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SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT REMEDIAL ACTION SELECTION REPORT AND INTERIM REMEDIAL MEASURES WORK PLAN FOR SELECT ON-SITE SOILS AT SUN CHEMICAL CORPORATION 441 TOMPKINS AVENUE STATEN ISLAND, NEW YORK

Submitted for

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Prepared by

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Plate 2: Proposed IRM Work Plan, Soil Staging Areas and Post-Excavation Soil

Sampling Locations

APPENDICES

Appendix A: December 2007 Site Characterization and Remedial Investigation Report

Appendix B: Summary Soil Data Tables and Laboratory Deliverables

Appendix C: Soil Boring Logs

ATTACHMENT

Attachment A: NYSDEC Soil Cleanup Objectives - Table 375-6.8(b), Restricted Use Soil

Cleanup Objectives, as published in NYCRR Subpart 375-6 (of the

Environmental Conservation Law).

I. INTRODUCTION

A. Purpose and Scope

ENVIRON International Corporation (ENVIRON) prepared this Supplemental Remedial Investigation Report (SRIR), Remedial Action Selection Report (RASR) and Interim Remedial Measures (IRM) Work Plan regarding the Sun Chemical Corporation ("Sun Chemical") property located at 441 Tompkins Avenue in Staten Island, New York (the "Site"). The Site is located in the Rosebank neighborhood in the northeastern portion of Staten Island, as shown on Figure 1. The SRIR discusses the recent on-site soil sampling program as well as prior soil sampling programs completed in August-October 2006. The primary goal of these sampling activities was to identify constituents of concern in soil at the Site, and delineate the extent of constituent concentrations above the Commercial Use Soil Cleanup Objectives (SCOs) under the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP).

The RASR describes the screening of applicable remedial technologies to address soil contamination in certain areas of the Site based on the remedial action objectives, regulatory requirements and other considerations. The IRM Work Plan (and accompanying Soil Management Plan [SMP]) describes the scope of planned soil remediation activities to be completed to address any contaminated soils encountered during upcoming facility demolition. Other soil remediation, beyond the areas to be disturbed during demolition, will be completed as part of subsequent remedial activities, likely pursuant to a Remedial Action Plan reviewed and approved by the NYSDEC under the BCP. Those remedial actions are not discussed herein.

B. Report Organization

The SRIR, RASR and IRM Work Plan presented herein were completed in overall accordance with NYSDEC guidance, particularly the Division of Environmental Remediation (DER) December 2002 Draft *Technical Guidance for Site Investigation and Remediation* (known as DER-10). Section II of this report presents the SRIR that discusses the scope and analytical results of sampling recently completed at the Site in support of the planned demolition activities. The screening of potential remedial technologies and discussion of the selected remedy are provided in the RASR included as Section III. Details regarding the proposed IRM are provided in Section IV, including the SMP to be followed during all soil excavation activities related to the demolition.

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II. SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT

A. Overview of Prior Sampling and Basis for Sub-Slab Sampling Program

As discussed in detail in the December 2007 Site Characterization and Remedial Investigation Report (the "2007 RIR"), included herein as Appendix A, Sun Chemical and ENVIRON completed a detailed records search, including interviews with current and former Sun Chemical employees, to develop a history of manufacturing operations and locations of the handling, storage and potential release of hazardous substances, as needed to identify potentially contaminated areas of concern (AOCs) at the Site. ENVIRON conducted site characterization and remedial investigation activities in those 17 AOCs in August through October 2006, collecting approximately 120 soil samples that were analyzed for Priority Pollutant metals (PPMs) and barium, with select soil samples also analyzed for polychlorinated biphenyls (PCBs), Target Compound List (TCL) semi-volatile organic compounds (SVOCs) and/or TCL volatile organic compounds (VOCs). Details regarding the detailed research into site operations, and the analytical results of the sampling programs, are provided in the 2007 RIR.

As discussed in the 2007 RIR, the 17 AOCs evaluated were predominantly associated with exterior features, including historical industrial features (e.g., former aboveground storage tanks) and pre-industrial operations (e.g., a shooting gallery). In light of the nature and location of these AOCs, samples within existing building were generally not completed, except for those in AOC 16, the underground piping associated with the facility wastewater system that was active until February 2008 when Sun Chemical ceased manufacturing operations at the Site.

In June 2008, Sun Chemical initiated demolition of the Site structures as part of its cessation of operations and planned sale of the property. Those demolition plans entailed, in summary, the removal of all above-grade buildings and industrial features, which was completed on September 2, 2008, with subsequent removal of all building slabs, foundation members and retaining walls. The main building complex was constructed on a relatively steep, generally eastward-sloping hill, such that there is a level of production and storage spaces that is topographically lower than the main production floor of the Blue and Red Wings. These areas, primarily the Grind & Mix Department, the northern section of the Red Wing and the basement, are located north and east of a load-bearing interior retaining wall shown on Plate 1. The main production floor and other spaces extends over these areas.

Following completion of the on-grade and sub-grade demolition activities, the disturbed areas of the site will be regraded for stability and storm water control. Paved areas outside the building footprints will not be disturbed; instead, concrete and asphalt pavement removal, and

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associated remediation of underlying soils, would likely be addressed as part of future site redevelopment and subsequent remedial activities.

Given that the demolition activities will expose and disturb soils beneath the current buildings, Sun Chemical completed further sampling to identify any environmental impacts in those soils, with such soils requiring remediation/off-site disposal prior to the planned regrading. The remainder of this section describes the scope of and methodologies for this recent sampling program and conclusions that can be reached regarding the extent of soil contamination that will require management as part of the demolition program.

B. Supplemental Remedial Investigation

1. Scope of Analytical Program

Comparison of soil sampling data obtained at the Site in 2006 to the SCOs (listed by constituent category in Attachment A) indicated that certain metals were identified at concentrations above those commercial-use SCOs, including in AOC 16 beneath the Red Wing. Organic constituents were not identified above those objectives in AOC 16 but were reported at three exterior AOCs, where PCBs and/or SVOCs.

Based on those data, it appeared that metals are the primary site contaminants such that analyses for organic constituents were not initially considered necessary as part of any predemolition sub-slab soil sampling. However, during a December 5, 2007 pre-application meeting, NYSDEC indicated that it would require representative analyses for all NYSDECregulated constituents in order for the Department to ultimately issue a Certificate of Completion for remedial activities at the Site. In light of the above, all soil samples collected during the June 2008 SRI were analyzed for PPMs+Ba, with analyses for the full list of NYSDEC-regulated constituents completed on a subset (approximately 10) of the samples. The specific additional analyses included VOCs, SVOCs, pesticides, PCBs, cyanide and manganese. ENVIRON and Sun Chemical discussed the scope of this planned sub-slab sampling with Mr. James Quinn of NYSDEC on June 2, 2008. Mr. Quinn indicated at that time that although the Department could not complete a detailed review of the proposed activities, based on the planned scope of the sub-slab sampling, collection of ten samples for this expanded constituent list appeared reasonable. Mr. Quinn also suggested that the samples targeted for the expanded constituent list include multiple depth intervals and locations under each building being evaluated. As discussed below, ENVIRON targeted samples for the expanded analyte list as recommended by NYSDEC.

2. Sampling Methodologies

TPI Environmental, Inc. of New Hope, Pennsylvania completed direct-push soil borings for the sub-slab sampling under the supervision of an ENVIRON geologist. All downhole

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drilling and sampling equipment, including direct-push rods, was decontaminated between uses with an Alconox solution followed by a tap water rinse.

Samples collected during this sampling program were placed directly into laboratory-provided glassware and stored on ice in a cooler under appropriate chain-of-custody protocol. Samples were delivered daily to and analyzed by TestAmerica, Inc. of Edison, New Jersey, a New York-certified laboratory, for all of the required analyses. Summarized soil data, and actual sampling depths, are provided in tables included as Appendix B. Electronic versions of TestAmerica laboratory reports are also provided in PDF format on CD-ROM in Appendix B for the following job numbers:

- Job V792, dated August 19, 2008;
- Job V896, dated July 31, 2008;
- Job V897, dated July 28, 2008; and
- Job X405, dated August 28, 2008.

3. Scope and Findings of Sub-Slab Soil Sampling Program

As shown on Plate 1, soil samples were collected from a total of 29 locations, including 26 borings in the main building complex (SB-1 through SB-22, SB-14A, and SB-26 through SB-28), two borings in the Maintenance and Carpentry Shop (SB-23 and SB-24) and one boring in the Storage Building (SB-25). The 26 borings in the main building complex were completed in all four primary building areas, including nine borings in the Red Wing (SB-1 through SB-6 and SB-26 through SB-28), ten borings in the Blue Wing (SB-7 through SB-15, and SB-14A), three borings in the Grind and Mix Department (SB-16 through SB-18) and four borings in the basement (SB-19 through SB-22). Sub-slab sampling was not, however, completed in the Boiler Building/Power House or the Warehouse primarily because liquid industrial materials were not extensively handled in those buildings and there had been no discharges of industrial wastewater to sewers under those slabs. Last, pre-industrial activities at the property do not appear to have involved these portions of the Site.

Each boring was advanced to a depth of at least 8 feet. Continuous soil cores were collected from each location and inspected for evidence of potential soil contamination, including visible staining, obvious odors and elevated responses on a photo-ionization detector (PID). Based on the evidence suggesting that impacted soils may have been present, boring SB-27 was advanced to 12 feet. In addition, boring SB-21 was advanced to 12 feet to provide a more complete evaluation of site geology. Boring logs for the SRI are included as Appendix C.

At each soil sampling location, a soil sample was collected from the six- to 12-inch interval beneath the concrete floor/building slab and underlying crushed stone sub-base. Samples were also obtained from deeper intervals, typically from 2.0-2.5 feet and 4.0-4.5

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feet, unless there was evidence of impact, where deeper intervals were targeted for sampling based on soil conditions specific to that location. At locations where no evidence of contamination was observed, the upper soil sample was analyzed for PPMs+Ba, and the deeper samples held pending receipt of the initial data. The deeper soil samples were analyzed for PPMs+Ba only if any metals were detected in the upper sample above SCOs.

Additionally, where evidence of potential contamination was observed, select samples were analyzed for the expanded parameter list (i.e., TAL metals, TCL SVOCs+25, TCL VOCs+15, pesticides, PCBs and cyanide). Unlike the approach discussed above for the metals analyses, samples for the full parameter list were not analyzed in a staged manner to provide a more complete assessment of soil quality at these locations, as well as given the shorter holding times for organic analytes.

Conditions suggestive of potential contamination were evident in two areas, including a section of the Blue Wing and in a secondary production area of the Red Wing. In the Blue Wing, red, blue and/or green soil staining was observed at borings SB-10 through SB13 and SB-14A. This staining was most pronounced in the more shallow intervals, diminished in degree with depth, and was no longer evident at depths ranging from 5 feet at SB-11 and SB-12 to 8 feet at SB-13 and SB-14A. These stained soils exhibited no strong odors (other than a paint-like odor in shallow green-stained soils at SB-14A), elevated PID readings or other evidence of contamination. ENVIRON proceeded with analyses for the full parameter list on the three soil samples obtained from borings SB-10 and SB-13, where the most staining was observed. These analyses targeted both the stained intervals and an underlying horizon where the staining was absent. In addition, the upper soil sample from SB-14A was analyzed for the full parameter list given the odors observed at that boring, and the presence of green staining that had not been observed at other locations in the Blue Wing.

The other potentially impacted location was observed in the northern section of the Red Wing where elevated PID readings were recorded at boring SB-27 to a maximum level of 87 ppm at 7.5-8.0 feet and at SB-28 to a maximum level of 53 ppm at 0.5-1.0 feet. At these locations, PID readings were generally non-detect in intervals only slightly deeper than those in which the maximum PID readings had been recorded. In light of these observations, ENVIRON proceeded with analyses for the full parameter list on both soil samples collected from SB-27 (i.e., from 0.5-1.0' and 7.5-8.0') as well as on the interval at SB-28 (0.5-1.0') where the highest PID readings were noted.

Last, three additional samples were analyzed for the expanded parameter list. These samples included those from the upper sampling intervals at borings SB-2, SB-17 and SB-20. Although no evidence of soil contamination was observed at these borings, the broader analyses were conducted to provide a more site-wide understanding of soil quality, as recommended by NYSDEC.

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Analytical results are summarized below; data for metals, the primary site contaminants, are presented separately below following a summary of the findings for all other target analytes. Where appropriate, analytical results are also presented for sampling locations 1604 through 1607, the four sub-slab sampling points completed in the Red Wing in October 2006.

a. Organic Constituents

Analytical results from the SRI indicated that VOCs, SVOCs, PCBs, pesticides, and cyanide were either not detected or where present, were identified at concentrations well below the commercial use SCOs, except for a single detection of hexachlorobenzene in the upper sampling interval at boring SB-10, likely associated with the limited former production of a specific green pigment (i.e., Pigment Green 7, phthalocyanine green pigment) in the Blue Wing. In addition, tentatively identified compounds (TICs) were not reported for the VOC and SVOC analyses, with only several exceptions at negligible concentrations. Sun Chemical and ENVIRON believe that these data demonstrate that with the possible exception of certain Blue Wing soils, organic constituents are not of concern for sub-slab soils that will be encountered during planned demolition activities such that no additional analyses for these parameters are warranted. However, as discussed below in Section IV, soils identified during demolition activities will be screened for evidence of contamination, with potentially impacted soils, other than those locations already sampled, evaluated through additional sampling. That sampling may include, based on the nature of field observations. analyses for organic constituents.

b. Metals

Analytical results from this sampling program indicate that, in general, metals were not detected above SCOs. In fact, there were only scattered exceedances reported at eight of the recent borings, including SB-10 through SB-13, SB-16, SB-17, SB-25 and SB-28, due to concentrations of six metals, including arsenic, barium, chromium, copper, lead and nickel. In addition, four metals (barium, cadmium, nickel and lead) were detected above SCOs at borings 1604, 1605 and 1607 completed in October 2006 in the Red Wing.

As indicated on Plate 1, barium and lead were detected most often above the SCOs, identified in ten and seven samples, respectively, above the SCOs. In addition, barium and lead exceedances co-occurred in four sampling intervals. The other five metals were detected above the SCOs in only one to three samples each. The copper and chromium exceedances coincided with barium and/or lead exceedances, whereas

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arsenic, cadmium and nickel concentrations above the SCOs were most often isolated, with no other metal impacts identified.

Based on these analytical results, the following conclusions can be reached regarding metals contamination with respect to the scope and nature of planned IRM activities:

- Metals contamination is present in discolored soil in the upper sampling intervals at contiguous locations SB-10 through SB-13. This discoloration likely results from former pigment manufacturing activities, although the specific source of the staining is not known at this time. However, given its proximity to an underground sewer line, this contamination may have resulted from leakage from the industrial sewer system. The layout of known industrial sewer system components at the Site is provided on Plate 1. Concentrations of metals were below SCOs in the deepest sampling intervals analyzed at SB-10, SB-12 and SB-13, in which staining was not observed. Conversely, the barium concentration exceeded the SCO in the deepest sample from SB-11, where soil discoloration was apparent. These data therefore suggest that in the vicinity of these locations, the presence of this significant soil discoloration can be used as an indicator of metals contamination for purposes of soil removal.
- Stained soils at boring SB-14A also may result from former industrial wastewater discharges given that this boring was completed proximate to an underground 8-inch PVC sewer line. Although metals contamination was not detected in green-stained soils at SB-14A, given that not all significantly stained intervals at this boring were characterized, the other data from soils beneath the Blue Wing suggest that soils at SB-14A with significant pigment staining should be presumed to be metals-impacted absent data to the contrary.
- Barium impacts were detected in surface soils at borings SB-16 and SB-17 in the Grind & Mix Department. The absence of barium impacts in the deeper sampling interval from 2.0-2.5' at these locations, and the marked decline in barium levels with depth, indicates that barium contamination at these locations is limited to surface and near-surface soils. This distribution of contamination suggests that the barium contamination likely results from surficial activities, such as potential leakage through the concrete flooring, rather than discharges from the former industrial sewer system.

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- Arsenic contamination was identified in the three sampling intervals at boring SB-25 at the Storage Building. A lead concentration of 1,750 ppm, above the SCO, was also detected in the upper sampling interval. This boring is the only location at which arsenic impacts were identified during the most recent sampling round. However, elevated near-surface arsenic concentrations above the SCO (ranging from 30.8 to 559 ppm) were previously identified at borings 301, 302, 401 and 402 completed in 2006 directly north and northwest of SB-25. Arsenic concentrations above the SCO were also detected at other, scattered locations sampled in 2006. The source of elevated arsenic concentrations at and near SB-25, as well as at other locations at the Site, is not known at this time. However, the general absence of other metals contamination coincident with arsenic impacts (other than one elevated barium concentration and four elevated lead concentrations), and the lack of any soil discoloration at SB-25, suggests that the arsenic results from activities distinct from pigment production operations previously occurring in other portions of the Site.
- Nickel contamination was detected at SB-28 and 1604, the only locations
 where such contamination was identified. The isolated occurrence of those
 concentrations, and the relatively similar levels with depth, suggest that the
 nickel concentrations are likely not associated with surficial industrial
 operations.

III. REMEDIAL ACTION SELECTION REPORT

A. Scope and Purpose

The NYSDEC's DER-10 guidance, at Section 4, requires that a party conducting a voluntary remedial action (such as under the BCP) complete a remedy selection evaluation to identify the most appropriate approach to accomplish the planned remedial activities and be protective of human health and the environment. DER-10 also requires that a RASR be prepared to document the scope and results of the evaluation.

Accordingly, this RASR was prepared in general accordance with DER-10 to identify and briefly evaluate certain remedial technologies that are potentially applicable for addressing the on-site soil contamination in light of the identified contaminants, the current Site setting/conditions and the future redevelopment intentions. The remedial action selection process includes the following primary components:

- establishment of the Remedial Action Objectives (RAOs) for the Site, including (1)
 environmental media of concern, (2) site-specific contaminants; and (3) applicable
 remediation criteria based on current property zoning, future land use and regulatory
 requirements.
- evaluation of each potentially applicable remedial technology with regard to seven criteria specified in DER-10, including its (1) protectiveness; (2) compliance with applicable laws and guidance; (3) long-term effectiveness; (4) reduction of toxicity, mobility and volume; (5) short-term effectiveness; (6) implementability; and (7) cost. Although not required for a voluntary remedial action, ENVIRON also considered local community acceptance given that the Site is located in a partially residential setting and Sun Chemical has already been engaged in communication with local residents and other interested parties regarding the planned demolition and associated remedial activities.
- identification of the preferred remedial approaches that best meet the RAOs.

Other components that should be included in a RASR per DER-10 Section 4.3(d), including a description of the site, the site history and a summary of the remedial investigations, are presented in prior sections of this report and in the December 2007 Site Characterization and Remedial Investigation Report included in Appendix A.

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The remainder of this section discusses: (1) the remedial action objectives for the Site and the applicable remediation criteria; (2) the affected media and the extent of those impacts; (3) a screening of potentially applicable remedial technologies for addressing the targeted soil contamination; and (4) selection of a preferred remedial alternative.

B. Remedial Action Objectives

1. Affected Media

Based on the sampling completed to date at the Site, as described in Section II herein, environmental media of concern include on-site unsaturated-zone soils. The extent of soil impacted by the each suite of constituents is reviewed below.

2. Site-Specific Contaminants of Concern and Applicable Soil Remediation Criteria

Sampling results reveal that soils are affected by concentrations of seven metals, including arsenic, barium, cadmium, chromium, copper, lead and nickel. ENVIRON compared the soil data to NYSDEC's SCOs for commercial use. Plate 1 provides the sampling locations and intervals at the Site where these metals were identified present in soil at concentrations above the SCOs. Other metals and organic constituents, including PCBs, pesticides, SVOCs, VOCs and cyanide, were not detected at concentrations above SCOs.

As discussed in the SRIR in Section II to this document, certain metal concentrations above the SCOs were co-located whereas others generally occurred in an isolated manner. The extent of impacts for each of these metals is summarized below.

(a) Arsenic, with Coincident Lead Impacts

Arsenic concentrations above the SCO (with one coincident lead exceedance) were detected only at boring SB-25, to the maximum sampling depth of 4.5'. For purposes of the IRM, it assumed that the arsenic concentrations extend over an area of 25' by 30', to a depth of 5 feet. These arsenic and lead impacts are therefore estimated to affect approximately 140 cubic yards or 210 tons of soil.

(b) Barium, with Coincident Chromium, Copper and Lead Impacts

Barium concentrations above the SCOs were identified at three locations at the Site, including (with coinciding contamination of other metals): (1) borings SB-10, SB-11, SB-12 and SB-13, with coinciding chromium, copper and lead impacts (and also including the single exceedance for hexachlorobenzene), and adjoining pigment-stained soils at SB-14A, over an area of approximately 4,000 square feet to 8' in depth; (2) SB-16 and SB-17 over an area of 15' by 60' to a depth of 2'; and (3) boring 1607 over an area of 20' by 30' to a depth of 5'. Barium impacts (plus other coinciding metals

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contamination and pigment staining) are estimated to affect a total of approximately 1,383 cubic yards or 2,075 tons of soil.

(c) Cadmium

Cadmium concentrations above the SCO were detected only at boring 1605 to the maximum sampling depth of 4.0'. For purposes of the IRM, it assumed that the cadmium concentrations extend over an area of 20' by 20', to a depth of 5 feet. Cadmium impacts are estimated to affect approximately 73 cubic yards or 110 tons of soil.

(d) Nickel

Nickel concentrations above the SCO were detected only at borings 1604 and SB-28 to the maximum sampling depth of 2.5'. For purposes of the IRM, it assumed that the cadmium concentrations extend over an area of 20' by 40' at boring 1604 and 25' by 25' at boring SB-28, each area to a depth of 3.5 feet. Nickel impacts are estimated to affect a total of approximately 158 cubic yards or 237 tons of soil.

