The exposed Cr6 filter will be shipped to an analytical laboratory to analyze for Cr6 using OSHA Method 215 (refer to the Hex Chrome lab procedure in Attachment A of the approved Air Monitoring Plan).

The integrated Cr6 and PM10 samples will be analyzed by the laboratories under a standard (5-day) turn-around-time.

1-Minute PM10 Alert Level

PPG will continue to use the real-time PM10 Alert and Action Limits (250 ug/m³ and 333 ug/m³, respectively) for comparison to the 5-minute average (exclusion zone perimeter) and 15-minute average (fenceline) real-time PM10 air monitoring data being collected from the various AMS locations. While the fenceline 15-minute average AMS data collections will be compared to the current Alert and Action Limits, in addition, PPG has already implemented the use of a new **1-Minute Alert Level** of 100 ug/m³ at each of the 8 fenceline AMS locations. The addition of this new early warning **1-Minute Alert Level** at the fenceline AMS locations provides site operational staff with a quicker notification of elevated particulate matter levels (versus even the current 5-minute (250 ug/m³) Early Warning from an exclusion zone perimeter AMS). This quicker notification provides added time for corrective actions to be implemented, if necessary, prior to a 5- or 15-minute continuous particulate level reaching the Alert and/or Action limits (250 ug/m³ or 333 ug/m³, respectively) at any of the 12 AMS locations (8 fenceline and 4 exclusion zone perimeter). Once a **1-Minute Alert Level** warning from any of the perimeter AMS locations has been received by the on-site air monitoring staff, the appropriate on-site engineering and remedial staff will be notified of the elevated dust concentration. On-site staff will evaluate the warning and implement immediate corrective and dust

PPG Air Monitoring Plan for the Garfield Avenue Group

controlling actions, as warranted, with the overall goal of correcting the dust generation issues prior to a 5- or 15-minute real-time PM10 average exceeding the Alert Level and/or Action Level. The reporting of these 1-minute alarms by the air monitoring technicians to the appropriate on-site staff will be continued until such time that the 1-minute alarm ceases.

If a 1-minute data average from any of the 8 fenceline PM10 AMS exceeds the new **1-Minute Alert Level** of 100 $\mu\text{g}/\text{m}^3$ during normal working hours, an automatic alarm will be triggered and the following procedure will be followed by the Air Monitoring site technicians:

- The air monitoring technician will confirm the sampler is operating correctly and within calibration specifications.
- The air monitoring Project Manager (or delegated staff) plus the on-site Dust Manager, along with the Engineering and Construction Site Managers, will be notified and will be continually updated until the exceedance ceases.
- The air monitoring technician will make an assessment, using on-site observations and wind data, as to whether the alert exceedance is due to on-site or off-site activities, or meteorological conditions. The Engineering Site Manager will also be advised.
- If warranted, particulate (dust) control measures will be undertaken by the Construction/Remediation contractor immediately upon notification.
- If the 15-minute average data from any of the 8 fenceline PM10 monitors exceeds the **Action Level** of 333 $\mu\text{g}/\text{m}^3$ for two consecutive 15-minute periods, site intrusive activities will be stopped and site activities further evaluated so as to mitigate the particulate exposures at the fenceline AM locations. Remedial activities will not resume until all 8 perimeter AM locations have reported at least one 15-minute concentration below the Action Level.

Summary of Air Monitoring and Dust Control Approach:

- The dust control measures that have been implemented at the site coupled with those that have been proposed above provide for a comprehensive strategy that is protective of the community, and ensures that emissions of hexavalent chromium are maintained below the AAC and minimized to the greatest extent practical.
- The real-time dust monitoring program and strong focus on rolling average metrics of integrated hexavalent chromium concentrations provide for ongoing and regular data evaluation that will, if necessary, be used to trigger any needed corrective actions. The metrics and response actions that are proposed represent a tool to be used to continually evaluate integrated Cr6 concentrations and direct

PPG Air Monitoring Plan for the Garfield Avenue Group

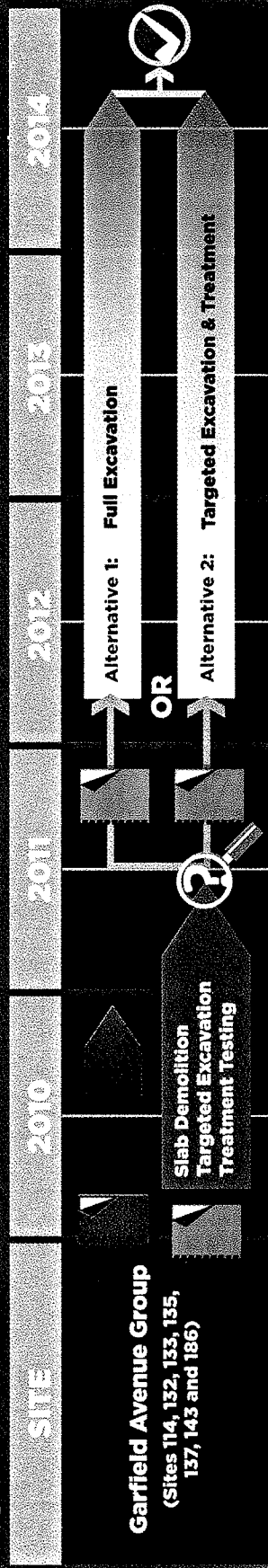
any needed modifications to site activities to remain below the AAC on a project-to-date basis.

- This overall approach is designed to facilitate compliance with the AAC of 49 ng/m³ as the compliance point against which the project-to-date time weighted average integrated hexavalent chromium concentrations will be measured.

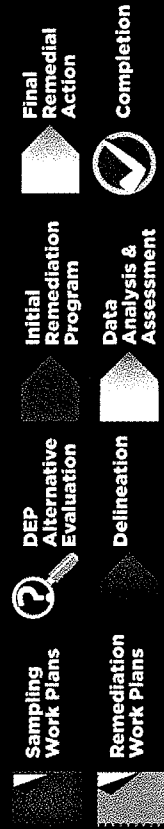
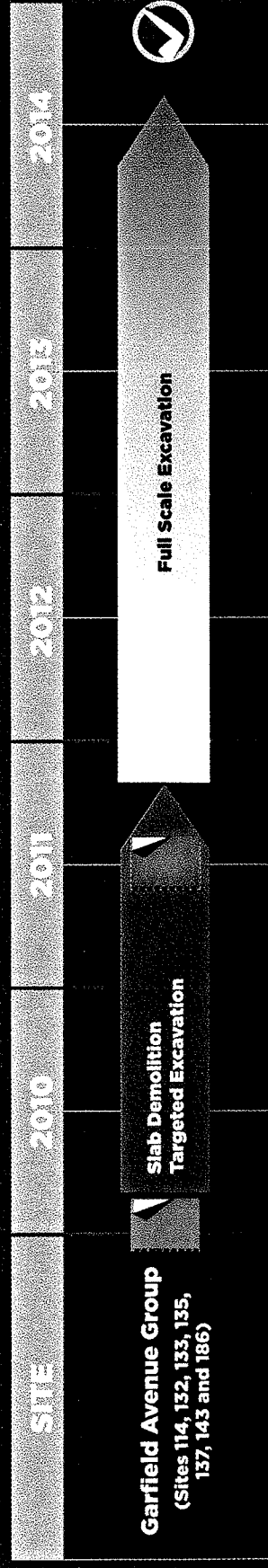
EXHIBIT C

Revised Schedule for Garfield Avenue Group

Original Schedule



Revised Schedule



Updated November 2010:

Chromium Cleanup
Partnership