3. Selection of Remedy Based on Future Site Use

The portion of the property on which below-grade demolition activities will be conducted is currently zoned M3-1 (Manufacturing). According to the New York City Planning Commission, M3 zoning, also defined as Use Group 18, consists of heavier manufacturing activities, although these areas might also include commercial and other non-manufacturing activities. Despite flexibility in site use suggested by this zoning designation, M3 zoning does not permit residential land use. In addition, Sun Chemical has been advised by the Department of City Planning - Staten Island Office that rezoning to enable residential property use would not be readily achievable.

Sun Chemical is currently marketing the property to potential developers. Although the specific future property use will ultimately be determined based on the outcome of those marketing efforts, in part due to issues related to site zoning, Sun Chemical intends to sell the property for redevelopment for commercial purposes, not for residential (or industrial) uses. As such, it was not considered necessary to evaluate more stringent remedial alternatives consistent with potential residential end uses.

C. Description and Screening of Remedial Options

Given the nature of the soil contamination (i.e., metals), there are only two remedial approaches/remedial technologies that could reasonably be used to achieve RAOs, including: (1) containment in place (with a Deed Restriction and engineering controls); and (2) removal (excavation and off-site disposal). A brief description of these options is provided below. Although there are *in situ* remedial technologies that have some applicability to metals-

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contaminated soils, those were considered cost-prohibitive and not be feasible given the need, as part of the planned demolition and regrading activities, to disturb contaminated soil. As such, those alternatives were not evaluated for the IRM.

Containment in Place

Containment in place is a feasible remedy provided that institutional controls (i.e., a Deed Restriction) and engineering controls would be acceptable remedial components under the BCP. As the NYSDEC is aware, the regulations of the BCP (Subpart 375-3.8) indicate that a permanent remedy is preferred over one that does not affect a permanent cleanup of a site. In addition, these regulations include a multi-track remedial approach for sites being addressed under the BCP. For the Sun Chemical site, where remediation would be completed to commercial-use SCOs (rather than unrestricted-use or restricted-residential SCOs), the remediation would be completed pursuant to Track 4. Although long-term institutional and engineering controls are allowed under a Track 4 remedial program, active soil remediation would be, at a minimum, required to address the upper one foot of exposed soil. Additional soil remediation would also be required at the Site to address soil from deeper intervals that would be disturbed to enable (1) the removal of foundation members. retaining walls and other sub-grade features encountered during the planned demolition activities; and (2) the regrading of the site to control storm water runoff and soil erosion. In light of the planned demolition and related soil disturbance, as well as the scope of potential future site redevelopment, a containment-in-place remedy does not appear to meet the remedial action criteria of protectiveness, long-term effectiveness, and the reduction of toxicity, mobility and volume. Additionally, a containment-in-place remedy would likely not receive the same level of community support as would a permanent remedy that would entail a broader level of site remediation. A containment-in-place remedy is therefore not considered practicable for the Site.

Excavation

Excavation consists of removal of impacted soils and subsequent on-site treatment and/or off-site disposal. This remedy would be appropriate for all contaminants detected at the site and would more fully achieve the RAOs and meet the seven criteria for remedial action evaluation. Under this alternative, off-site disposal of excavated soils would be appropriate given that although there are on-site treatment alternatives for certain metals-contaminated media, none would be applicable or cost-effective for the Site given the nature, distribution and volume of contaminated soil. Excavation with off-site disposal would result in higher overall costs in the short term but would achieve a permanent remedy, the preferred remedial approach specified in Subpart 375-1.8. In addition, the broader level of soil

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remediation that would be accomplished under an excavation alternative would likely be greeted with a fuller level of community endorsement.

Given the above, excavation with off-site disposal is selected as the preferred remedial technology for addressing all soil contamination at the Site as part of the IRM.

IV. INTERIM REMEDIAL MEASURES WORK PLAN

A. Introduction

ENVIRON and Sun Chemical have developed this IRM Work Plan to address known and potential soil conditions that will be encountered during the below-grade demolition activities scheduled to begin in late September 2008. The remainder of this section discusses the IRM program in detail, including post-remedial sampling procedures and site restoration plans. This section also includes an SMP to be followed during the soil work to manage known and potentially contaminated soils and associated accumulated storm water.

B. Interim Remedial Measures

1. Soil Cleanup Goals and Remedial Action Objectives

Soil remediation completed pursuant to this IRM Work Plan will address soils with constituent concentrations above the commercial-use SCOs, the soil cleanup goals (SCGs) selected for this program. These SCGs, provided by constituent category in Attachment A, are appropriate given the future commercial redevelopment of the Site and the current zoning of those portions of the property where the IRM will be conducted.

The primary RAO for the IRM will be to prevent direct future contact with contaminated soil during site redevelopment. In addition, the IRM will prevent off-site migration (such as via storm water runoff) of any contaminated surface soils that will be exposed as part of the demolition activities. The RAOs will be achieved through excavation/removal and off-site disposal of soils with contaminant levels exceeding the SCGs.

The remedial program will also address any other soils that cannot be reused on-site per NYSDEC regulations and other considerations. For example, soils with significant pigment staining will be disposed of off-site as contaminated media, regardless of actual chemical signature, given that: (1) available data obtained at the Site suggests that the presence of staining may indicate coincident soil contamination, and (2) these soils likely meet the NYSDEC definition of soils with nuisance characteristics. For purposes of this IRM, "significant pigment staining" will be considered to indicate soils with pervasive discoloration that appears to derive from surficial industrial operations and/or releases from the industrial sewer system or other below-grade industrial features. Conversely, soils with sporadic incidence of discoloration, which cannot be readily attributed to former pigment

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production activities, will not be considered to exhibit significant pigment staining and thus, would not require remediation.

2. Overall Remedial Approach

Based on the nature of contamination and Sun Chemical's intent to proceed with site remediation under the BCP, as needed to secure a Certificate of Completion for those efforts, Sun Chemical will proceed with the IRM with the following overall components:

- site preparation and re-surveying of prior soil sampling points;
- permitting;
- excavation and segregation of unsaturated-zone soils determined through prior soil sampling to contain metal concentrations exceeding NYSDEC's commercial-use SCOs, and other impacts;
- excavation and segregation of other unsaturated-zone soil that, based on visual and other observations during demolition activities, exhibits indications of potential contamination;
- sampling of such additional soils, as needed to determine the nature of any contamination that could require off-site disposal;
- post-remedial soil sampling, and completion of additional soil remediation if needed based on the analytical results of those samples;
- waste characterization sampling of excavated soils, as needed for profiling of the waste at potential off-site disposal facilities;
- off-site disposal of contaminated soil, and any wastewater; and
- site regrading and restoration.

The scope of each of these interim remedial action components is discussed below.

3. Site Preparation

Analytical results of prior soil sampling have identified a total of ten sampling points beneath the main building complex and one location beneath the former storage building where concentrations of certain metals exceed the SCOs. In preparation for facility demolition, these sampling locations were surveyed on July 12, 2008 by Control Point Associates, Inc. (CPA) of Somerville, New Jersey. Based on the location of these points, ENVIRON has defined areas, shown on Plate 2, in which soils containing metal concentrations above the SCOs and significant pigment staining are known and assumed to be present. Plate 2 also indicates the assumed maximum depths of that contamination, based on prior sampling results and observations during the June 2008 sampling program. Above-

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grade demolition activities were completed on September 2, 2008; following removal of accumulated demolition debris, these prior soil sampling points will be re-surveyed and the targeted remediation areas marked prior to the onset of slab removal. Given that on-grade and below-grade demolition activities and associated soil remediation are anticipated to proceed in parallel, it would not be practicable to defer the re-surveying until after the slabs have been removed.

4. Permitting

In addition to permits already secured related to the demolition itself, Sun Chemical has identified two additional requirements related to the planned activities (including slab removal and related below-grade structure removal) given that those actions will entail disturbance of more than one acre of total land area. These requirements include: (1) preparation of an Erosion and Sediment Control (E&SC) Plan as required by the USEPA National Pollution Discharge Elimination System Phase 2 storm water requirements; and (2) authorization under a NYSDEC State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-08-001). Coverage under the General Permit for Stormwater Discharges from Construction Activity requires submission of a Notice of Intent (NOI) prior to initiation of the regulated activities. As a prerequisite for submission of the NOI, Sun Chemical will be required to prepare a Storm Water Pollution Prevention Plan (SWPPP), as well as the E&SC Plan. These documents will be prepared prior to commencement of the on-grade and below-grade demolition activities. According to NYSDEC, coverage under the General Permit will be provided within five days of submission of the NOI.

5. Soil Remediation in Areas of Known Contamination

Soil sampling completed to date has defined eight primary sub-slab locations with metals contamination above SCOs and/or significant pigment staining. These soils will therefore require remediation as part of demolition activities. All soil excavation activities will be overseen by an ENVIRON geologist. Excavated soils will be managed in accordance with the SMP presented below. That plan specifies the procedures for soil staging and segregation, as needed for proper waste characterization sampling and off-site disposal.

The estimated extent of contamination in each of these areas is depicted on Plate 2. The boundaries of each of these areas were determined based on the analytical results and the observations of significant pigment staining, as well as by the locations of building structural components and former operational activities. For example, the northern, southern and western boundaries of the impacted area in the Blue Wing (at borings SB-10 through SB-14A) were defined based on the absence of soil contamination and significant

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pigment staining at neighboring borings SB-7, SB-8, SB-9, SB-14 and SB-15. The eastern boundary of this remediation area was defined by the position of a retaining wall that forms the western side of the Grind & Mix Department, located one floor level below the Blue Wing (as noted above, the main building was constructed in several levels on a hill).

As noted above, the industrial sewer system is a suspected source of metals contamination and pigment staining in soils encountered beneath the Blue Wing. Sun Chemical flushed the facility industrial sewer system with high-pressure water prior to onset of demolition activities such that no industrial materials remain in those features. Although industrial sewer system components will be removed as needed to address the impacted soils, removal of sewer components outside of the soil remediation areas is not considered necessary and is therefore beyond the scope of the IRM. As such, Sun Chemical and ENVIRON may determine, based on observations made during the IRM, that certain sewer line sections to remain on-site may require plugging or capping.

6. Soil Remediation in Areas of Suspected Contamination

In addition to the areas with known metals contamination above SCOs, it is possible that additional adversely impacted soils will be encountered during demolition activities. As with areas of known contamination, the excavation and handling of potentially impacted soils will be overseen by an ENVIRON geologist and will be managed in accordance with the SMP presented below.

These soils will require sampling to determine whether the soil is contaminated above the SCOs such that it requires off-site disposal or alternately, has constituent concentrations below the commercial-use SCOs and is therefore appropriate for beneficial use on-site in accordance with NYSDEC's Beneficial Use Determination (BUD) regulations at Subpart 360-1.15(b). Those regulations include 16 pre-determined BUDs, including one (see Subpart 360-1.15(b)(8)) indicating that contaminated, non-hazardous soil would not be regulated as solid waste (and thus, would be considered a beneficial use) provided that it is used as backfill for an excavation or group of excavation containing similar contaminants at the site. Further, pursuant to Subpart 360-1.15(b)(7), uncontaminated excess soil excavated during a construction project may be reused on-site as fill material.

The NYSDEC Bureau of Solid Waste Reduction and Recycling informed ENVIRON1 that NYSDEC does not have specific requirements for sampling for beneficial use determinations. NYSDEC most recently published recommendations for soil pile sampling in its August 1992 Spill Technology and Remediation Series (STARS) Petroleum-Contaminated Soil Guidance Policy. Although not directly applicable to Site soils (which are not petroleum-impacted), it is worth noting that the guidance indicates that the number

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ENVIRON discussed beneficial reuse of contaminated materials from the Site with Ms. Cathy Prather of the Bureau of Solid Waste Reduction and Recycling on August 1, 2008.

of soil samples should be determined through professional judgment and a consideration of certain factors related to a given soil pile, including the volume of excavated soil, the nature of any contamination, and the apparent distribution of that contamination through the pile. Based on the metals-only nature of soil impacts, ENVIRON will collect one composite soil sample for every 200 cubic yards of potentially contaminated excavated soil. Additional soil sampling may be completed if appropriate based on soil screening observations.

These samples will be analyzed for PPMs+Ba, as well as other parameters if warranted based on the soil screening observations. For example, composite soil samples for TCL VOC analyses may be collected from soils with elevated PID readings and that exhibit petroleum odors. In addition, only discrete soil samples will be collected from soils exhibiting elevated PID readings to ensure representative VOC data. Composite soil samples for VOC analyses will not be collected.

These data will be used to (1) determine whether the soils exhibit metals concentrations above SCOs and therefore, require off-site disposal, or (2) are not impacted above SCOs and therefore may be appropriate for on-site reuse. The NYSDEC Bureau of Solid Waste Reduction and Recycling informed ENVIRON that for facilities enrolled in the BCP, the NYSDEC BCP case manager would approve the reuse of soil pursuant to these BUDs.

7. Wastewater Management and Disposal

Based on the depth of ground water at the Site, the planned remedial activities will not encounter saturated soils. However, it is possible that due to inclement weather during the demolition program, storm water will accumulate in excavations completed to address soils discussed herein, as well as those completed to remove foundations and footings. Accumulated storm water that is in contact with known or potentially contaminated soils will be containerized on-site in a temporary aboveground storage tank (e.g., a Baker tank) prior to sampling to evaluate the presence of constituents above applicable criteria. Based on the constituents of concern in soils at the Site, representative samples of accumulated wastewater will be analyzed for PPMs+Ba. This wastewater will be disposed of off-site, with decisions regarding the ultimate specific disposal location to be made based on the analytical results. Given that Sun Chemical has terminated its Industrial User Permit, which enabled discharge of industrial wastewater to the combined sewer system at the Site, discharge of any excavation or demolition wastewater to the on-site sewer system is no longer feasible.

8. Post-Excavation Soil Sampling

Soil sampling will be completed to document the effectiveness of the IRM in meeting the remedial goals. This sampling will be conducted in accordance with the post-excavation sampling frequencies specified in DER-10. As such, for excavations of 20 to 300 feet in

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perimeter (all of the planned excavations likely will fall within that range), one post-excavation sidewall sample will be obtained per 30 linear feet of sidewall. These samples will be obtained from the interval(s) at which soil contamination requiring remediation was identified. For example, post-excavation sampling proximate to locations SB-16 and SB-17 will be conducted at 0.5-1.0', the only depth interval at which metals contamination was detected. Conversely, post-excavation sampling near locations SB-10 through SB-13, where soil contamination in that area was detected at multiple intervals, will target the uppermost and deepest intervals (i.e., 0.5-1.0' and 4.0-4.5') in which metals were detected above SCOs. The specific post-excavation sampling depths for each planned remediation area are provided on Table 1.

All post-excavation soil samples will be analyzed for PPMs+Ba. The analytical results will be compared to the commercial-use SCOs and if no metals are present above those objectives, the remediation will be considered complete. Conversely, if any metal concentration in a post-excavation sample is present above the SCOs, additional soil excavation and post-excavation sampling will be conducted until the SCOs have been met. The sampling frequencies, depths and analyses will be conducted constituent with the methodologies described above for the initial phase of soil remediation.

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		TABLE 1		
	Proposed Post-Excavation	on Soil Sampling Loca	tion Soil Sampling Locations, Depths and Analyses	S
Remediation Location ¹	Affected Sampling Points and Depths	Remediation Area Dimensions	Estimated Soil Volume ³	Proposed Post-Excavation Sampling Locations and Depths ⁴
Blue Wing – borings SB- 10, SB-11, SB-12 and	SB-10: 1.0-2.0', plus staining to 7.0' SB-11: 0.5'-2.0', 2.0-3.0' and 5.0-5.4'	4,080 square feet to 8.0°	1,200 cubic yard/1,800 tons	Sidewall: 0.5-1.0', 2.0.2.5' and 4.0-4.5'
SB-13 and SB-14A5	SB-12: 0.5-1.0' (plus staining to 6.0') SB-13: 4.0-4.5' (plus staining to 8.0') SB-14A: to 7.0' (staining only)			Basal: 8.0-8.5'
Grind & Mix Department	SB16: 0.5-1.0' SB17: 0.5-1.0'	15' by 62' to 2.0'	73 cubic yards/110 tons	Sidewall: 0.5-1.0' Basal: 1.0'1.5'
Red Wing: Western end main production area – boring 1604	1604: 2.0-2.5	18' by 40' to 3.5'	93 cubic yards/140 tons	Sidewall: 2.0-2.5' and 3.5-4.0' Basal: 4.0.4.5'
Red Wing: Western end main production area – boring 1605	1605: 2.0-2.5' and 3.5-4.0'	18' by 22' to 5.0'	73 cubic yards/110 tons	
Red Wing: Eastern end main production area	1607: 2.0-2.5' and 3.5-4.0'	20' by 30' to 5.0'	110 cubic yards/165 tons	Sidewall: 2.0-2.5' and 3.5-4.0' Basal: 4.0.4.5'
Red Wing: Secondary production area	SB28: 0.5-1.0' and 2.0-2.5'	20' by 25' to 3.5'	65 cubic yards/97 tons	Sidewall: 0.5-1.0' and 2.0-2.5' Basal: 2.5-3.0'
Storage Building	SB25: 0.5-1.0', 2.0-2.5' and 4.0-4.5'	25' by 30' to 5.0'	140 cubic yards/210 tons	Sidewall: 0.5-1.0' and 4.0-4.5' Basal: 4.5-5.0'

*

Notes

- 1. Remediation locations are shown on Plate 2. The extent of these areas has been estimated by analytical results, the occurrence of pigment soil staining, and the layout of structural features and former operational areas, also shown on Plate 2.
- 2. Affected sampling locations and depths have been determined based on analytical results and observations of pigment-related soil staining. Where staining has been used to define presumed excavation depths, it is so noted.
- 3. Soil mass estimates based on a conversion factor of 1.5 tons/cubic yard.
- 4. All post-excavation samples will be analyzed for PPMs+Ba. In addition, the samples from the Blue Wing excavation will also be analyzed for SVOCs given Basal samples will be collected at a rate of one sample per 900 square feet of excavation floor. The basal samples will be biased to specific locations where the detection of hexachlorobenzene at SB-10. Sidewall samples will be collected at an overall rate of one sample per 30 linear feet of excavation sidewall. deeper contamination was detected (e.g., near SB11 and SB13 in the Blue Wing excavation) or to relatively central locations in remediation areas where specific deeper-zone impacts were not reported.
 - Although there is one contiguous area of soil contamination in the Blue Wing, the depth of contamination varies among the four soil borings defining this area. As a conservative measure, however, all post-excavation soil samples will be obtained from each of the three depth intervals at which soil contamination was detected.

9. Waste Classification Sampling and Off-Site Disposal

All soils with constituent levels above SCOs will be disposed of off-site. The ultimate disposition of those soils will, however, be governed by the results of waste classification testing and disposal facility approvals. Analyses for waste classification purposes have not yet been conducted on soils. Appropriate composite soil samples will be collected from excavated soils for waste classification analyses as required by the disposal facilities identified by Sun Chemical for this project. A primary goal of that testing will be to determine whether any of the excavated soils would be classified as a characteristic hazardous waste; soils would be so classified if the concentrations of metals in samples analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) exceed the maximum allowable concentrations specified in the Resource Conservation and Recovery Act (RCRA). Given that the waste classification of the soils will not be confirmed until following excavation and analysis, provisions have been included in the SMP to ensure that soils that potentially would be characterized as hazardous waste are not inadvertently commingled with other soils. The segregation plan was developed based on an evaluation of total metals concentrations, as discussed below in Section IV.C.1.

10. Site Restoration and Regrading

Following completion of soil remediation activities discussed herein, Sun Chemical will roughly grade the site to prevent accumulation of storm water, to control soil erosion and to prevent the off-site overland migration of storm water and soil to the storm water drainage system and/or to neighboring properties. Grading activities are of particular importance given the planned removal of the formerly interior retaining walls shown on Plates 1 and 2. Given the topographic changes straddling the retaining walls, and the presence of belowgrade spaces, including the basement, it is likely that soil fill will be required to achieve the final rough grade that Sun Chemical envisions for the Site. Sun Chemical will use as backfill excavated soils that have been demonstrated to have constituent levels below the SCOs. If the volume of such soil is insufficient for project purpose, Sun Chemical will procure certified clean fill from a source that can provide proper certification as to the virgin nature of the soil. All imported fill material will be comparable to the silty sand soils native to the Site.

C. Soil Management Plan

In preparation for the below-grade demolition activities implementation of the approved remedy, ENVIRON has developed an SMP to describe the specific procedures that will be followed by the selected soil remediation contactor to remove, segregate and prepare for off-site disposal any soils with known contamination at levels exceeding commercial-use SCOs under the BCP, as well as those soils with suspected contamination above SCOs. The SMP is

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presented below under the following subheading: (1) soil segregation, and staging; (2) soil sampling; and (3) concrete debris evaluation.

1. Soil Segregation and Staging

Sub-slab soils encountered during the planned demolition activities will be screened, segregated and staged in accordance with this section. As discussed in detail below, the management of these soils will be based on: (1) whether data have been obtained to date and if so, on the results of those analyses; (2) observations of soil quality made at the time the soils are exposed and disturbed; and (3) any additional analytical data to be generated from the excavated soils.

a. Remediation in Areas with Known Soil Contamination

Following completion of all above-grade demolition activities, the prior soil sampling locations will be re-surveyed to enable ENVIRON and Sun Chemical to redefine the areas that will be addressed under the IRM. These remediation areas will be delineated with marker paint prior to the onset of any slab removal. As the concrete slabs are removed, the remediation areas will be remarked with stakes, flags and/or marker paint.

Soils within the defined areas will be excavated and staged on/under plastic sheeting on asphalt pavement pending waste classification sampling required by the disposal facility selected for these soils. The soil removal will proceed to the lateral and vertical limits marked by ENVIRON. Should there be evidence of contamination extending beyond the defined excavation limits, additional soils will be removed as directed by ENVIRON. For example, it is possible that the pigment staining that is assumed to coincide with metals impacts beneath the Blue Wing at borings SB-10 through SB-13 extends beyond the areas denoted on Plate 2. If such staining is observed, ENVIRON will direct excavation beyond that boundary until all significant pigment staining is addressed or ENVIRON otherwise determines that it would be appropriate to halt excavation to enable post-excavation sampling.

Based on the analytical data obtained to date, soils with known contamination will be segregated as indicated below. These soils will be placed in the soil staging area shown on Plate 2. This staging area was formerly occupied by the drum storage west of the Red Wing. In addition, the asphalt-paved area located north of the Warehouse/Office Building can be used as alternate staging areas. These areas were selected because they are level and paved, and will not be subject to demolition equipment traffic. The Warehouse/Office Building area could also be used for soil staging, but is considered less desirable because the area would have exposed crushed stone and soil following removal of the building slab. The soils will be staged on and

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covered with plastic sheeting pending any additional analyses needed to enable off-site disposal or on-site reuse.

As noted above, a primary goal of waste classification sampling will be to determine if any of the excavated soils requires disposal as a hazardous waste. Although such sampling has not been performed, for purposes of soil segregation, ENVIRON evaluated the existing soil data to determine which soils, if any, could be classified as hazardous waste through use of the "20-fold rule". In summary, the TCLP analytical method involves extraction of one volume of soil in 20 volumes of acidic leachate solution, thus diluting soil constituent levels by as much a factor of 20, assuming a 100% extraction efficiency. Consequently, it can be assumed that the minimum soil concentration that could render a leachate result exceeding a given RCRA limit would be 20 times that limit. Based on evaluation of data obtained at the Site, there are soils that could be hazardous waste based on this rule and thus, should not be combined with other soils to prevent any unintentional increase in any volume of soils requiring disposal as hazardous waste. For example, per the 20-fold rule, lead concentrations above the SCO exceed 100 ppm, the RCRA limit of 5.0 milligram/liter (mg/l) times a factor of 20. Certain barium concentrations and one chromium concentration are also of concern in this regard. Concentrations of the other five metals regulated by RCRA for characteristic hazardous waste determinations (arsenic, cadmium, mercury, selenium and silver) were not detected in site soils at levels of concern relative to the respective RCRA limits.

Based on this comparison, soils to be excavated from known contaminated areas shall not be combined into a single pile prior to waste classification sampling. Rather, these soils will be segregated into three piles as noted below. The ultimate disposition of these soils will of course be made based on the appropriate waste classification analyses, not the bulk metals concentration data.

- Soils from locations SB-10 through SB-14A will be staged separately. These soils contain barium, chromium, and lead concentrations higher than other soils analyzed from the site, and also likely contain hexachlorobenzene. These soils are also distinct due to their pigment staining.
- Other soils with elevated barium and lead concentrations will be staged in a single combined soil pile, including soils from locations 1607, SB-16/SB-17 and SB-25.

 Soils from all other locations with known contamination will be staged in a single combined soil pile. This includes soils from borings 1604, 1605 and SB-28.

b. Excavation of Soils with Potential Contamination

In addition to the areas noted above, it is possible that soil contamination is present at other locations where soil sampling has not yet been completed or near prior soil sampling points where evidence of impacts have been observed but no soil contamination has been identified.

These soils will be staged in the soil staging area separately from soils with known contamination. The degree of segregation of these soils will be determined based on the nature of potential contamination suggested by the soil screening results. For example, it is anticipated that all soils exhibiting significant pigment staining will be combined given that analytical results from prior sampling indicate that such stained soils have relatively similar metals concentrations. Similarly, soils with elevated PID readings may be staged together provided that the soils do not otherwise exhibit distinguishing features (e.g., different odors or visual appearance).

As listed below, certain locations warrant particular attention during soil disturbance, with other concerns potentially identified based on soil screening that will be performed by ENVIRON during the sub-grade demolition program.

- Elevated PID readings were recorded at soil sampling locations SB-27 and SB-28 but no constituents were detected above SCOs. Nonetheless, the presence of elevated PID readings, particularly in subsurface soils at SB-27, suggest that contaminated soils could be encountered during below-grade operations in this area, such as soils with higher PID readings than recorded to date.
- Soils beneath the former fly wheel pit in the Power House (see Plate 1). During removal of equipment form the Power House on July 22, 2008, Sun Chemical observed that the pit housing the fly wheel mechanism contained approximately 4.5 feet of water mixture with a thin layer of emulsified waste oil. Although there is no indication that water from this pit has leaked into underlying soils, soils beneath the Power House slab will be evaluated for possible associated impacts in accordance with the soil screening methods discussed below.

c. Soil Screening

Soils will be screened using the three methods noted below to identify soils that have evidence of potential contamination and therefore require characterization to determine ultimate disposition.

<u>Visual inspection:</u> Soils will be visually inspected for evidence of potential contamination, particularly the presence of pigment-related soil staining.

Analytical results from the June 2008 sampling program have demonstrated that concentrations of certain metals (i.e., barium, chromium, copper and lead) were present above SCOs in significantly stained soils beneath the Blue Wing at borings SB-10 through SB-13. Given that the highest sub-slab concentrations of these four metals were identified in soils with significant pigment staining, for purposes of the IRM it will be assumed that any soils with comparable staining are potentially contaminated. For clarity, "significant pigment staining" will be considered to indicate soils with pervasive discoloration that appears to derive from surficial industrial operations and/or releases from the industrial sewer system or other below-grade industrial features. Conversely, soils with sporadic incidence of discoloration, which cannot be readily attributed to former pigment production activities, will not be considered to exhibit significant pigment staining and thus, would not require remediation.

All significantly pigment-stained soils will be segregated for sampling (for PPMs+Ba analyses) to satisfy NYSDEC DER-10 guidance. However, Sun Chemical has elected to proceed with the off-site disposal of any significantly stained soil regardless of the actual constituent concentrations identified in those soils. No excavated soils with significant pigment staining will be regraded or returned to the Site as fill.

Screening with a photo-ionization detector: Soils being excavated will be screened with a photo-ionization detector (PID). Soils exhibiting elevated PID readings (other than those soils proximate to sampling locations SB-27 and SB-28) potentially contain VOC soil contamination. Therefore, these soils will be excavated and segregated following the collection of in-place soil samples to evaluate the concentrations of VOCs. Prior soil sampling at borings SB-27 and SB-28 has confirmed that despite PID readings approaching 100 ppm, no TCL VOCs were present in soils at those locations. Consequently, soils from the vicinity of those locations which exhibited similarly elevated PID responses do not require segregation. However, if substantially higher PID readings are recorded in this area, in-place soil samples will be collected prior to excavation. Unless there

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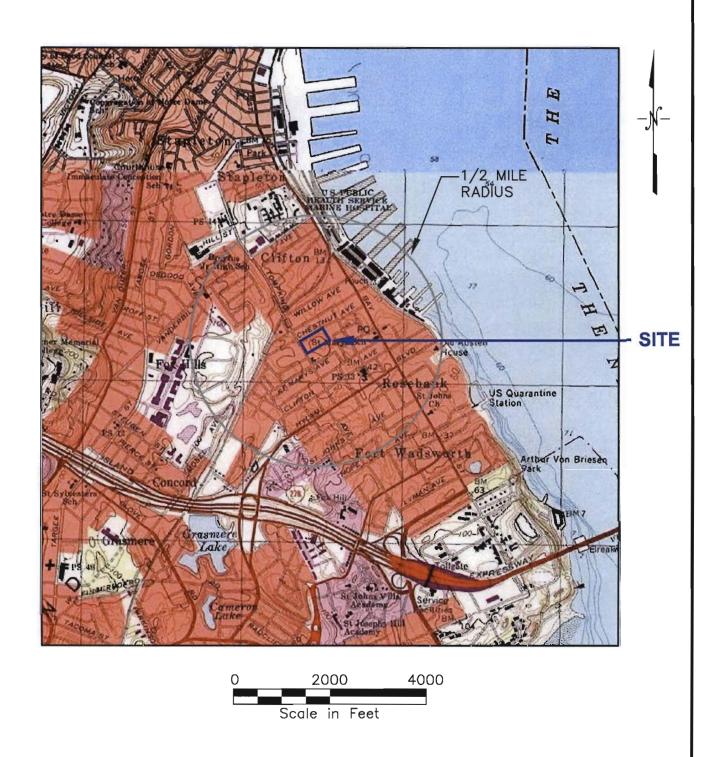
are conditions suggesting that there could by multiple types of VOC impacts (such as differing staining or odors), soils with elevated PID readings will be staged together.

Olfactory screening: As a supplement to PID screening and visual inspection, site personnel engaged in demolition and soil excavation activities will identify soils that exhibit unusual odors. Through sampling completed to date, the only soils with noticeable odors have been those at borings B-27 and B-28, where relatively faint potential petroleum odors were noted in those soil intervals that exhibited elevated PID readings. However, analytical results for soil sampling completed at those locations indicate that those soils are not contaminated above SCOs. Should soils at other locations exhibit odors, they will be staged separately pending confirmatory sampling. The scope of that sampling will be determined based on the nature of the odors and other soil conditions (e.g., the presence of coincident staining or PID readings).

2. Soil Sampling and Data Evaluation

ENVIRON will collect all soil samples discussed above, including in-place soil samples, post-excavation samples and samples for waste characterization. ENVIRON may seek the assistance of the remediation contractor with the sampling efforts, so as through collection of post-excavation samples from excavations that cannot be safely entered for manual sample collection. ENVIRON will also coordinate all laboratory analyses.

FIGURE



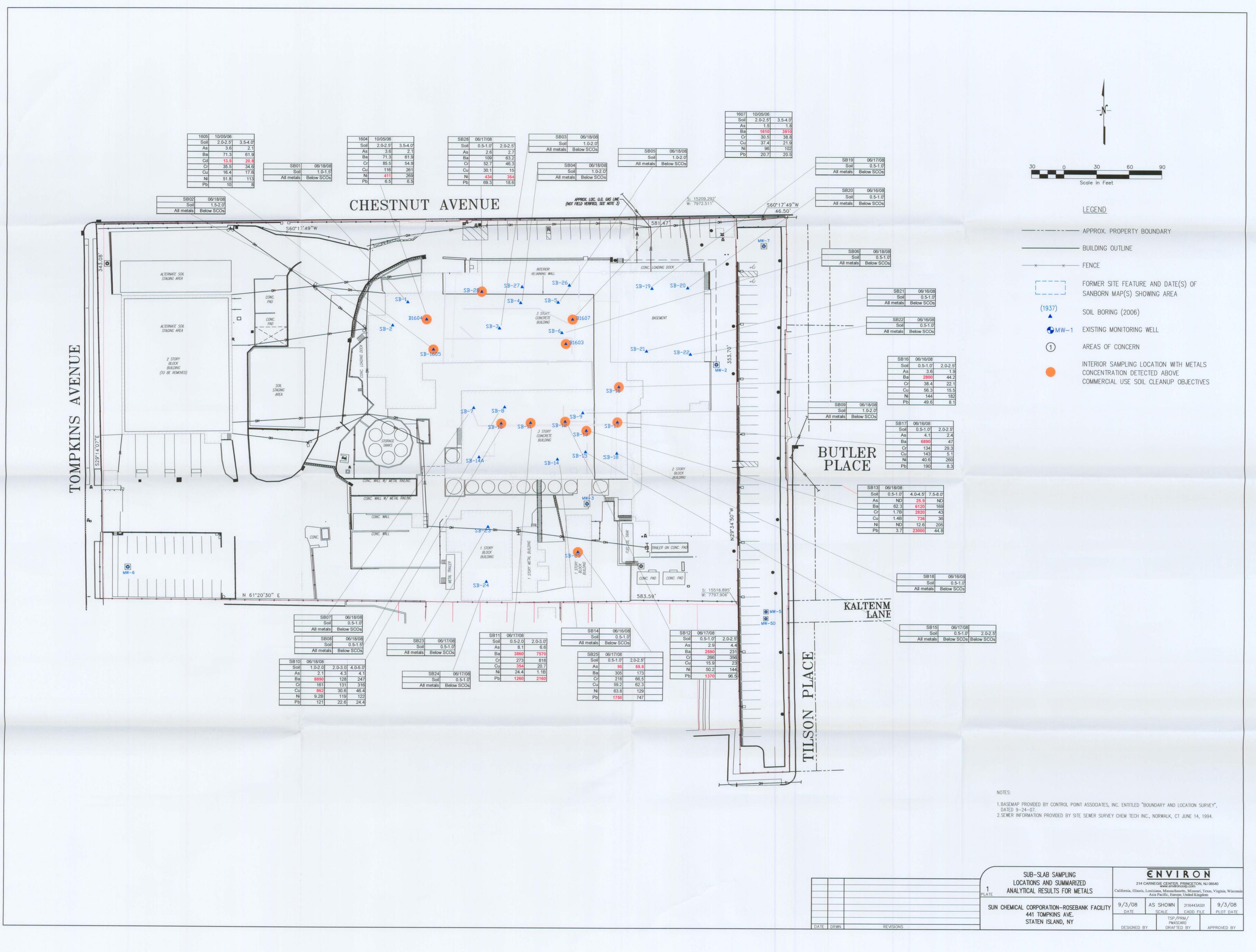
SOURCE: TOPO! MAP PRINTED ON 08/29/07 FROM "NORTHEASTERN.TPO" USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, THE NARROWS, NY-NJ. MAP VERSION 1998. MAP CURRENT AS OF 1998.

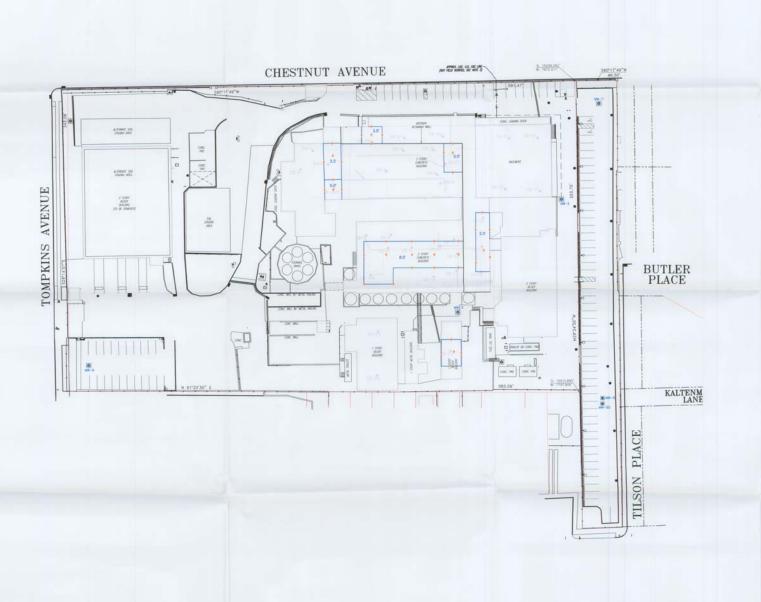
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SITE LOCATION MAP SUN CHEMICAL CORPORATION 441 TOMPKINS AVENUE STATEN ISLAND, NEW YORK FIGURE

21-16443AJ01

PLATES







LEGEND

APPROX. PROPERTY BOUNDARY

BUILDING OUTLINE

FENCE

ESTIMATED AREA OF IRM

ESTIMATED DEPTH OF IRM

POST-EXCAVATION SOIL SAMPLING LOCATIONS

SOIL BORING EXISTING MONITORING WELL

1. BASEMAP PROVIDED BY CONTROL POINT ASSOCIATES, INC. ENTITLED "BOUNDARY AND LOCATION SERVE!". DATED 91-14-107. 2. STREN A ROBINATION PROVIDED BY SITE SEMEN SURVEY OHD TECH INC., NORMAIN, CT. AND 14, 1984.

ENVIRON SOIL REMEDIATION AREAS FOR IRM

APPENDIX A

December 2007 Site Characterization and Remedial Investigation Report

SITE CHARACTERIZATION AND REMEDIAL INVESTIGATION REPORT FOR SUN CHEMICAL CORPORATION 441 TOMPKINS AVENUE STATEN ISLAND, NEW YORK BLOCK 2846, LOTS 12 AND 54

Prepared for

Sun Chemical Corporation Parsippany, New Jersey

Prepared by

ENVIRON International Corporation Princeton, New Jersey

December 2007 Project No. 21-16443A

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PLATE

Plate 1: Historical Site Features/Areas of Concern and Actual Sampling Locations

APPENDICES

Appendix A: Soil Boring Logs

Appendix B: Summary Soil and Ground Water Data Tables

ATTACHMENTS

Attachment A: Regulatory Correspondence Related to 1988 Caustic Solution Release

Remediation

Attachment B: NYSDEC Correspondence Related to the 1994 Hazardous Substances Disposal

Site Study

Attachment C: CD-ROM with STL Laboratory Reports for the August-October 2006 Sampling

Program

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I. INTRODUCTION

A. Purpose and Scope

ENVIRON International Corporation (ENVIRON) has prepared this Site Characterization and Remedial Investigation Report (SCR/RIR) regarding the Sun Chemical Corporation ("Sun Chemical") facility located at 441 Tompkins Avenue in Staten Island, New York (the "Site", shown on Figure 1) to present the results of recent soil and ground water sampling conducted at the Site. Sun Chemical conducted this voluntary investigation of the Site in August-October 2006 to evaluate future development and remediation options for the Site following the anticipated cease of operations at the Site. The scope of these investigations was based on a comprehensive review of historic industrial operations and other Site activities that may have resulted in adverse environmental impacts. Appropriate soil and ground water samples were obtained in those areas to characterize the nature and extent of any associated contamination.

The SCR/RIR presented herein was implemented in accordance with the December 2002 New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) Draft *Technical Guidance for Site Investigation and Remediation*, also known as DER-10.

The remainder of this section provides pertinent information regarding the basis for completing the remedial investigation and planned Site redevelopment. Section II of this report discusses the history of Site ownership and operation, and the nature and scope of prior investigations of the property. Section III discusses the areas of concern (AOCs) identified at the Site and the recent sampling completed in those AOCs.

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II. SITE CHARACTERIZATION: INDUSTRIAL OPERATIONS, SITE HISTORY AND PRIOR SITE INVESTIGATIONS

A. Introduction

In accordance with Section 3.1.1(a) of DER-10, Sun Chemical and ENVIRON completed a detailed records search, including interviews with current and former Sun Chemical to develop a history of manufacturing operations and locations of the handling, storage and potential release of hazardous substances, as needed to identify potentially contaminated AOCs at the Site. As discussed in detail in Section III of this report, in August 2006, ENVIRON conducted field characterization and remedial investigation activities based on information gathered during this records search. The remainder of this section discusses the findings of the records search, including: (1) current and historical industrial operations, (2) the history of Site ownership and development; and (3) prior Site evaluations.

B. Current and Historic Industrial Operations

Based on interviews with current and former Sun Chemical employees, ENVIRON determined that the Site has continuously operated for the production of pigments for the printing and cosmetics industries since development of the property for industrial purposes in 1907. Sun Chemical has operated the Site since 1957, primarily producing red pigments, but also lesser quantities of blue, yellow and green pigments, in portions of the facility designated as the Red and Blue Wings (see Figure 2). Although the specific nature of the pigments manufactured by Sun Chemical has changed over time, the overall production processes have remained relatively constant. Specific details regarding pigment manufacturing processes of prior Site owners and operators is not available but based on information regarding raw materials stored on-Site available from historical resources (e.g., Sanborn Fire Insurance maps), Sun Chemical believes that the basic processes employed at the Site prior to 1957 are comparable to those conducted more recently, with the use of inorganic pigments (e.g., lead chromate) considered likely.

Sun Chemical produces pigments as pH-buffered aqueous slurries through the reaction of organic and non-toxic inorganic pigments, such as barium, in an acidic or basic solution depending on the pigment. Raw materials are kept in plastic and plastic-lined paper bags stored in several areas of the main building. Acids and caustic solution are stored in aboveground storage tanks located adjacent to the building, as shown on Figure 2. These operations are conducted in various aboveground tanks/reactors located in the Red Wing and Blue Wing of the main manufacturing building (see the detailed interior plan provided as Figure 2). At completion of the reaction, the resulting pigment slurry is drained via gravity to one of 19 filter presses on

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the ground floor that remove the majority of the free liquid by mechanical pressure. The resulting wastewater, which may be either acidic or basic depending on the specific pigment being produced, is treated via pH adjustment in an on-Site wastewater treatment plant prior to discharge to the Port Richmond Wastewater Treatment Plan under a permit issued by the New York City Department of Environmental Protection. The wet pigment cake is removed to a cart and taken to an oven for drying. The dried pigment cake is then ground to a fine powder, and placed in bags or plastic-lined fiber drums prior to shipment to customers. According to Sun Chemical personnel, other than the 1988 release of caustic solution, described in detail below in Section II.C, there have been no significant releases of hazardous substances at the Site. During drain maintenance, Sun Chemical identified evidence of leaks from the industrial wastewater system beneath the Red and Blue Wings. These areas were evaluated through interior soil sampling completed in AOC 16, as discussed in detail in Section III.

C. Site History

ENVIRON, on behalf of Sun Chemical, completed a diligent evaluation of the history of Site development, industrial operations and activities based on the ownership and operational history of the Site. This evaluation was conducted consistent with DER-10 and was also in general conformance with the scope and limitations of ASTM International's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E-1527-05 (the "ASTM Standard"). Accordingly, ENVIRON reviewed historical Site information, including that available electronically from Environmental Data Resources, Inc. (EDR). The specific resources reviewed by ENVIRON include:

- Deeds for the property.
- Sanborn Fire Insurance maps from 1898, 1917, 1937, 1950, 1962, 1977, 1981, 1983 and 1986 though 1996.
- City Directory abstracts from 1928, 1934, 1960, 1965, 1970, 1979, 1984, 1990 and 2000.
- Aerial photographs from 1954, 1966, 1975, 1984 and 1995.
- A search of available federal, state and local database records for information regarding historical releases, spills and underground storage tank (UST) issues.

ENVIRON also requested, and when available reviewed, Site-related files from the New York City Department of Health and Building Departments, as well as the New York Fire Department. Available records did not provide information specific to issues of potential environmental concern at the Site. Last, ENVIRON interviewed long-term Sun Chemical employees regarding historical raw material, waste and wastewater handling practices. These interviews provided information relevant to the understanding of the handling of industrial wastewater and the locations of former releases.

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Based on these resources, ENVIRON has developed the following Site history. The 5.3-acre property comprises three tax lots in Tax Block 2846, including: (1) Lot 12, is a 4.7-acre lot comprising the majority of the property and the land on which manufacturing operations have occurred; (2) Lot 54, the 0.5-acre lot designated in tax records as 88 Chestnut Avenue, is located east of Lot 12 and formerly a portion of a passenger and freight railroad; and (3) Lot 314, is a small lot less than 0.1 acre in size that has been zoned and used for residential purposes since its development in the 19th century. For purposes of this summary of Site history, references are provided relative to these specific lots as appropriate. Significant historical Site features are shown in blue on Plate 1. Figures 2 through 8 provide enlargements of the Site and immediately surrounding properties based on Sanborn Fire Insurance maps from 1898, 1917, 1937, 1950, 1962, 1977 and 1986. Other Sanborn maps, from 1981, 1983 and after 1986, provide identical information as the 1986 map and are therefore not included.

1898 (Sanborn Map)

Lot 12 appears to consist of three parcels. The western parcel, at the corner of Chestnut and Tompkins Avenues, is the Site of a pavilion. The Caprera Hotel is located on the central parcel, along Chestnut Avenue. A shooting gallery and adjoining shelter are shown at the southern (rear) end of this parcel. The largest parcel, which fronts Chestnut and Tompkins Avenues, as well as the Staten Island Metro Transit railroad (the future location of Lot 54) to the west, is undeveloped with an embankment shown in the northeastern corner. Lot 314, being the rear portion of 327 St. Mary's Avenue, and showing a residential property with a single-family dwelling fronting St. Mary's Avenue, does not yet exist

1907-8 (Sun Chemical and 1917 Sanborn Map)

Lot 12 was acquired by the G. Siegle & Co. Color Works (Siegle). Siegle constructed a pigment production facility, which appears to have been in operation as of 1908.

1917 (Sanborn Map)

Lot 12 is shown as a single parcel that has been developed as the G. Siegle & Co. Color Works (built 1908), with two dwellings and five auxiliary buildings also on-Site. A two-wing production building is present, although additions to the west and south have not yet been constructed. A coal pile is shown at the southeastern corner of the Site (furnaces were presumably coal-fired at this time). Interior features include two precipitation and drying/grinding areas. Exterior features include a furnace, a pool (aboveground water storage feature for fire protection) and a supply storage area along the southern perimeter. No specific chemical or hazardous materials storage locations are shown. Lot 54 is the Staten Island Rail Transport Railway, with a single rail spur entering Lot 12 along its eastern perimeter and extending to the northeastern corner of the Site. The future location of Lot

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314 is unchanged, although addresses along St. Mary's Avenue have changed. This parcel is shown as #91, with the house divided into a twin dwelling.

1928 (City Directory)

According to New York Telephone records, two residences were located at the current Site address. This is consistent with the two dwellings shown on the 1917 and 1937 Sanborn maps.

1937 (Sanborn Map)

The facility located on Lot 12 is designated as The Ansbacher-Siegle Corp., manufacturers of dry colors. The main building is shown on Lot 12 as is the southern of the two dwellings shown on the 1917 map. The main building has been expanded, particularly around the north wing, extending over a portion of the rail spur entering the property from the south. A number of additional features are evident, suggesting expansion of industrial activities. For example, a relatively small one-story addition has been constructed on the western end of the main building. Individual blue pulp, bichromate and acid tank storage areas (number of tanks not specified) abut the southern side of the main building. In addition, a chrysophenine plant has been constructed along the southern property line, at the location of the former supply storage area noted on the 1917 Sanborn map. Chrysophenine (4,4'diaminostilbene-2,2'-disulfonic acid or DSD acid), is a yellow pigment or a fluorescent whitening agent (current application). A miscellaneous materials storage area is adjacent to and west of the chrysophenine plant. Two greenhouses are also located on-Site, one adjacent to the miscellaneous materials storage area and the other further to the east behind an automobile garage associated with the dwelling at the southwestern property corner. The pool has been replaced by a 100,000-gallon reservoir. A boiler room is shown to the rear of the Site with a notation that it was constructed in 1908 (it was not shown on the 1917 map). The coal pile is absent. Lots 54 and future lot 314 are unchanged.

1950 (Sanborn Map)

The Lot 12 parcel is still shown as The Ansbacher-Siegle Corp., manufacturers of dry colors. There are four primary changes to this lot evident since the 1937 map was prepared. First, the small one-story western addition has been replaced by a larger two-story addition (built in 1942) housing color tanks. Second, two underground fuel oil storage tanks (size not specified) are shown at the southeastern property corner, the former coal pile location. Third, the chrysophenine plant has been removed; a machine and carpentry shop with attached office is now shown at that location. A four-section storage building has also been built to the east (rear) of the carpentry shop. A dust collector is shown directly east of the portion of the building that connects the two wings. Last, two additional structures are

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located proximate to the automobile garage (uses unspecified). Although Lot 54 is unchanged, the Rosebank Passenger Station for the railroad is now evident at the eastern terminus of St. Mary's Avenue, adjacent to Lot 54. The residences at 91 and 95 St. Mary's Avenue, both of which had fronted the street, are absent and the property lines for these lots are now set back from the road. These properties appear to have been reconfigured as part of the passenger rail station construction. Lot 314 appears to now on the map.

1954 (Aerial Photograph)

The northwestern corner of Lot 12 appears wooded with a single dwelling. The remainder of the Site (all three lots) appears largely as it did on the 1950 Sanborn map with the exception of disturbed ground along the western side of the plant, likely from on-going construction of building additions which were finished in 1955 (see entry for 1962 Sanborn map). No areas of significant exterior storage are evident. Given the small scale of this photograph and the relatively close spacing of the buildings, the aboveground storage tank areas are not visible. A railroad is present on Lot 54. No activity is discernible on Lot 314.

1957 (Deed)

The Ansbacher-Siegle Corporation sold Lot 12 to Sun Chemical on December 1, 1957. Sun Chemical also acquired Lot 314 on that date, although the identity of the prior owner is not available.

1962 (Sanborn Map)

Lot 12 remains as The Ansbacher-Siegle Corp., manufacturers of dry colors. There have been four significant changes to the property configuration since 1950. First, an L-shaped, three-part addition was built in 1955 on the western end of the main building, connecting the northern and southern wings. The largest section of the addition is designated for manufacturing. Second, the residential property at the corner of Chestnut and Tompkins Avenue has been partially converted to an office. A warehouse building with 2nd-floor office space has been constructed between that dwelling and Tompkins Avenue. Third, two free-standing acid tanks have been installed near the northwestern corner of the main building (the blue pulp, dichromate and acid tanks are shown as remaining). Last, all four of the auxiliary buildings between the other dwelling (which fronts Tompkins Avenue) and the machine and carpentry shop have been demolished. Lots 54 and 314 are unchanged since the 1950 map.

1965 (City Directory)

According to New York Telephone Company records, there are two listings related to Sun Chemical for 92 Chestnut Avenue, an address which Sanborn maps of this vintage indicate

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as being located at the northeast corner of the Sun Chemical Site. These listings include "Ansbacher Siegle Div of Sun Chemcl Corp Colrs" and "Sun Chemcl Corp". However, there are no listings for 1965 for the current facility address. In addition, there were no subsequent City Directory listings for 92 Chestnut Avenue.

1966 (Aerial photograph)

Lot 12 of the Site appears largely the same as on the 1962 Sanborn map. A relatively large storage area is located between the northern side of the warehouse and Chestnut Avenue. The materials are staged in orderly rows suggesting that they include pallets of drums, bags, raw materials and/or finished goods. There also appears to be miscellaneous storage of materials along the southern fenceline, an area which GZA designated as the "drum and bag storage area" by GZA in a July 2000 Preliminary Site Assessment Work Plan it prepared for NYSDEC (discussed below). No stained areas are apparent.

1970 and 1975 (City Directory)

The current Site address is listed in New York Telephone records under "Sun Chemcl Corp Pigmts Dept".

1975 (Aerial photograph)

The dwelling on Lot 12 immediately east of the warehouse has been removed and another feature, slightly larger than the footprint of the former dwelling, appears to be under construction. Much of the outdoor storage of materials north of the warehouse appears to be gone; only several trucks are present. There continues to be storage of miscellaneous materials along the southern fenceline; no stained ground is apparent. The remainder of the Site appears unchanged since 1966.

1977 (Sanborn Map)

The office/dwelling structure has been removed as have the blue pulp, dichromate and acid tanks along the southern side of the main building. There have been no other significant changes to the three lots at the Site.

1979 (City Directory)

The current Site address, with the street name compressed to "Tmpkns Ave", is listed in New York Telephone records under "Sun Chemcl Corp Pigmts Dept".

1981, 1983 and 1986 through 1996 (Sanborn Maps)

There are no significant changes to the facility noted to any of the three lots on these 13 maps. The property owner is shown as Sun Chemical Corp. beginning in 1986. The only

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structural change at the Site shown on these maps is the addition of a pump house and garage west of the machine and carpentry shop on the 1996 map.

1984 (Deed)

Sun Chemical acquired Lot 54 on June 19, 1984 from Staten-Island South Beach, Inc.

1984 (City Directory)

The Site address, with the street name compressed to "Tmpkns Ave", is listed in New York Telephone records under "Sun Chemcl Corp Pigmts Dept".

1984 (Aerial photograph)

Although materials storage is evident near the warehouse and the southern fenceline, the small scale of this photograph does not enable the nature of those materials to be identified.

1986 (Deed)

On December 31, 1986, Sun Chemical was acquired by SUN/DIC Acquisition Corporation, the current owner of Lots 12, 54 and 314.

1990 (City Directory)

The Site address, with the street name compressed to "Tmpkns Ave", is listed in NYNEX Information Resource Company records under "Sun Chemcl Corp Pigmts Dept".

1993 (Database Search)

Two 25,000-gallon fuel oil USTs were removed. The records indicate that the tanks were installed in 1946 and formerly held No. 5 or No. 6 fuel oil. A 10,000 UST was then reportedly installed in approximately 1993 for No. 2 fuel oil storage. (This tank, actually an aboveground storage tank within a secondary containment structure, remains on-Site.)

1995 (City Directory)

The Site address is listed in NYNEX records under "Sun Chemcl Corp Pigmts Dept".

1995 (Aerial photograph)

Relatively large material storage areas are evident east of the warehouse and west of the machine and carpentry shop. The warehouse storage location (which is asphalt-paved) is still used for the staging of bagged finished product and other materials. A vehicle/forklift track encircles the warehouse storage area.

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D. Prior Site Evaluations

Several evaluations were completed at the Site prior to the recent Site assessment, as summarized below under the following subheadings: (1) summary of 1988 soils investigation; (2) summary of the 1994 study by NYSDEC; and (3) summary of the 2001 Preliminary Site Assessment.

1. Summary of 1988 Soil Investigation

Based on internal Sun Chemical documentation, discussions with Sun Chemical personnel and correspondence between Sun Chemical and regulatory agencies, on February 17, 1988 a bulk raw material storage tank located near the southern property boundary was overfilled resulting in the discharge of approximately 545 gallons of a 25% sodium hydroxide solution to the exposed soil surface. The solution flowed from the Sun Chemical Site onto portions of the adjacent St. Joseph's Parochial School property, entering two storm drains connected to the school's combined sewer system. Sun Chemical retained OH Materials, Inc. as its emergency response contractor, and immediately initiated emergency response measures to contain the released caustic material and evaluate any environmental impacts from the release. Based on soil sampling completed at that time by OH Materials, the pH of the near-surface soils on the two properties was greater than 12, as was the water in the storm sewers. Accordingly, Sun excavated the impacted soils and cleaned the affected storm sewers. Subsequent soil sampling confirmed that elevated pH levels requiring response had been effectively addressed. The March 29, 1988 Technical Report (Preliminary) prepared by the New York Department of Environmental Protection Division of Hazardous Materials Programs (DHMP) and included herein in Attachment A indicates that personnel from the DHMP were involved at the time of the release and subsequent remediation, and that those personnel concluded that remediation of the release was completed in March 1988. This conclusion was confirmed by the City of New York Department of Environmental Protection in its April 14, 1988 letter to NYSDEC.

Sun Chemical subsequently constructed a concrete retaining wall along the common boundary between the Site and the school to minimize the potential for future drainage of storm water off-Site. During these construction activities, discolored soil was observed on the Sun Chemical property and accordingly, soil samples were collected (from unspecified depths but which are believed to be less than 3 feet). Soil samples were taken from one location within the trench dug to accommodate the retaining wall and from three nearby locations on the school property. These four samples were analyzed for RCRA characteristics and RCRA metals by the EP Toxicity method (EP Tox). Three additional soil samples were collected from one off-Site and two on-Site locations, and analyzed for a broader suite of parameters, including RCRA characteristics and RCRA metals by EP Tox,

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total cyanide, total phenols, Priority Pollutant metals (PPMs)¹, TCL volatile organic compounds (VOCs), TCL pesticides and polychlorinated biphenyls (PCBs), and TCL semi-volatile organic compounds (SVOCs). These results were provided to the DEP by Sun Chemical in 1988 as part of the emergency response action.

Those data indicated that pesticides and acid extractable compounds were not detected. In addition, only three VOCs (acetone, methylene chloride and toluene) were detected, all at *de minimis* levels. Further, acetone and methylene chloride also were present in the laboratory method blanks, confirming that the presence of those constituents most likely resulted from laboratory contamination. Cyanide was detected but also not at significant concentrations. Lead, PCBs and one base/neutral extractable organic compound (BN), di-octyl phthalate, were detected at elevated concentrations and consequently, in the April 14, 1988 letter noted above, the DHMP referred further investigation of the Site to the NYSDEC. No additional investigation or remediation was required by DHMP. However, in 2006 additional soil sampling was completed in this area, as discussed below, including analyses for metals, PCBs and BNs.

2. Summary of 1994 Hazardous Substances Disposal Site Study by NYSDEC

In a December 28, 1994 letter to Sun Chemical (provided in Attachment B), NYSDEC indicated that it had begun a Hazardous Substances Disposal Site Study (the "Study"), noting that the Sun Chemical Site was included in an inventory NYSDEC had compiled of potentially contaminated Sites. Based on its review of the historical data from the Sun Chemical facility reviewed as part of the Study, NYSDEC identified the following three contaminants of concern (provided with maximum concentrations) in soil at the Site in a draft "Hazardous Substance Waste Disposal Site – Description" form: lead (3,020 ppm), bis(2-ethylhexyl)phthalate (BEHP) (400 ppm) and PCBs (15 ppm). These constituents were identified by Sun Chemical during its response activities related to the 1988 caustic solution release. As indicated in the preceding subsection, other parameters for which analyses were conducted in 1988 were either not detected or were identified at levels of potential concern to NYSDEC. Based on these data, NYSDEC included the Site on a list of 612 Sites identified by the Study.

Sun Chemical is not aware of any additional actions taken by NYSDEC related to this listing prior to NYSDEC's July 9, 1999 letter (see Attachment B) notifying Sun Chemical that the Department had completed a December 1, 1998 addendum and would conduct a Preliminary Site Assessment (PSA). (Sun Chemical received a comparable notice from NYSDEC dated February 16, 2000). NYSDEC contracted TAMS/GZA GeoEnvironmental of New York (TAMS/GZA) to prepare a PSA work plan (the TAMS/GZA Work Plan). An

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The PPMs include the following thirteen metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium and zinc.

initial draft was completed for NYSDEC in July 1999 proposing Site-wide soil and ground water sampling at the Sun Chemical facility, rather than sampling targeted to the former caustic release location. That work plan was not implemented.

Concurrent with NYSDEC's involvement with the Site, Sun Chemical was in discussions with the Department regarding taking the lead in conducting the PSA. In a March 1, 2000 letter from Brown & Wood LLP (now Sidley Austin Brown & Wood LLP), Sun Chemical's outside counsel at that time, Sun Chemical indicated its preference for completing the PSA at its expense using an environmental consulting firm it retained. During an April 7, 2000 telephone conversation with ENVIRON, NYSDEC agreed that Sun could take the lead in completing a PSA specifically targeting the former caustic release area.

3. Preparation of 2001 Preliminary Site Assessment

Following the discussions with NYSDEC discussed in the preceding subsection, Sun Chemical retained ENVIRON to prepare a PSA Work Plan for submission to NYSDEC. ENVIRON submitted a PSA Work Plan to NYSDEC in April 2001 proposing soil sampling in the area of the Site and the adjoining school property that appeared to have been affected by the February 1988 caustic solution release. Based on comments received from NYSDEC in May 2001, ENVIRON updated the PSA and submitted a Revised PSA Work Plan to NYSDEC in August 2001.

The August 2001 Revised PSA Work Plan also documented the results of ENVIRON's July 2001 evaluation of the integrity of the floor beneath the pigment filter presses in response to NYSDEC's claims that the acidic and basic wastewaters released to the floor were hazardous waste. The intent of ENVIRON's inspections was to identify any areas of deterioration or damage to the interior concrete flooring through which filter press wastewaters could potentially impact underlying soils. The August 2001 Revised PSA Work Plan indicated that no such damage was observed.

The PSA Work Plan was not implemented, and there was no further interaction between ENVIRON and NYSDEC related to soil and ground water conditions on the Site.

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III. SITE CHARACTERIZATION AND REMEDIAL INVESTIGATION: SOIL AND GROUND WATER SAMPLING PROGRAM

A. Overview

Based on the detailed review of historical documentation and discussions with Sun Chemical personnel, ENVIRON identified 15 AOCs warranting further evaluation. These AOCs, and the specific environmental concerns, are presented in Table 1. The Site characterization was completed in August 2006 to provide an initial understanding of soil quality at the Site. ENVIRON, on behalf of Sun Chemical, implemented a remedial investigation (RI) plan in October 2006 to provide additional data regarding the nature of soil and ground water quality at the Site. The RI sampling program was completed between August 28 and October 17, 2006. Analytical results of the sampling program are discussed by individual AOC below. Summary data tables are provided in Appendix B.

B. Overview of Sampling Program and Methodologies

SGS Environmental Drilling, Inc. of West Creek, New Jersey installed all monitoring wells at the Site using hollow-stem augers. SGS also completed the soil borings using direct-push techniques under the supervision of an ENVIRON geologist. At each soil boring, continuous soil cores were collected to enable logging of geologic conditions and screening of the soil cores with a photo-ionization detector (PID) to assist in determining whether there was evidence of impacted soils; no such impacts were observed. Soil boring logs, which provide soil classification information and field screening results, are provided in Appendix A. The summary data tables provided in Appendix B include the actual sampling locations, depths and analyses. All soil sampling locations are shown on Plate 1.

At each location, ENVIRON attempted to collect soil samples from the intervals most likely to have been adversely impacted by former industrial operations. For AOCs designated based on surficial activities (e.g., aboveground storage tanks or railroad tracks), sampling was targeted to the soil surface directly beneath the pavement. At certain locations, however, the presence of crushed stone bedding for the pavement or rocky soils precluded sampling at that interval. In those instances, ENVIRON therefore collected the soil sample from the uppermost soil interval encountered.

All downhole drilling and sampling equipment was decontaminated between uses. Downhole components including direct-push rods and core barrels, were decontaminated with an Alconox solution followed by a tap water rinse.

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All soil samples were placed directly into laboratory-provided glassware and stored on ice in a cooler under appropriate chain-of-custody protocol. Samples were delivered to Severn Trent Laboratories (STL) (now TestAmerica, Inc.) of Edison, New Jersey, a New Jersey-certified laboratory, for all of the required analytical services. Given the potential for historic use of inorganic pigment, soil samples from each AOC were analyzed for Priority Pollutant metals (PPM) plus barium by the applicable USEPA 6010 and 7000 series methods. In addition, soil samples from certain AOCs were also analyzed for VOCs by USEPA Method 8260B, PCBs by USEPA Method 8080, TCL SVOCs by USEPA Method 8270C. Summarized soil data are provided in tables included as Appendix B. A CD-ROM provided as Attachment C provides the STL laboratory reports for the August-October 2006 sampling program.

As discussed in each of the following subsections, the SC and RI determined whether there was contamination associated with each AOC targeted for sampling, identified the constituents of concern associated with a given AOC, and evaluated the lateral and vertical extent of those impacts. Specific information regarding each AOC, and the associated analytical results, are discussed below.

C. Findings in Areas of Concern

1. AOC 1 – Former Shooting Gallery

AOC 1 is the location of a former shooting gallery, identified on the 1898 Sanborn Fire Insurance map for the Site. Although the predominantly residential character of adjacent property lots at that time suggested that live ammunition was not used at this shooting gallery. Nonetheless, Environ evaluated this area to determine if shooting activities resulted in impaired soil quality. ENVIRON advanced six borings in this AOC. The first two borings, B101 and B102, were completed in August 2006 for initial characterization and were advanced to a depth of 4 feet. Three soil samples were obtained from each location and analyzed for PPMs and barium. In addition, analyses for TCL VOCs were completed given to provide additional data regarding VOC conditions at the Site. Sun Chemical completed borings B103 through B106 in October 2006, collecting soil samples from each of these borings from one or two intervals. These samples were analyzed for PPMs plus barium. In addition, soil samples from boring B106 (from 1.5-2.0' and 3.5-4.0') were analyzed for SVOCs to assist in the characterization of this portion of the Site and adjacent AOC 14. The actual sampling depths and analyses are provided on the summary data tables included in Appendix B.

Notably, there was no visual evidence of ammunition at the borings. Analytical results of this sampling indicated that VOCs and SVOCs were generally not detected but when present, were typically identified at negligible concentrations well below 1 part per million.

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Metals were detected; Appendix B provides the specific detected metals concentrations, as well as concentrations of the detected SVOCs and VOCs.

2. AOC 2 – Former Railroad Tracks at Eastern Parking Lot

AOC 2 is the location of the former Staten Island Rapid Transit railroad line, and the associated rail spur formerly servicing the Site. Sun Chemical removed these lines (including the rails and ties) in the 1980s to enable construction of the parking lot that now borders the eastern side of the facility. Soil samples were collected from AOC 2 from borings B201 through B204 and from MW5. Given concerns regarding impacts from historic loading/unloading operations, and constituents often associated with operating rail siding, soil samples from AOC 2 were analyzed for PPMs, barium and SVOCs. Soil samples from these borings were obtained from six-inch intervals generally at the soil surface (underlying the asphalt pavement) and from approximately 1.5-2.0'. In addition, a deeper sample was colleted from B202 (3.5-4.0'), B204 (2.0-2.5') and MW05 (3.5'4.0'). In addition, soil samples from boring B1606, completed east of the Red Wing (See below "AOC 16"), also provides data relevant to AOC 2. Soil samples were collected from B1606 at 2.0-2.5' and 3.5-4.0'.

There were scattered detections of polycyclic aromatic hydrocarbons (PAHs) at concentrations between 1 ppm and 10 ppm, generally in surface soils only. Other SVOCs were either not detected or were present at low concentrations typically less than 1 ppm. Metals were detected; Appendix B provides the specific detected metals concentrations, as well as concentrations of the detected SVOCs.

3. AOC 3 – Former Blue Pulp Aboveground Storage Tank South of Blue Wing

AOC 3 is the location of the former blue pulp aboveground storage tank south of the Blue Wing, evident on Sanborn Fire Insurance maps dating from 1937, 1950 and 1962. Soil boring B301 was completed in August 2006 directly south of the former tank location. The two soil samples from B301 (from 0.3-0.8' and 2.0-2.5') were analyzed for PPMs and barium. ENVIRON also completed boring B302 in October 2006 to the southwest of the former tank location, with one sample collected from 1.0-1.5' for PPM and barium analysis. Due to the existence of underground utility lines (particularly water and wastewater lines), as well as elevated concrete pads for current tanks, other locations proximate to the former tank area were not accessible. Appendix B provides the specific detected metals concentrations.

4. AOC 4 – Former Bichromate Aboveground Storage Tank South of Blue Wing

AOC 4 is the location of the former bichromate aboveground storage tank south of the Blue Wing. This tank is evident on Sanborn Fire Insurance maps dating from 1937, 1950

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and 1962. Boring B401 was completed in August 2006, with a sample for PPM and barium analysis collected from 1.5-2.0'. ENVIRON also completed boring B402 in October 2006. Two soil samples were collected from B402 for PPM and barium analysis, including from 1.0-1.5' and 2.0-2.5'. Appendix B provides the specific detected metals concentrations.

5. AOC 5 – Former Acid Aboveground Storage Tank South of Blue Wing

AOC 5 is the location of the former acid aboveground storage tank south of the Blue Wing. This tank is evident on Sanborn Fire Insurance maps dating from 1937, 1950 and 1962. Although the information indicated that only acid was stored in this tank, rather than inorganic pigments, soil samples were collected from MW3 for PPM and barium analysis from 0.2-0.7' and 1.5-2.0'. Appendix B provides the specific detected metals concentrations.

6. AOC 6 – Former Acid Aboveground Storage Tanks South of Red Wing

AOC 6 is the location of the former acid aboveground storage tanks south of the Red Wing (the pad remains). These tanks are evident on Sanborn Fire Insurance maps dating from 1937, 1950 and 1962. ENVIRON completed boring B601 adjacent to the pad and collected a soil sample in August 2006 from 1.8-2.0 feet for PPM and barium analysis. Additional samples were collected proximate to B601 in October 2006 at borings B602 (2.0-2.5') and B603 (1.0-1.5'). These samples were also analyzed for PPMs and barium. In addition, three other borings (B604, B605 and B606) were completed in the courtyard where AOC 6 is located. Soil sampling was completed at those borings to more broadly characterize soil quality associated with the former AST as well as to determine soil conditions in areas that were historically used for raw material and finished product handling and storage. Soil samples were collected from 1.5-2.0 feet at each location, as well as from 3.5-4.0' and 4.0-4.5' at B604. All of these soil samples were analyzed for PPM and barium, with the samples from B604 also analyzed for SVOCs. Other than negligible concentrations of bis(2-ethylhexyl phthalate), SVOCs were not detected. Appendix B provides the specific detected metals concentrations.

7. AOC 7 – Former Chrysophenine Plant

AOC 7 is the location of the former chrysophenine plant evident on the 1937 Sanborn Fire Insurance map. This structure was located along the southern property boundary, partially beneath the current locations of the machine and carpentry shop and the storage building to the east. ENVIRON completed three soil borings to evaluate soil conditions at the former chrysophenine plant, including borings B701 and B702 in August 2006, and boring B703 in October 2006. The first two borings were advanced to 4 feet, and soil samples collected from 0.5-1.0' and from a six-inch interval between 1 and 2 feet. These

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samples were analyzed for TCL VOCs, PPM and barium. One soil sample was collected from Boring B703 (0.5-1.0') for PPM and barium analysis. VOCs were not detected in this AOC. Appendix B provides the specific detected metals concentrations.

8. AOC 8 – Former Southern Material Storage Area

AOC 8 is the location of the former southern material storage area, located east of current machine and carpentry shop. One boring, B801, was advanced in that area in August 2006. Two soil samples were collected from that boring from 0.5-1.0' and 2.0-2.5 feet for PPM and barium analysis. In addition, the deeper soil sample was also analyzed for TCL VOCs. No VOCs were detected. Appendix B provides the specific detected metals concentrations.

9. AOC 9 – Current Drum and Bag Storage Area

AOC 9 is the location of the current drum and bag storage area, including the rainwater and spill containment sump. A portion of this area also includes the location of two former caustic aboveground storage tanks. A total of five soil borings (B901 through B905) were completed in this AOC in August 2006. Two soil samples were collected from each boring, generally from the soil surface and a deeper interval between 2 and 3 feet below grade. These soil samples were analyzed for TCL VOCs, PPM and barium. VOCs were generally not detected, but where present, were identified at *de minimis* part-per-billion concentrations. Appendix B provides the specific detected metals concentrations.

10. AOC 10

AOC 10 consists of the wastewater conveyance components specifically associated with the six Blue Wing filter presses (Presses 1 through 6). As noted above, wastewater is mechanically removed from pigment slurries at these filter presses. The wastewater at the Blue Wing filter presses drains to a concrete floor (some epoxy-coated), with areas of overlying acid-resistant brick, and to trench drains located in front/north of the presses as well as behind/south of the units. These drains direct the wastewater to the on-Site wastewater treatment plant.

As part of its annual maintenance program at the facility, completed over a two-week period each July, Sun cleans, inspects and, if necessary, repairs the production-area floors, including floors beneath the filter presses. The goal of this annual maintenance program is to identify and mitigate any areas where the flooring may have become worn or damaged during the prior year. All damaged and/or worn areas, including floors beneath the filter presses, are then repaired (consistent with OSHA requirements [e.g., to address potential trip hazards] given that employees work in the areas beneath the presses). During each maintenance shutdown, most recently in July 2007, Sun Chemical also completes a thorough

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cleaning of the floors using high-pressure water.

Based on ENVIRON's most recent inspection of flooring in the Blue Wing press area, there had been surficial wear to the concrete and acid brick flooring, including spalling and cracking. Physical inspections of those areas reveal that all wear appears to be superficial, not penetrating the floor. These observations were consistent with information provided by Sun Chemical indicating that there has been no significant damage identified to the flooring and trenches associated with the Blue Wing filter presses over time. As such, because there was no evidence of deterioration such that would enable releases of pigment liquids to the underlying soil, sampling was not performed at this AOC.

11. AOC 11

AOC 11 consists of the wastewater conveyance components specifically associated with the ten Red Wing filter presses (Presses 10, 51, and 54 through 61). Pigment slurries generated in the Red Wing are dewatered in these filter presses in the same manner as described above for the Blue Wing. The floor inspection processes were the same as described above for AOC 10 and, as with the Blue Wing, AOC 10, no significant damage to the flooring and trenches has been identified in the Red Wing filter press area and thus, any release of pigment liquids to the underlying soil was unlikely. Consequently, sampling was not performed at this AOC.

12. AOC 12 – Two Former 25,000-Gallon No. 6 Fuel Oil Underground Storage Tanks

AOC 12 is the location of the two former 25,000-gallon No. 6 fuel oil USTs near southeastern property corner. These tanks, and adjacent soils, were removed in 1993. Post-excavation soil samples were collected and petroleum constituents were not detected at levels of concern. Based on those analytical results, NYSDEC approved no further action (NFA) for the tank closures in 1994. In light of the prior soil findings and the Department's 1994 NFA approval, soil sampling was not necessary in this AOC. However, as discussed below under "AOC13" and "Ground Water", soil and ground water sampling was completed immediately southeast and downgradient of this AOC for other purposes. That sampling did not identify UST-related contamination, supporting the prior NFA approval.

13. AOC 13 – Former Coal Pile

AOC 13 is the location of the former coal pile located at the southeastern property corner. This pile is evident on Sanborn Fire Insurance maps dating from 1917 and 1937, and was associated with the coal-fired boilers shown on those maps. The location of this pile largely coincides with footprint of AOC 12, the two former 25,000-gallon No. 6 fuel oil USTs. As discussed above under "AOC 12", these tanks and adjacent soils were remediated in 1993, and the excavation backfilled with certified clean fill. Given that potential impacts,

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if any, associated with former coal storage would be present in surface soils, the UST remedial action described above in AOC 12, would have adequately addressed any coal pile-related contamination existing within the excavation boundary. Accordingly, ENVIRON targeted only one location, beyond the boundary of the UST excavation, for soil sampling to evaluate soil quality within the former coal pile storage area.

Boring B1301 was completed within the footprint of the former coal pile. Two soil samples were obtained from this boring (1.5-2.0', the interval below crushed stone fill underlying the asphalt pavement, and 3.5-4.0') and analyzed for TCL VOCs and SVOCS, PPMs and barium. VOCs were not detected, and while certain SVOCs were identified in both samples, the reported concentrations, with only one exception, were less than 1 ppm. Appendix B provides the specific detected metals and SVOC concentrations.

14. AOC 14 – Former Caustic Release Area

AOC 14 is the on-Site portion of the former caustic release area. As discussed above, available documentation regarding that release indicates that the regulatory authorities were satisfied with the remedial action undertaken to address the release. However, sampling related to contemporaneous excavation of soils in this area identified other constituents (i.e., lead, bis(2-ethylhexyl)phthalate and PCBs) most likely related to other industrial activities. Additional soil sampling was completed to evaluate the nature and extent of those and other constituents. Specifically, ENVIRON completed four soil borings in August 2006 (B1401 through B1404). Soil samples were collected from each boring for TCL SVOC, PCB, PPM and barium analyses. These samples were obtained from the soil surface, with a sample also obtained an underlying six-inch interval at each boring, except B1403. ENVIRON also completed seven borings in October 2006 (B1405 through B1411). As with the initial borings, soil samples were collected from two depths, including the soil surface and a deeper interval between 3.5 and 4.0 feet. These samples were analyzed for SVOCs, PCBs, PPMs and barium. In addition, the soil samples from B1407, the westernmost of the AOC 14 sampling points, were also analyzed for VOCs to provide broader Site coverage for VOC analyses.

Only trace VOC concentrations (part-per-billion- level) were detected at B1407. Analytical results from these locations indicated that SVOCs were generally not detected, but where present, were at relatively minor concentrations of less than 1 ppm. Concentrations of phthalates exceeding 1 ppm were identified at borings B1403, B1407 and B1408. PAH concentrations above 1 ppm were also reported at B1407 and B1408. PCBs were also identified in soils at borings B1401, B1402, B1403, B1408 and B1410. Appendix B provides the specific detected metals, SVOC and PCB concentrations.

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15. AOC 15 – Current Aboveground Acid Storage Tanks

AOC 15 is the location of the current acid ASTs adjacent to the western end of the Blue Wing. Based on information indicating that during a prior excavation related to the installation of these tanks, discolored soils were observed, two soil borings, B1501 and B1502, were completed in this area in October 2006. Two soil samples were obtained from each boring and analyzed for PPMs and barium. Appendix B provides the specific detected metals concentrations.

16. AOC 16 – Wastewater System

AOC 16 is the underground piping associated with the facility wastewater system, this system is distinct from the drainage system components specifically associated with the filter presses (i.e., features discussed under AOCs 10 and 11). Based on discussions with Sun Chemical regarding the wastewater system, ENVIRON identified certain areas where given prior underground wastewater line repairs or replacement, there were concerns regarding potential leakage. Three such areas were identified and were targeted for sampling to evaluate soil conditions. That sampling consisted of completing six soil borings (B1601, and B1603 through B1607). These areas, and the borings completed therein, included: (1) the original main wastewater discharge line located north of the Red Wing (B1601); (2) trenches in the refrigeration area where water seeped into the underlying basement (B1603, B1606 and B1607); and (3) wastewater lines north of Presses 60 and 61 on the western end of the Red Wing (B1604 and B1605).

At each of these locations, soil samples were collected from two depths, typically 2.0-2.5' (the approximate depth of piping inverts) and 3.5-4.0', for PPM and barium analysis. Based on observations made of the soil cores, ENVIRON did not note evidence of wastewater leakage (e.g., stained soils). Appendix B provides the specific detected metals concentrations.

17. AOC 17 – Current Aboveground Fuel Oil Storage Tank

AOC 17 is the location of the current fuel oil AST installed in 1993. This tank is contained within a secondary containment enclosure. Sun Chemical is not aware of any releases or other issues of potential concern associated with this AST. Accordingly, soil sampling was not performed at this AOC.

However, as a means to confirm the integrity of the secondary containment enclosure, MW4 was installed directly southeast of this AOC to conduct ground water sampling. The results of that sampling, discussed below in Section III.D., indicated that petroleum constituents were not present in ground water at MW4 and therefore there is no evidence of releases from the tank.

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D. Ground Water

A total of eight monitoring wells were installed at the Site. Initially, as part of the August 2006 sampling program, assuming, based on the Site topography and location of nearby surface water bodies to which shallow ground water at the Site likely discharges, a southeasterly ground water flow direction, ENVIRON installed wells MWs 1 through 5, including MWs 1 and 5 at the presumed upgradient and downgradient corners of the Site, respectively, and MWs 2, 3 and 4 near the main building. These wells were completed to monitor the first saturated zone, which given the Site topography was encountered at depths ranging from approximately 10 feet at MW5 to 35 feet at MW3.

Ground water samples were collected from MWs 1, 4 and 5 for TCL VOC, PPM and barium analyses on September 11, 2006. There was not enough water present in MWs 2 and 3 to enable sampling at that time. Analytical results from this sampling round identified scattered detections of VOCs, as shown in Appendix B. These VOCs were primarily chlorinated VOCs (CVOCs), present both at upgradient well MW1 and at downgradient well MW4. No VOCs were detected at MW5. Metals were typically detected at only trace concentrations, as shown on Table 2 in Appendix B.

Based on these data, ENVIRON installed three additional wells, including MWs 6 and 7 at the southwestern and northeastern corners of the Site, respectively, to better understand ground water quality upgradient of the Site (MW6) and at the downgradient corner of the Site where a well had not yet been installed (MW7). In addition, because MW5 was screened above a peat layer and could monitor a perched water interval, ENVIRON installed a deeper well, MW5D at this location. That deeper well was installed as a double-cased well, and was drilled with mud rotary drilling techniques.

An additional ground water sampling round was completed on October 17, 2006 and including sampling at all eight wells for TCL VOCs, PPMs and barium. Only one metal, nickel, was present above Part 703 standards and at only one well, MW3. VOCs were not detected at MW6 and 7 but were identified at the other wells. The specific constituents included benzene and certain CVOCs at wells MWs 3 and 4, with lesser CVOC concentrations noted in MW5D. Because the CVOCs detected at the highest concentrations in the August and October 2006 samples were dichlorinated ethanes and ethenes, with the parent VOCs (e.g., trichloroethylene) largely degraded, it is likely that any release that may have resulted in the concentrations was not a recent event. As noted above, there was a Site-wide absence of any material VOC concentrations in soil, including at these wells, indicating that a residual soil source is likely not present. Table 2 in Appendix B provides summarized ground water quality data.

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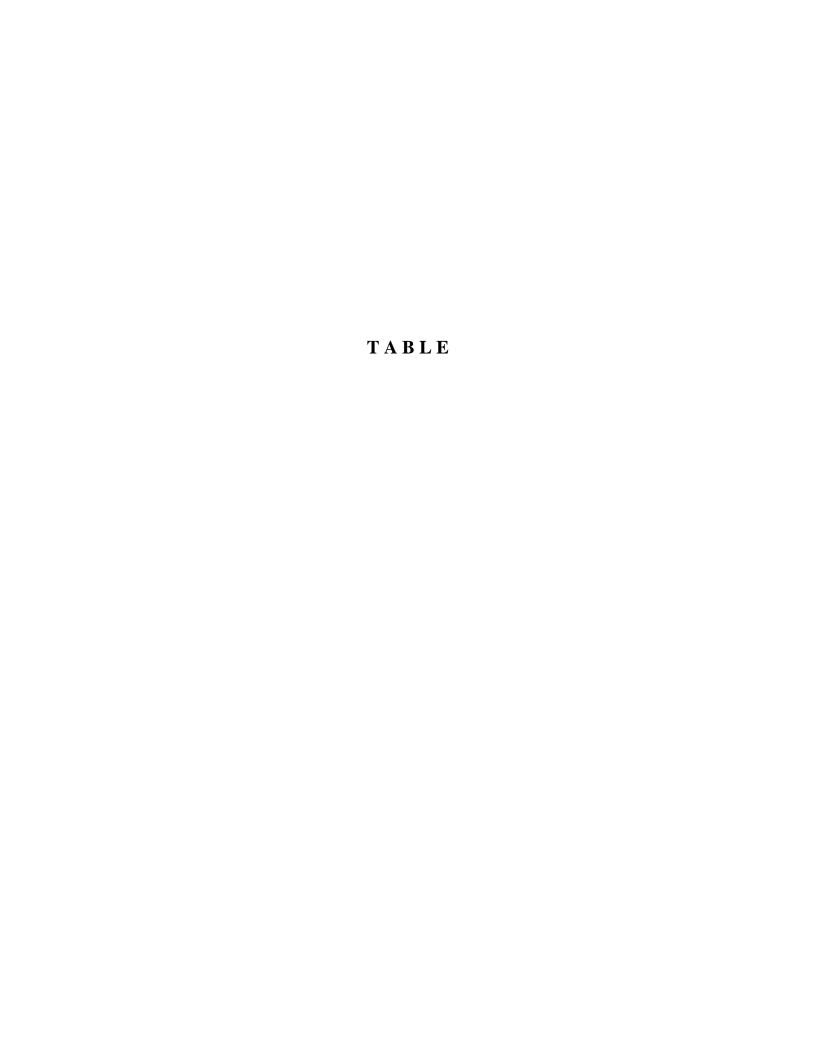
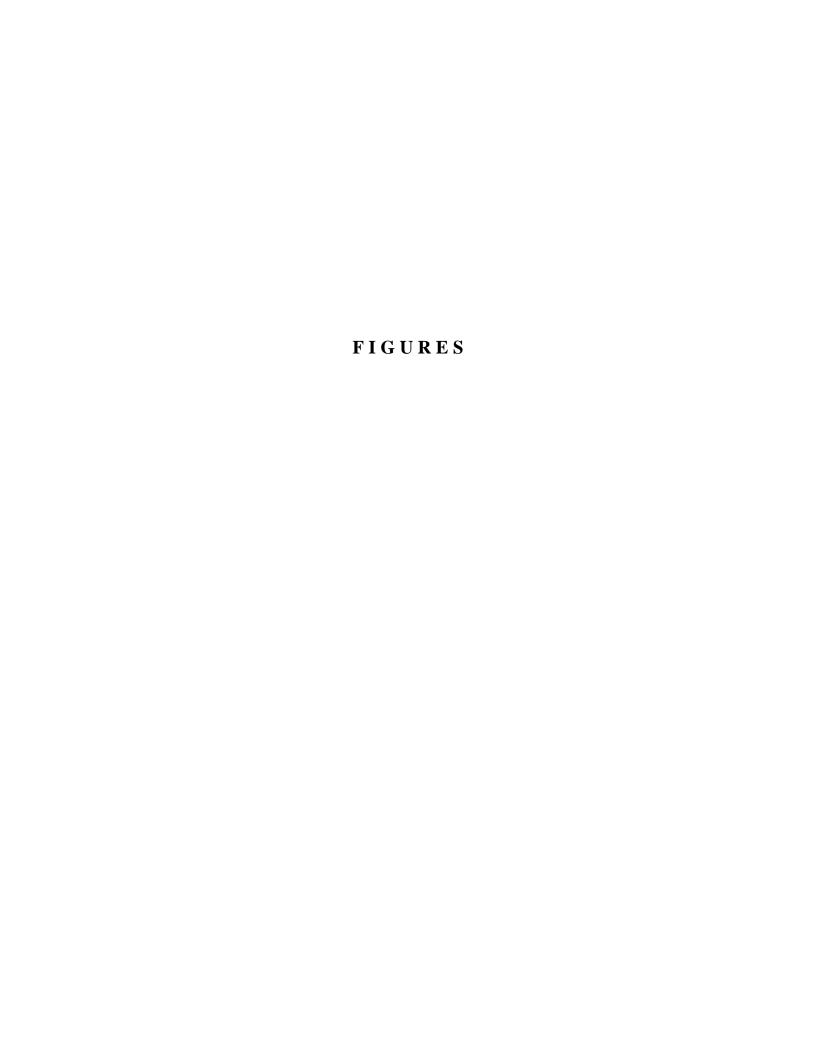
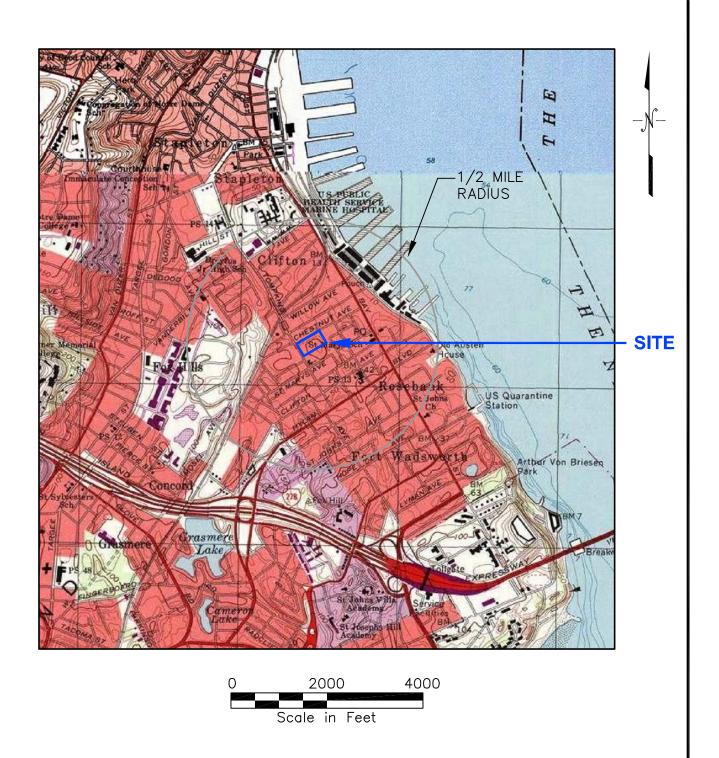


Table 1					
Areas of Concern					
Sun Chemical Corporation, Staten Island, New York					
AOC	Rationale and Potential Concerns				
AOC 1: Former shooting gallery	Potential residual metals impacts from ammunition (e.g., lead shot).				
AOC 2: Former railroad tracks at eastern parking area	Potential impacts from loading and unloading operations, and general impacts associated with rail line activity.				
AOC 3: Former blue pulp aboveground storage tank south of Blue Wing	Potential impacts from former liquid pigment storage.				
AOC 4: Former bichromate aboveground storage tank south of Blue Wing	Potential impacts from former lead chromate pigment storage.				
AOC 5: Former acid aboveground storage tank south of Blue Wing	Potential impacts from former acid storage.				
AOC 6: Former acid aboveground storage tanks south of Red Wing	Potential impacts from former acid storage.				
AOC 7: Former chrysophenine plant	Potential impacts from the former production of the pigment chrysophenine.				
AOC 8: Former southern material storage area, located east of current machine and carpentry shop	Potential impacts from the former storage of raw materials and finished pigments.				
AOC 9: Drum and bag storage area, including rainwater and spill containment sump. A portion of this area includes the location of two former caustic aboveground storage tanks.	Potential impacts from any releases of finished and/or off- spec pigment materials stored outside, and from any releases associated with the former caustic tank.				
AOC 10: Underground wastewater conveyance components associated with the Blue Wing filter presses	Potential impacts to subsurface soils from any leaks of pigment-related materials from the wastewater system.				
AOC 11: Underground wastewater conveyance components associated with the Red Wing filter presses	Potential impacts to subsurface soils from any leaks of pigment-related materials from the wastewater system.				
AOC 12: Two former 25,000-gallon No. 6 fuel oil USTs near southeastern property corner	The NYSDEC approved no further action in 1994 for the tank removals such that additional sampling in this AOC was not considered necessary.				
AOC 13: Former coal pile located at the southeastern property corner	Potential residual impacts from former coal storage, including PAHs and metals.				
AOC 14: Former caustic release area (on-site only)	Further evaluation and delineation of concentrations of metals, PAHs and PCBs identified in soils following remediation of the 1988 incident.				
AOC 15: Current aboveground acid storage tanks	Evaluation of discolored soils evident during excavation to install pads for these tanks				
AOC 16: Wastewater system	Potential leakage in portions of the system.				
AOC 17: Current aboveground fuel oil storage tank	Confirmation that the secondary containment at this tank has effectively precluded any petroleum impacts in the vicinity.				





 $\underline{\text{SOURCE:}}$ TOPO! MAP PRINTED ON 08/29/07 FROM "NORTHEASTERN.TPO" USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, THE NARROWS, NY-NJ. MAP VERSION 1998. MAP CURRENT AS OF 1998.

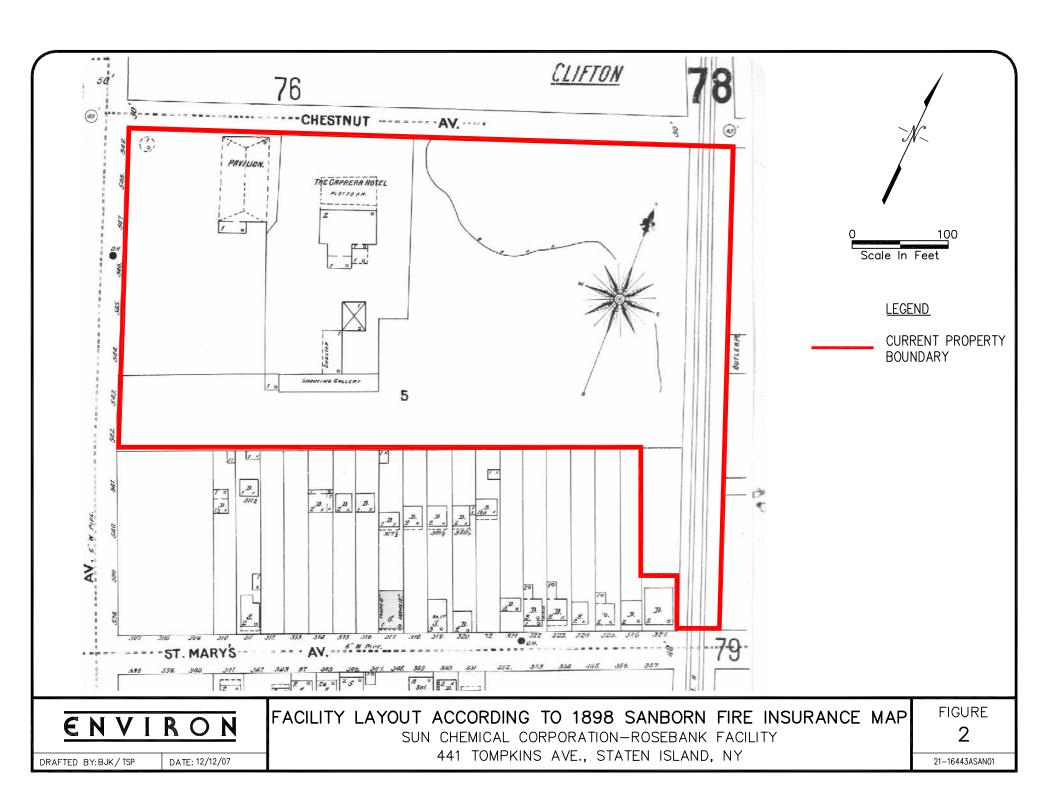
ENVIRON

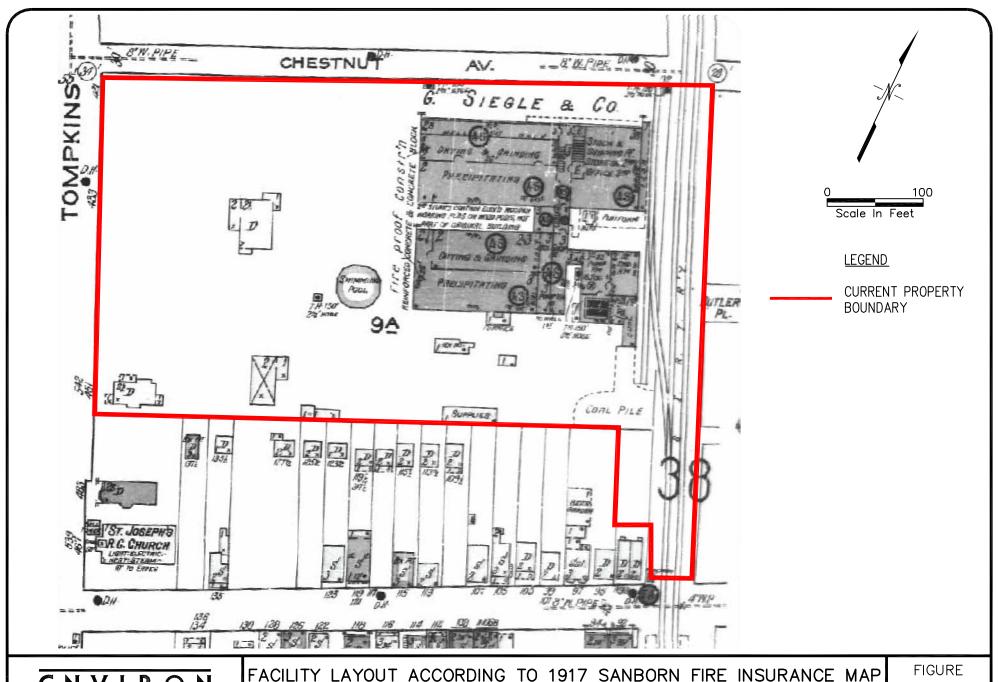
SITE LOCATION MAP
SUN CHEMICAL CORPORATION
441 TOMPKINS AVENUE
STATEN ISLAND, NEW YORK

FIGURE

1

DRAFTED BY: CAD/TSP DATE: 12/4/07 STATEN ISLAND, NEW YORK 21-16443AJ01





DRAFTED BY:BJK/TSP

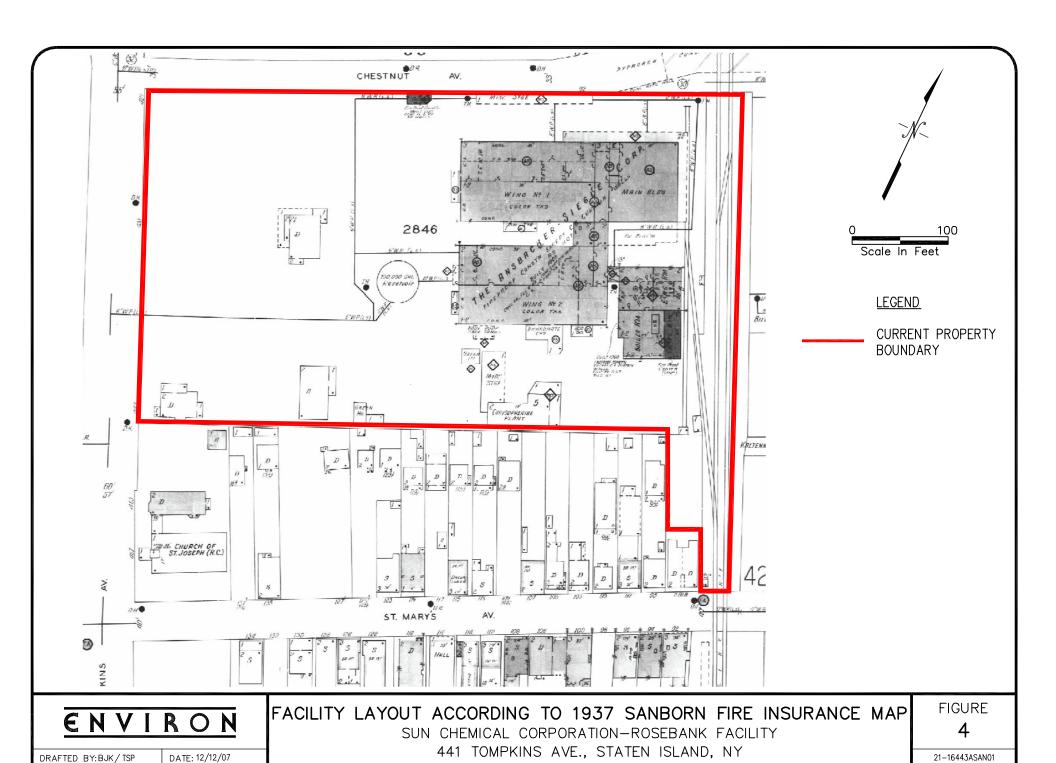
DATE: 12/12/07

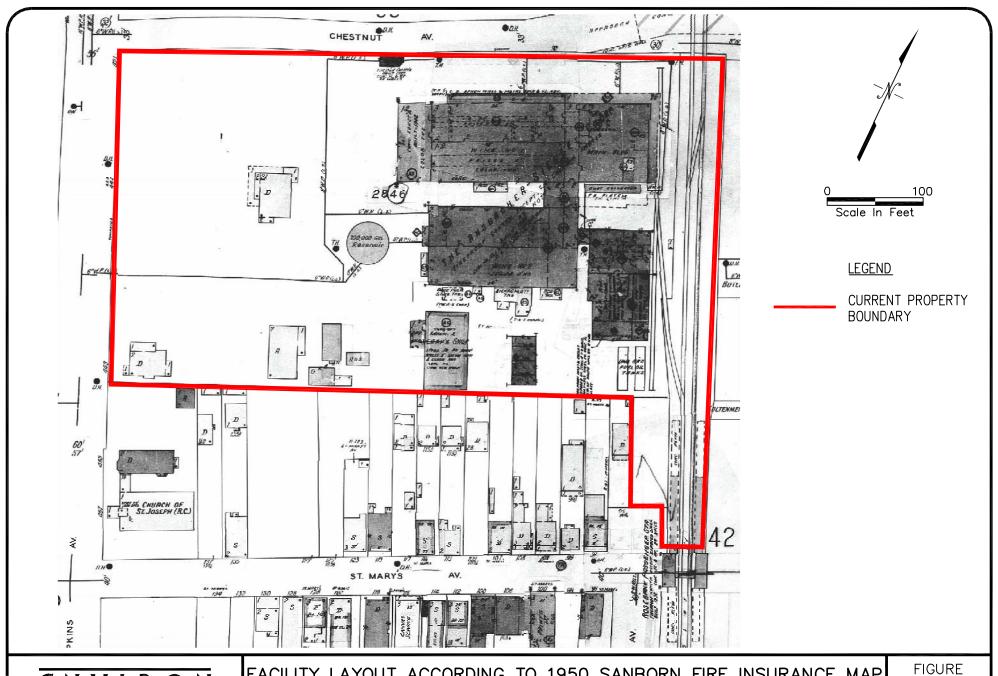
FACILITY LAYOUT ACCORDING TO 1917 SANBORN FIRE INSURANCE MAP

SUN CHEMICAL CORPORATION-ROSEBANK FACILITY 441 TOMPKINS AVE., STATEN ISLAND, NY

3

21-16443ASAN01





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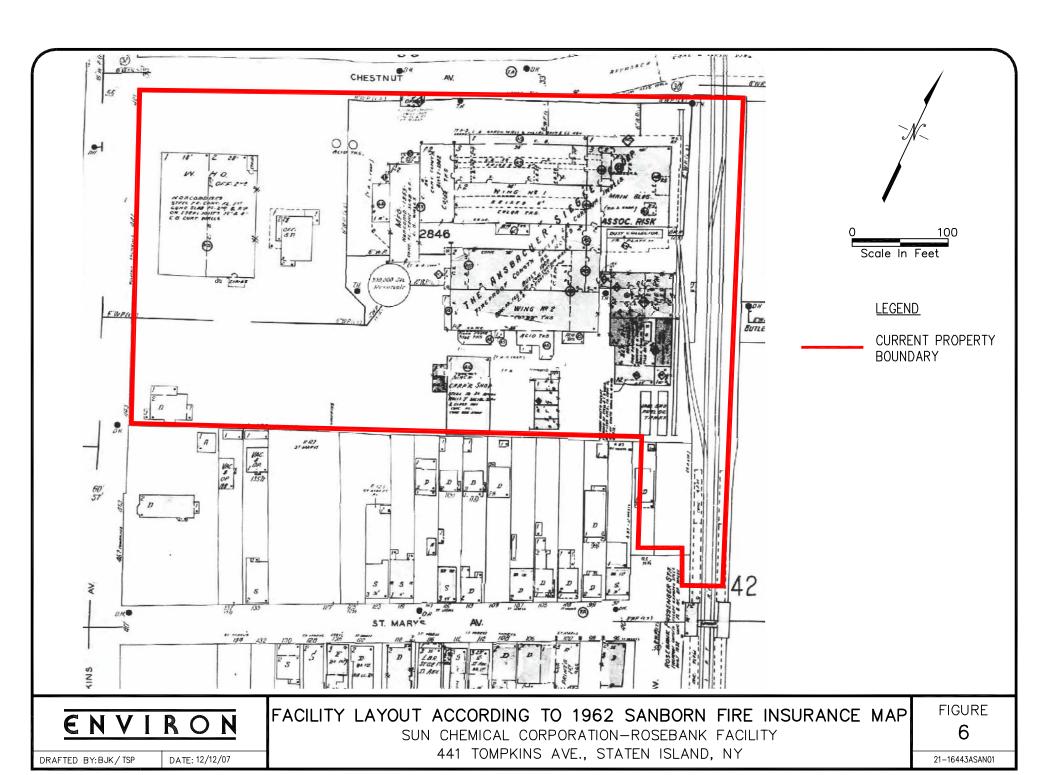
DATE: 12/12/07

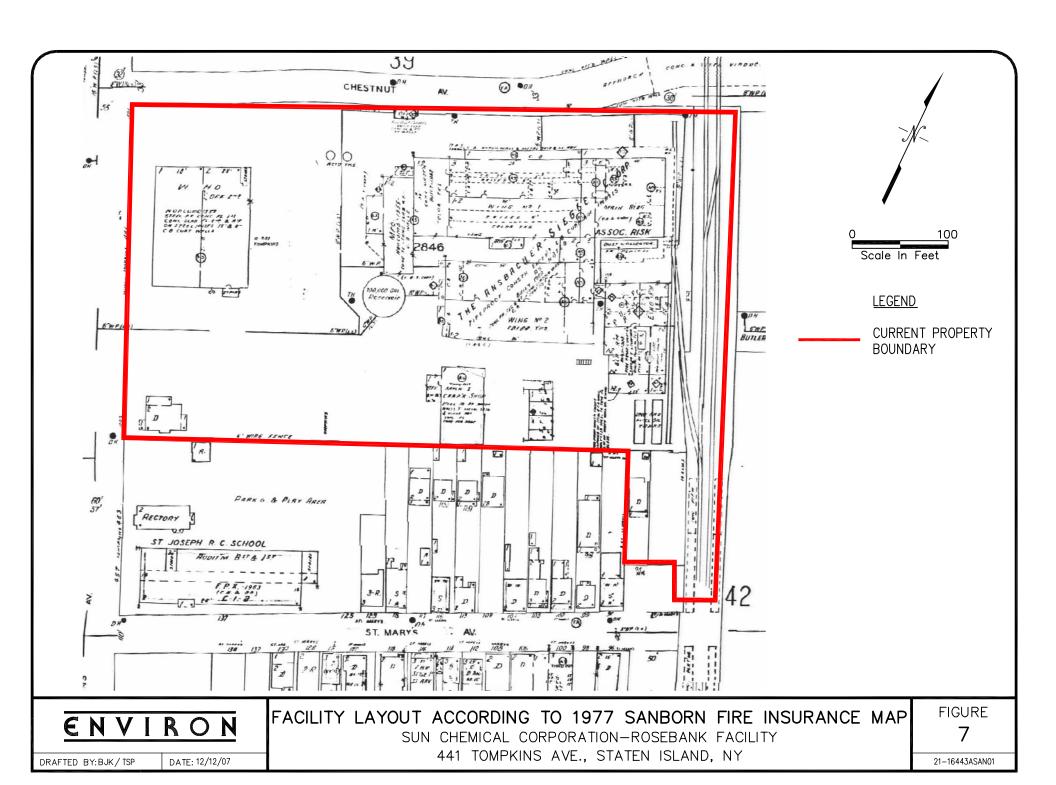
FACILITY LAYOUT ACCORDING TO 1950 SANBORN FIRE INSURANCE MAP

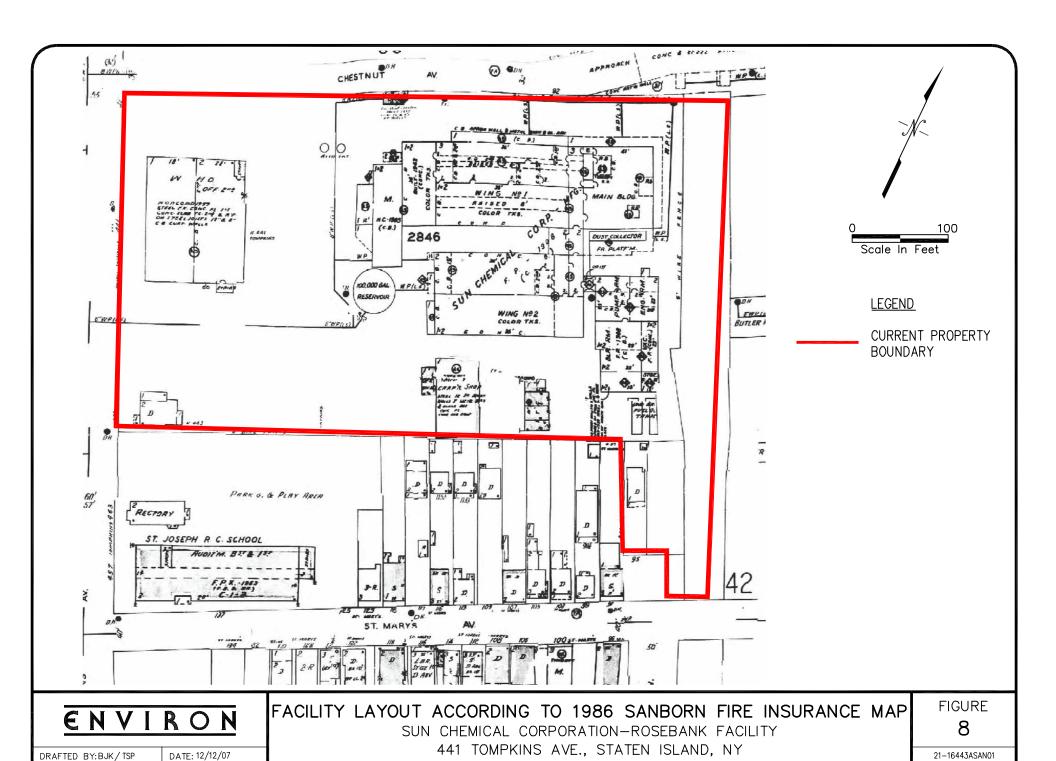
SUN CHEMICAL CORPORATION-ROSEBANK FACILITY 441 TOMPKINS AVE., STATEN ISLAND, NY

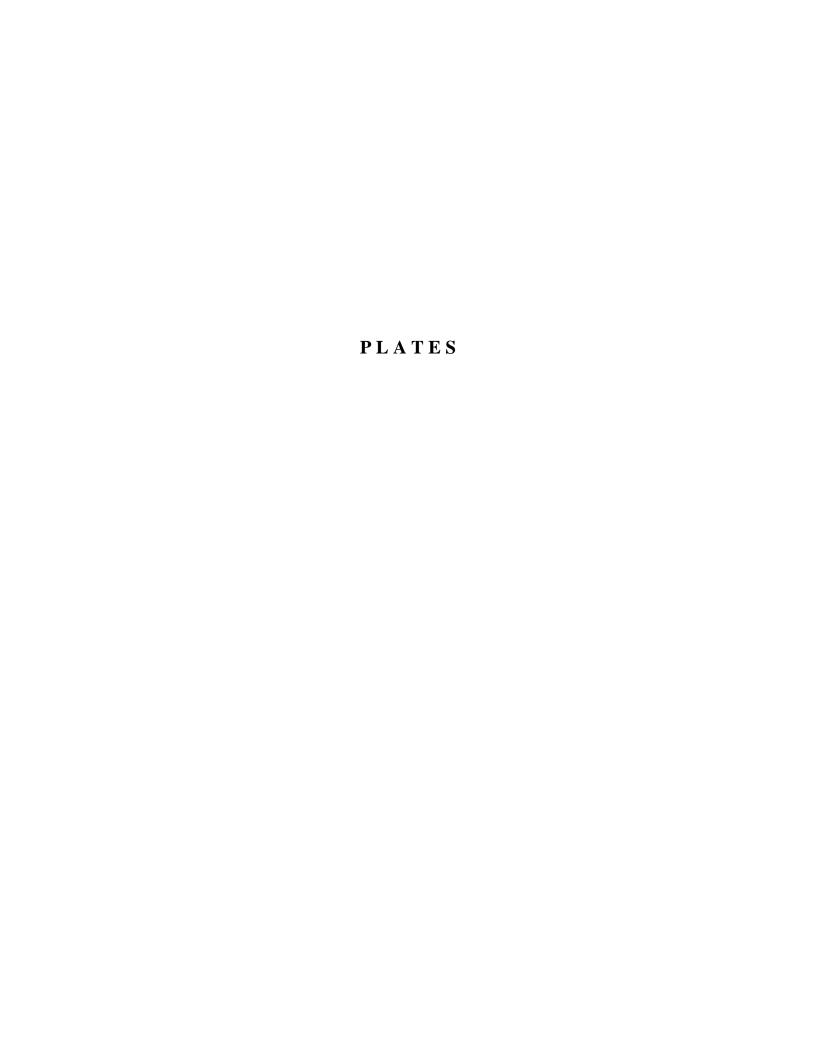
5

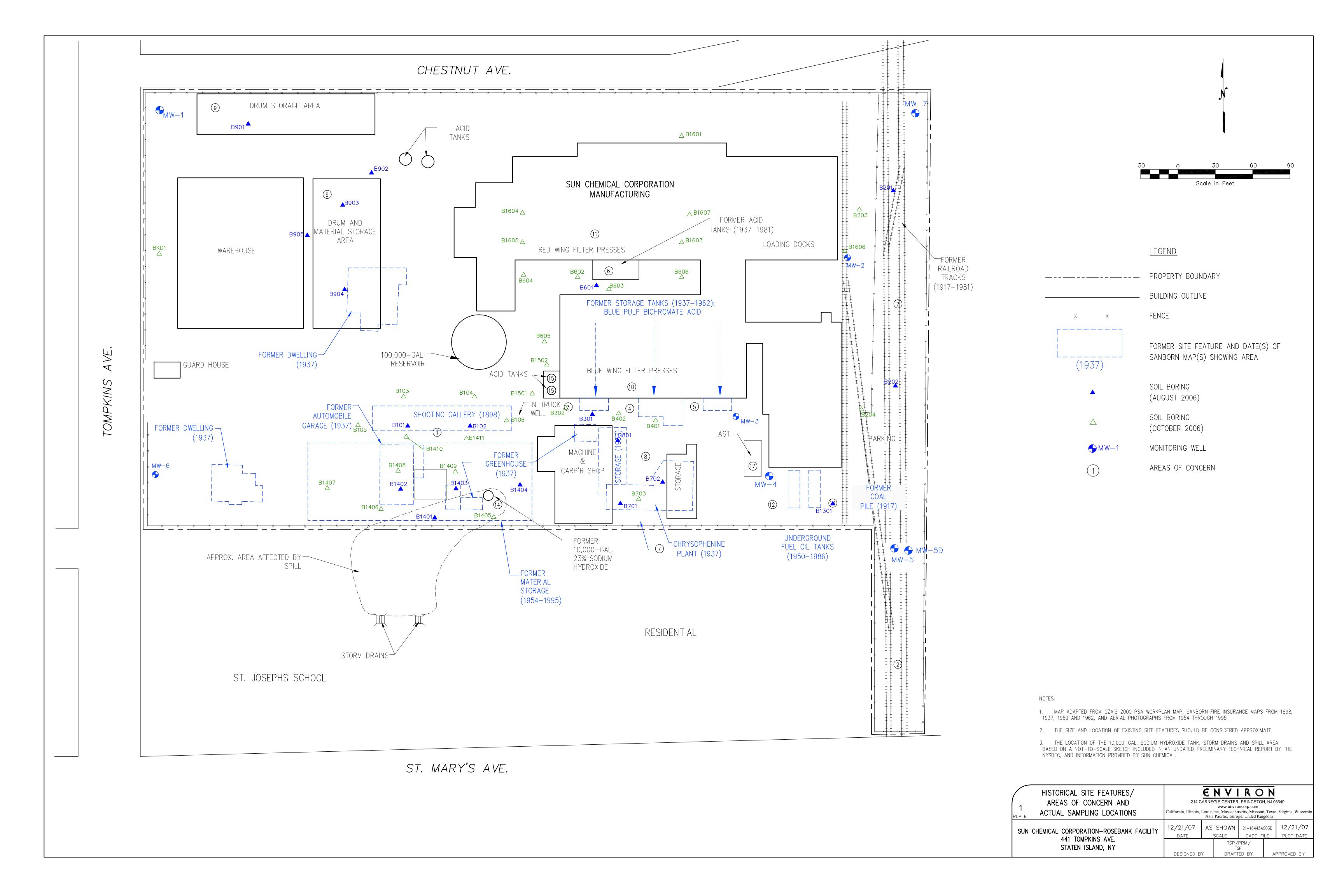
21-16443ASAN01











APPENDIXA

Soil Boring Logs

LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N BORING DIA BORING DEI	DATE: 8/28/06 START TIME: 1000 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch BORING DEPTH 8 Feet ORGANIC VAPOR PID (10.8 eV)				ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 1: Shooting Range	
EQUIPMENT			112 (10.0			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0-4 4-8	NA NA	3.3	ND, ND, 9.7, 35.5, 94.6, 16.6 7.5, 2.3, ND	-B101-SS01 (0.5-1.0') for VOCs, PPMs and barium. -B101-SS02 (2.5-3.0') for VOCs, PPMs and barium. -B101-SS03 (3.5-4.0') for VOCs, PPMs and barium.	0.5 mo Co 3.5 and	0 – 0.5 Asphalt and sub-base. 1 – 3.5 Brown sandy silt with little gravel, sist with petroleum hydrocarbon-like odor. Increte from 1.0-1.5'. 1 – 4.0 Red-brown sandy silt with little gravel d brick fragments; moist. 2 – 8.0 Red silt with little to some sand; moist wet with stiff consistency.
COMMENTS	:					

BORING #: DATE: START TIME: LOGGED BY: DRILLING CO: SC DRILLER: RIG: SAMPLING METHOD: BORING DIA:			B102 8/28/0 1117 Trevor Ton GGS Environmental J. Rau Geoprobe Truck Direct-P 2-Incl	npkins I Services, Inc. sa k-Mounted	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 1: Shooting Range
BORING DEI			4 Fee		
ORGANIC V. EQUIPMENT			PID (10.8	S eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.0	ND	-B102-SS01 (0.5-1.0') for VOCs, PPMs and barium. -B102-SS02 (1.5-2.0') for VOCs, PPMs and barium. -B102-SS03 (3.5-4.0') for VOCs, PPMs and barium.	 0.0 – 0.5 Asphalt and sub-base. 0.5 – 1.0 Light brown gravel and sand with little cinders; moist. 1.0 – 1.5 Brown silt with little sand and gravel; moist with stiff consistency. 1.5 – 3.8 Red-brown silt with some sand and little brick and gravel and trace cinders; moist with stiff consistency and low plasticity. 3.8 – 4.0 Brown silt with little sand and gravel – woody organics and 3.8'; moist with soft consistency.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING CO	:		B103 10/4/06 1442 Trevor Tom TPI Environme	6 npkins	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A		
DRILLER:			B. Moria	arty			
RIG:			Geoprobe Truck		\dashv	COMMENTS:	
SAMPLING N			Direct-Pu		-	AOC 1: Shooting Range	
BORING DIA	.:		2-Inch		-		
BORING DEF	TH		2 Feet	1			
ORGANIC VA EQUIPMENT			PID (10.8	eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION	
0 – 2	NA	1.5	ND	- <u>B103-SS01</u> (1.5-2.0') for PPMs and barium.	0.5 grav	 - 0.5 Asphalt and sub-base. - 2.0 Dark brown to brown silt with little vel and sand; moist. fusal at 2.0'. 	
COMMENTS	:						

BORING #:			B104		ENVIRON
DATE:			10/4/0	6	BORING LOG
START TIME	: :		1420		PROJECT: Sun Chemical: Rosebank
LOGGED BY	:		Trevor Ton	npkins	Staten Island, New York
DRILLING C	O:		TPI Environme	ental Inc.	CASE # 21-16443A
DRILLER:			B. Moria	arty	
RIG:			Geoprobe Truck	x-Mounted	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	AOC 1: Shooting Range
BORING DIA	.:		2-Inch	1	
BORING DEF	TH		8 Feet	i.	
ORGANIC VA EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	4.0	ND ND	-B104-SS01 (3.5-4.0') for PPMs and barium. -B104-SS02 (6.0-6.5') for PPMs and barium.	 0.0 – 0.5 Asphalt and sub-base. 0.5 – 0.7 Brown silt with little sand and gravel; moist. 0.7 – 1.0 Concrete fragments. 1.0 – 4.0 Red-brown silt with some clay, little sand and trace brick; moist with medium stiff consistency and low plasticity. 4.0 – 7.8 Red-brown silty clay with minor sand stringers throughout; medium soft consistency and medium plasticity. 7.8 – 8.0 Red-brown sand with little silt; moist.

BORING #:			B105		ENVIRON		
DATE:			10/4/0	6	BORING LOG		
START TIME	3:		1035 PROJECT: Sun Chemical: Rosebank				
LOGGED BY	:		Trevor Ton	npkins	Staten Island, New York		
DRILLING C	O:		TPI Environme	ental Inc.	CASE # 21-16443A		
DRILLER:			B. Moria	arty			
RIG:			Geoprobe Truck	x-Mounted	COMMENTS:		
SAMPLING N	METHOD:		Direct-P	ush	AOC 1: Shooting Range		
BORING DIA	λ:		2-Incl	1			
BORING DEF	PTH		8 Fee	t			
ORGANIC VA EQUIPMENT			PID (10.8	eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION		

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
				. ,	DESCRIPTION 0.0 – 0.6 Asphalt and tar-like substance. 0.6 – 1.5 Dark gray sand with some silt with little cinders and rock fragments from 1.0' to 1.3'; moist with petroleum hydrocarbon-like odor. 1.5 – 3.5 Brown silt with trace organics and strong petroleum hydrocarbon-like odor; moist. 3.5 – 4.0 Red-brown silt; moist with medium soft consistency and low plasticity. 4.0 – 5.5 Brown sandy clay with little gravel; very moist to wet with soft consistency and high
					plasticity. Petroleum hydrocarbon-like odor. 5.5 – 7.5 Red-brown silt with medium stiff consistency and high plasticity, moist with slight petroleum hydrocarbon-like odor. 7.5 – 8.0 Brown silt and little sand; wet.

BORING #:			B106		ENVIRON	
DATE:			10/4/0	6	BORING LOG	
START TIME	: :		PROJECT: Sun Chemical: Rosebanl			
LOGGED BY	:		Trevor Tom	pkins	Staten Island, New York	
DRILLING C	O:		TPI Environme	ental Inc.	CASE # 21-16443A	
DRILLER:			B. Moria	arty		
RIG:			Geoprobe Truck-Mounted COMMENTS:			
SAMPLING N	METHOD:		Direct-P	ısh	AOC 1: Shooting Range	
BORING DIA	:		2-Inch	I		
BORING DEF	TH		8 Feet			
ORGANIC VA			PID (10.8	eV)		
DEPTH	BLOW	RECOVERY	ORGANIC VAPORS	SAMPLE(S)		

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.6	ND	- <u>B106-SS01</u> (1.5-2.0') for VOCs, PPMs, barium and	0.0 – 0.7 Asphalt underlain by tar-like substance. 0.7 – 1.5 Soft/uncured concrete with angular
4 – 8	NA	2.8	ND	SVOCs. - B106-SS02 (3.5-4.0') for VOCs, PPMs, barium and SVOCs. -B106-SS03 (6.0 to 6.5) for VOCs, PPMs, barium and SVOCs.	gravel or crushed concrete for base. 1.5 – 4.0 Red Silt with very fine sand. Stiff consistency and low plasticity, sand zones from 3.0 to 3.2' and 3.5 to 3.7'; lower zone is wet. 4.0 – 8.0 Red-brown clay with soft to very soft consistency and high plasticity. High water content.

BORING #: DATE: START TIME LOGGED BY DRILLING CONTILLER:	:	S	B201 8/30/0 0829 Trevor Tom GGS Environmental J. Raus	npkins Services, Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A	
RIG: SAMPLING M BORING DIA BORING DEI ORGANIC V EQUIPMENT	a: PTH APOR		J. Rausa Geoprobe Truck-Mounted COMMENTS: Direct-Push AOC 2: Railroad Tracks 2-Inch 4 Feet PID (10.8 eV)			
DEPTH (feet) 0 – 2.5	BLOW COUNTS NA	RECOVERY (feet) 2.3	ORGANIC VAPORS (PPMs) ND	SAMPLE(S) DESIGNATION -B201-SS01 (0.2-0.7') for PPMs and barium. -B201-SS02 (1.5-2.0') for PPMs and barium.	DESCRIPTION 0.0 – 0.2 Asphalt and sub-base. 0.2 – 0.8 Dark brown silt, sand and gravel with little cinders; moist. 0.8 – 1.0 Concrete fragments. 1.0 – 2.3 Brown silt with some sand and little fine gravel – trace brick – moist with medium stiff consistency and no plasticity. 2.3 – 2.5 Concrete. Refusal at 2.5'.	
COMMENTS	:					

BORING #: B202 DATE: 8/30/06 START TIME: 0850 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 2: Railroad Tracks			
BORING DIA	. :		2-Inch	1	1130 2. 14411044	
BORING DEF ORGANIC VA EQUIPMENT	APOR		4 Feet PID (10.8 eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION	
0 – 4	NA	2.8	ND	-B202-SS01 (0.2-0.7') for PPMs and barium. -B202-SS02 & B202-SS02D (1.5-2.0') for PPMs and barium. -B202-SS03 (3.5-4.0') for PPMs and barium.	 0.0 - 0.2 Asphalt and sub-base. 0.2 - 0.5 Red-brown silt with some sand and little gravel; moist. 0.5 - 0.8 Dark gray silt with some sand and cinders. 0.8 - 0.9 Concrete. 0.9 - 1.5 Weathered schist. 1.5 - 4.0 Red silt with some sand and gravel - concrete from 3.2-3.5'; moist with stiff consistency and low plasticity. 	
COMMENTS	:					

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER:	E: 10/5/06 T TIME: 1521 GED BY: Trevor Tompkins, Megan Utley LING CO: TPI Environmental Inc.			BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A	
RIG:			Geoprobe Truck		COMMENTS:
SAMPLING N BORING DIA			Direct-Programme 2-Inch		AOC 2 – Former Railroad Tracks at Eastern Parking Lot
BORING DEI	PTH		4 Feet	t	
ORGANIC V. EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.0	ND	-B203-SS01 (0.5-1.0') for PPMs, barium and SVOCs. -B203-SS02 (1.5-2.0') for PPMs, barium and SVOCs.	0.0 – 0.5 Asphalt and sub-base. 0.5 – 1.5 Dark gray sand with little silt, cinders, and gravel; moist. 1.5 – 4.0 Brown to red-brown silt with some clay, little sand, gravel, and cinders.
COMMENTS	:				

BORING #: DATE: START TIME: LOGGED BY: DRILLING CO: DRILLER:			B204 10/6/0 0821 Trevor Tompkins, TPI Environme B. Moria	Megan Utley ental Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A	
RIG: SAMPLING M BORING DIA BORING DEF ORGANIC VA EQUIPMENT	.: PTH APOR		Geoprobe Truck Direct-Pr 2-Inch 4 Feet PID (10.8	ush n	COMMENTS: AOC 2 – Former Railroad Tracks at Parking Lot	Eastern
DEPTH (feet) $0-4$	BLOW COUNTS NA	RECOVERY (feet) 3.5	ORGANIC VAPORS (PPMs) ND	SAMPLE(S) DESIGNATION -B204-SS01 (1.0-1.5') for PPMs, barium and SVOCs. -B204-SS02 (2.0-2.5') for PPMs, barium and SVOCs. -B204-SS03 (3.5-4.0') for PPMs, barium and SVOCs.	DESCRIPTION 0.0 – 1.0 Asphalt and sub-base. 1.0 – 2.0 Dark gray sand with coal, brick cinders; moist. 2.0 – 4.0 Red-brown clay and silt with sa gravel; moist.	
COMMENTS	:					

BORING #: B301 DATE: 8/30/06 START TIME: 1108 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch BORING DEPTH 4 Feet ORGANIC VAPOR PID (10.8 eV)				BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 3: Former Blue Pulp Aboveground Storage Tank South of the Blue Wing		
EQUIPMENT	1					
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4	NA	3.0	ND	- <u>B301-SS01</u> (0.3-0.8') for PPMs and barium. - <u>B301-SS02</u> (2.0-2.5') for PPMs and barium.	0.3 of 1.3 gra	0 – 0.3 Asphalt and gravel sub-base. 3 – 1.3 Brown silt, sand and gravel with zone blue-green staining from 0.5-0.7'; moist. 3 – 4.0 Red-brown silt with little sand and avel with trace cinders and brick; moist with edium stiff consistency and low plasticity.
COMMENTS	:					

BORING #:			B302			ENVIRON
DATE:			10/5/0	6		BORING LOG
START TIME:			0807			PROJECT: Sun Chemical: Rosebank
LOGGED BY	:		Trevor Tompkins,	Megan Utley		Staten Island, New York
DRILLING C	O:		TPI Environme	ental Inc.		CASE # 21-16443A
DRILLER:			B. Moria	arty		
RIG:			Geoprobe Truck-Mounted			COMMENTS:
SAMPLING N	METHOD:		Direct-Po	ush		AOC 3: Former blue pulp aboveground
BORING DIA	ı:		2-Inch	1		storage tank south of Blue Wing
BORING DEF	РΤΉ		4 Feet			
ORGANIC VA			PID (10.8	eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0-4	NA	3.7	ND, 2.2, ND, ND, ND, ND, ND	- <u>B302-SS01</u> (1.0-1.5') for PPMs and barium. - <u>B302-SS02</u> (2.0-2.5') for PPMs and barium.	0.3 0.9 sil 1.3 co	0 – 0.3 Asphalt. 3 – 0.9 Crushed concrete sub-base. 9 – 1.3 Dark gray sand with little cinders and t, blue-green staining; moist. 3 – 2.0 Brown clay and silt, medium nsistency and plasticity; moist. 0 – 4.0 Red-brown clay and fine to coarse and with large fragments of siltstone; moist.
COMMENTS	:					

BORING #: B401 DATE: 10/4/06 START TIME: 1517 LOGGED BY: Trevor Tompkins DRILLING CO: TPI Environmental Inc. DRILLER: B. Moriarty RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch BORING DEPTH 2 Feet ORGANIC VAPOR PID (10.8 eV)			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 4: Former bichromate aboveground storage tank south of Blue Wing	l		
EQUIPMENT						
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION	
0-2	NA	1.9	ND	- <u>B401-SS01</u> (1.5-2.0') for PPMs and barium.	0.0 – 0.2 Asphalt. 0.2 – 1.5 Red clay with some gravel. Medium soft consistency and high plasticity, staining (blue-green) in upper 2". Refusal at 2.0'	
COMMENTS	:					

BORING #: B402 DATE: 10/5/06 START TIME: 0751 LOGGED BY: Trevor Tompkins, Megan Utley DRILLING CO: TPI Environmental Inc. DRILLER: B. Moriarty RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch BORING DEPTH 4 Feet			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 4: Former bichromate aboveground storage tank south of Blue Wing			
ORGANIC VA EQUIPMENT			PID (10.8	eV)		
DEPTH (feet) 0 – 4	BLOW COUNTS NA	RECOVERY (feet) 4.0	ORGANIC VAPORS SAMPLE(S) (feet) (PPMs) DESIGNATION 4.0 ND, 8.2, 0.7, 0.1, ND, ND, ND, ND PPMs and barium. 1.0 -B402-SS02 (2.0-2.5') for PPMs and 2.0			DESCRIPTION 0 – 0.5 Asphalt. 5 – 1.0 Crushed concrete sub-base. 0 – 2.0 Red-brown clay and sand with little avel and cinders; moist. 0 – 4.0 Red-brown clay with medium soft to edium stiff consistency, high plasticity.
COMMENTS	:					

BORING #: B601 DATE: 8/28/06 START TIME: 1402 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A			
RIG: SAMPLING M BORING DIA BORING DEF ORGANIC VA EQUIPMENT	.: PTH APOR		Geoprobe Truck-Mounted Direct-Push 2-Inch 2 Feet PID (10.8 eV)			COMMENTS: AOC 6: Former Acid Aboveground Storage Tanks South of Red Wing
DEPTH (feet) $0-2$	BLOW COUNTS NA	RECOVERY (feet) 2.0	(feet) (PPMs) DESIGNATION 2.0 ND, 16.6, ND, ND ND -B601-SS02 (1.8-2.0') for PPMs and barium. 1.8 cir			DESCRIPTION 0 – 0.2 Asphalt. 2 – 1.8 Concrete. 8 – 2.0 Orange silt with little sand and trace nders. efusal at 2.0'.
COMMENTS	:					

BORING #: B602 DATE: 10/5/06 START TIME: 1025 LOGGED BY: Trevor Tompkins, Megan Utley DRILLING CO: TPI Environmental Inc. DRILLER: B. Moriarty RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch BORING DEPTH 4 Feet		Megan Utley ental Inc. arty c-Mounted ush	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 6: Former acid aboveground storage tanks south of Red Wing		
ORGANIC VA EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4	NA	3.2	ND	- <u>B602-SS01</u> (2.0-2.5') for PPMs and barium. - <u>B605-SS02</u> (3.5-4.0') for PPMs and barium.	0.0 – 1.0 Concrete. 1.0 – 2.0 Sub-base (crushed concrete and gravel). 2.0 – 4.0 Dark brown clay and silt with some coarse grains and gravel at 2.0 to 2.5, slag, brick and cinders; moist.
COMMENTS	:				

BORING #: DATE: 10/5/06 START TIME: 0935 LOGGED BY: Trevor Tompkins, Megan Utley DRILLING CO: TPI Environmental Inc. DRILLER: B. Moriarty RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch				BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 6: Former acid aboveground storage tanks south of Red Wing		
BORING DEI	APOR		4 Feet PID (10.8 eV)			
EQUIPMENT	•	1		·		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4	NA	2.8	ND	- <u>B603-SS01</u> (1.0-1.5') for PPMs and barium. - <u>B603-SS02</u> (3.5-4.0') for PPMs and barium.	0.5 bri	0 – 0.5 Concrete. 5 – 1.5 Dark gray sand with slag, cinders, and ick; moist. 5 – 4.0 Brown clay and silt with few coarse ains; moist.
COMMENTS	:					

BORING #:	B604	ENVIRON
DATE:	10/5/06	BORING LOG
START TIME:	1045	PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Trevor Tompkins, Megan Utley	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	B. Moriarty	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	AOC 6: Former acid aboveground storage
BORING DIA:	2-Inch	tanks south of Red Wing
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	
	ORGANIC	

DEPTH	EQUIPMEN	L				
54.3, 60.6, 36.6 NA 2.8 34.8, 14.1, 3.8, 3.3, 3.2 -B604-SS02 (3.5-4.0°) for PPMs, barium, VOCs and SVOCs. -B604-SS03 (4.5-5.0°) for PPMs, barium, VOCs and SVOCs. -B604-SS04 (7.5-8.0°) for PPMs, barium, VOCs and SVOCs. -B604-SS04 (7.5-8.0°) for PPMs, barium, VOCs and SVOCs. -B604-SS04 (7.5-8.0°) for PPMs, barium, VOCs and SVOCs.				VAPORS		DESCRIPTION
NA 2.8 34.8, 14.1, 3.8, 3.3, 3.2 -B604-SS02 (3.5-4.0') for PPMs, barium, VOCs and SVOCs. -B604-SS03 (4.5-5.0') for PPMs, barium, VOCs and SVOCs. -B604-SS04 (7.5-8.0') for PPMs, barium, VOCs and SVOCs. -B604-SS04 (7.5-8.0') for PPMs, barium, VOCs and	0 – 4	NA	2.8	54.3, 60.6,	(1.5-2.0') for PPMs, barium,	
	4 – 8	NA	2.8		-B604-SS02 (3.5-4.0') for PPMs, barium, VOCs and SVOCs. -B604-SS03 (4.5-5.0') for PPMs, barium, VOCs and SVOCs. -B604-SS04 (7.5-8.0') for PPMs, barium, VOCs and SVOCs.	grains, soft; moist. Dark stains with gasoline odor. 6.0 – 8.0 Red-brown clay with some silt,

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N	: O:		B605 10/5/0 0903 Trevor Tompkins, TPI Environme B. Moria Geoprobe Truck	Megan Utley ental Inc. arty	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 6: Former acid aboveground storage
BORING DIA	:		2-Inch	1	tanks south of Red Wing
BORING DEI ORGANIC V. EQUIPMENT	APOR		8 Feet PID (10.8		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	3.5	ND ND	- <u>B605-SS01</u> (1.5-2.0') for PPMs and barium. - <u>B605-SS02</u> (3.5-4.0') for PPMs and barium.	0.0 – 0.5 Asphalt. 0.5 – 1.6 Sub-base. May have hit a layer of concrete. 1.6 – 3.3 Light brown clay with some sand, medium stiff consistency, plastic; moist. 3.3 – 4.0 Red-brown clay and sand with siltstone fragments; moist. 4.0 – 8.0 Red-brown clay and silt with few coarse grains; moist.

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N	: O: METHOD:		B606 10/5/06 0948 Trevor Tompkins, Megan Utley TPI Environmental Inc. B. Moriarty Geoprobe Truck-Mounted Direct-Push			BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 6: Former acid aboveground storage tanks south of Red Wing
BORING DIA	ι:		2-Inch	1		tunks south of Red Wing
BORING DE	TH		4 Feet	t		
ORGANIC VA EQUIPMENT			PID (10.8	eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0-4	NA	3.0	ND	- <u>B606-SS01</u> (1.5-2.0') for PPMs and barium. - <u>B606-SS02</u> (3.5-4.0') for PPMs and barium.	0.s	0 – 0.5 Concrete. 5 – 2.0 Red-brown silt and sand with slag and nders; moist. 0 – 4.0 Red-brown clay with some silt; moist.
COMMENTS	:					

BORING #: DATE: START TIME LOGGED BY DRILLING CO	:		B701 8/28/0 1451 Trevor Ton GGS Environmental J. Raus	npkins Services, Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
RIG: SAMPLING M BORING DIA BORING DEF ORGANIC VA EQUIPMENT	.: PTH APOR		Geoprobe Truck Direct-Pr 2-Inch 4 Feet PID (10.8	ush n	COMMENTS: AOC 7: Chrysophenine Plant
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	2.3	ND	-B701-SS01 (0.5-1.0') for PPMs and barium. -B701-SS02 (1.5-2.0') for VOCs and (2.0-2.5') for PPMs and barium.	 0.0 - 0.5 Asphalt and sub-base. 0.5 - 1.0 Brown silt, sand and fine gravel with trace cinders; moist. 1.0 - 2.0 Red sandy silt with little fine gravel; moist with medium stiff consistency and medium plasticity. 2.0 - 3.0 Dark gray coarse sand with cinders and glass; moist to wet. 3.0 - 4.0 Red sandy silt with little fine gravel; moist with medium stiff consistency and medium plasticity.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER: RIG: SAMPLING M BORING DIA	: O: METHOD:	8/28/06 1507 Trevor Tompkins SGS Environmental Services, Inc. J. Rausa Geoprobe Truck-Mounted Direct-Push			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 7: Chrysophenine Plant
BORING DIA			2-Inch 4 Fee		
ORGANIC VA	APOR		PID (10.8		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4	NA	3.2	ND	- <u>B702-SS01</u> (0.5-1.0') for PPMs and barium. - <u>B702-SS02</u> (2.0-2.5') for VOCs, PPMs and barium.	0.0 – 0.2 Asphalt. 0.2 – 0.5 Brown silt, sand and gravel; moist. 0.5 – 4.0 Red silt with stiff consistency and low plasticity; moist with little sand with zone of red fine to medium sand from 1.5-1.7' and 2.5-3.0'.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER: RIG: SAMPLING M BORING DIA BORING DER	: O: METHOD: .:		B703 10/4/0 1500 Trevor Ton TPI Environm B. Moria Geoprobe Truck Direct-P 2-Inck	npkins ental Inc. arty k-Mounted ush	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 7: Former chrysophenine plant
ORGANIC VA EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4	NA	3.2	ND	-B703-SS01 (0.5-1.0') for PPMs and barium. -B703-SS02 (1.5-2.0') for PPMs and barium.	0.0 – 0.5 Asphalt and sub-base. 0.5 – 1.0 Brown sand and silt with little gravel; moist. 1.0 – 4.0 Red-brown silt/clay with medium stiff consistency and medium plasticity with zones of sand from 2.6 to 3.0' and 3.5 to 3.7'.
COMMENTS	:				

DRILLER:			B801 8/28/06 1425 Trevor Tom GGS Environmental J. Raus	npkins Services, Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS:	
SAMPLING N	AETHOD.		Direct-P		7	
					AOC 8: Southern Material Storage Area	Ĺ
BORING DIA			2-Inch		- 	
BORING DEF ORGANIC V. EQUIPMENT	APOR		4 Feet PID (10.8		_	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION	
0-4	NA	2.5	ND	-B801-SS01 (0.5-1.0') for PPMs and barium. -B801-SS02 (2.0-2.5') for VOCs, PPMs and barium.	0.0 – 0.3 Concrete. 0.3 – 4.0 Red silt; moist with medium soft consistency and medium plasticity.	
COMMENTS	:					

BORING #: DATE: 8/28/06 START TIME: 0909 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa			4	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A		
RIG:			Geoprobe Truck	x-Mounted	_	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush		AOC 9: Drum Storage Area
BORING DIA	ι:		2-Inch	1	_	
BORING DEF	TH		4 Feet	t	_	
ORGANIC VA EQUIPMENT			PID (10.8	eV)		
DEPTH (feet) $0-4$	BLOW COUNTS NA	RECOVERY (feet) 2.8	ORGANIC VAPORS (PPMs) SAMPLE(S) DESIGNATION 2.8 ND -B901-SS01 (0.5-1.0') for PPMs and barium lit			DESCRIPTION - 0.5 Asphalt and sub-base. - 4.0 Red-brown to brown sandy silt with e gravel and brick; moist with medium stiff sistency and low plasticity.
COMMENTS	:					

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N	Ć: O:		B902 8/28/0 0832 Trevor Ton GGS Environmental J. Raus Geoprobe Truck	npkins Services, Inc. sa	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 9: Drum Storage Area
BORING DIA	\ :		2-Inch	1	
BORING DEI	PTH		4 Feet	t	
ORGANIC V. EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.8	ND	-B902-SS01 (0.2-0.7') for PPMs and barium and (1.5-2.0') for VOCs. -B902-SS02 (2.0-2.5') for PPMs and barium and (3.0-3.5') for VOCs.	0.0 – 0.2 Asphalt and sub-base. 0.2 – 4.0 Red-brown sandy silt with little gravel; moist with medium stiff consistency and low plasticity.
COMMENTS	:				

					_
BORING #:			B903		CNVI P O N
DATE:			8/28/0	6	ENVIRON BORING LOG
START TIME	E:		0801		PROJECT: Sun Chemical: Rosebank
LOGGED BY	:		Trevor Ton	npkins	Staten Island, New York
DRILLING C	O:	S	GS Environmental	Services, Inc.	CASE# 21-16443A
DRILLER:			J. Raus	sa	
RIG:			Geoprobe Truck	x-Mounted	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	AOC 9: Drum Storage Area
BORING DIA	\:		2-Inch	1	
BORING DEI	PTH		4 Feet	į	
ORGANIC V. EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	2.9	ND	- <u>B903-SS0</u> (0.3-0.8') for VOCs, PPMs and barium. - <u>B903-SS02</u> (2.0-2.5') for VOCs, PPMs and barium.	0.0 – 0.3 Asphalt and sub-base. 0.3 – 4.0 Red-brown silt and sand with little gravel; moist.
COMMENTS	:				

LOGGED BY DRILLING CO DRILLER: RIG: SAMPLING N	DATE: 8/28/06 START TIME: 0929 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 9: Drum Storage Area	
BORING DIA			2-Inch		-
BORING DEF ORGANIC VA EQUIPMENT	APOR		4 Feet PID (10.8		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.2	ND	-B904-SS01 & B904-SS01D (0.3-0.8') for PPMs and barium and (1.5-2.0') for VOCs. -B904-SS02 (2.0-2.5') for PPMs and barium and (3.0-3.5') for VOCs.	0.0 – 0.3 Asphalt and sub-base. 0.3 – 4.0 Brown silt with some sand and little gravel, brick and asphalt fragments throughout; moist with medium soft consistency and low plasticity.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER:	:	<u> </u>	B905 8/28/0 0852 Trevor Ton GGS Environmental J. Rau	6 npkins Services, Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
RIG:			Geoprobe Truck		COMMENTS:
SAMPLING N BORING DIA			Direct-P		AOC 9: Drum Storage Area
BORING DEA			4 Feet		
ORGANIC V. EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.3	ND	- <u>B905-SS0</u> (1.5-2.0') for VOCs, PPMs and barium. - <u>B905-SS02</u> (3.0-3.5') for VOCs, PPMs and barium.	0.0 – 1.5 Asphalt and sub-base. 1.5 – 3.0 Brown silt with some brick and little asphalt; moist. 3.0 – 4.0 Brown silt with some sand and little organics; moist with soft consistency and low plasticity.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N BORING DIA BORING DEI	C: O: METHOD:	S	B1301 8/30/0 0755 Trevor Ton GGS Environmental J. Rau: Geoprobe Truck Direct-P 2-Inch	npkins I Services, Inc. sa c-Mounted ush	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 13: Former Coal Pile
ORGANIC V. EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.6	0.4, ND	-B1301-SS01 (1.5-2.0') for VOCs, SVOCs, PPMs and barium. -B1301-SS02 (3.5-4.0') for VOCs, SVOCs, PPMs and barium.	 0.0 – 0.5 Asphalt and sub-base. 0.5 – 1.0 Brown silt and sand with some gravel and trace cinders and brick. 1.0 – 2.0 Dark gray silt and sand with some gravel and cinders; moist. 2.0 – 4.0 Red brown silt with some sand and little gravel; moist with medium stiff consistency and low plasticity. Orange rust color from 2.0-3.0' with little cinders within that interval.
COMMENTS	:				

BORING #: DATE: 8/28/06 START TIME: 1039 LOGGED BY: Trevor Tompkins DRILLING CO: SGS Environmental Services, Inc. DRILLER: J. Rausa			npkins Services, Inc.		ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A	
RIG: SAMPLING N BORING DIA BORING DEI ORGANIC V EQUIPMENT	a: PTH APOR		Geoprobe Truck-Mounted Direct-Push 2-Inch 4 Feet PID (10.8 eV)			COMMENTS: AOC 14: Former Caustic Release Area
DEPTH (feet) $0-4$	BLOW COUNTS NA	RECOVERY (feet) 3.0	(PPMs) DESIGNATION 3.0 ND -B1401-SS01 (0.5-1.0') for PPMs and barium, SVOCs and PCBs. -B1401-SS02 (3.5-4.0') for PPMs and briand bria			DESCRIPTION - 0.5 Asphalt and sub-base. - 2.0 Brown silt with little gravel; moist a stiff consistency and low plasticity. - 2.2 Brown fine gravel. - 4.0 Brown silt with trace ceramics and k from 2.5-3.0'; moist with medium soft sistency and medium plasticity.
COMMENTS	:					

BORING #: DATE: START TIME: LOGGED BY: DRILLING CO: DRILLER:		B1402 8/28/0 1051 Trevor Ton GGS Environmental J. Raus	6 npkins Services, Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
RIG: SAMPLING METHOD: BORING DIA: BORING DEPTH ORGANIC VAPOR EQUIPMENT		Geoprobe Truck Direct-Pr 2-Inch 8 Feet PID (10.8	k-Mounted ush 1	COMMENTS: AOC 14: Former Caustic Release Area
DEPTH BLOW (feet) COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 NA 4-8 NA	2.7	ND ND	-B1402-SS01 (0.5-1.0') for PPMs and barium, SVOCs and PCBs. -B1402-SS02 (6.0-6.5') for PPMs and barium, SVOCs and PCBs.	 0.0 - 0.2 Asphalt and sub-base. 0.2 - 0.7 Brown sand and gravel with green substance at 0.7 feet. 0.7 - 1.0 Black tar-like substance with gravel. 1.0 - 3.0 Dark brown silt with little sand and gravel (one chunk of concrete); moist with zones of dark gray coloration. 3.0 - 3.8 Red-brown silt with some sand and little gravel; moist. 3.8 - 4.0 Dark gray to dark brown silt, sand and gravel; moist. 4.0 - 8.0 Red-brown silt with some sand and little gravel; zone of moist to wet brown coarse sand from 5.0-5.5'.

BORING #: DATE: START TIME LOGGED BY DRILLING CO	:		B1403 8/28/0 1205 Trevor Tom GGS Environmental J. Raus	npkins Services, Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS:
SAMPLING N	METHOD:		Direct-P		AOC 14: Former Caustic Release Area
BORING DIA	ı:		2-Inch	1	
BORING DEF	TH		2 Feet	t	
ORGANIC VA EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-2	NA	1.7	ND, 3.2, 4.3	- <u>B1403-SS01</u> (1.5-2.0') for PPMs and barium, SVOCs and PCBs.	0.0 – 0.3 Asphalt and sub-base. 0.3 – 2.0 Fill: Brown silt with sand, gravel, cinders and brick; moist with mothball-like odor. Refusal at 2.0'
COMMENTS	:				

BORING #:			B1404			CNVLDON
DATE:			8/28/06			ENVIRON BORING LOG
START TIME:			1241			PROJECT: Sun Chemical: Rosebank
LOGGED BY	<i>'</i> :		Trevor Tompkins			Staten Island, New York
DRILLING C	O:		SGS Environmental Services, Inc.			CASE # 21-16443A
DRILLER:			J. Rausa			
RIG:			Geoprobe Truck-Mounted			COMMENTS:
SAMPLING METHOD:			Direct-Push			AOC 14: Former Caustic Release Area
BORING DIA:			2-Inch			
BORING DEPTH			8 Feet			
ORGANIC VAPOR EQUIPMENT			PID (10.8 eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4 4 – 8	NA NA	3.0 2.5	ND, ND, 10.3, 2.2, ND, ND ND	-B1404-SS01 (1.5-2.0') for PPMs and barium, SVOCs and PCBs. -B1404-SS02 (6.0-6.5') for	0.5 ode 2.5 litt	0 – 0.5 Asphalt and gravel sub-base. 5 – 2.5 Concrete with slight mothball-like or. 5 – 4.0 Red-brown to dark gray sandy silt with the gravel; moist with medium stiff insistency and low plasticity.

(6.0-6.5') for PPMs and barium, SVOCs

and PCBs.

4.0-8.0 Red-brown with zones of gray, sandy silt with little gravel; moist with medium stiff

consistency and medium plasticity. Brick fragments from 4.0-6.0'.

BORING #:	B1405	ENVIRON
DATE:	10/4/06	BORING LOG
START TIME:	1209	PROJECT: Sun Chemical: Rosebank Staten Island, New York
LOGGED BY:	Trevor Tompkins	
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	B. Moriarty	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	AOC 14: Former Caustic Release Area
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	
2011112111		

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.5	ND	- <u>B1405-SS01</u> (1.5-2.0') for PCBs, PPMs, barium and	0.0 – 0.7 Asphalt and sub-base with tar-like substance. 0.7 – 3.0 Light brown silt with trace brick and
4 – 8	NA	2.6	ND	SVOCs. - B1405-SS02 (3.5-4.0') for PCBs, PPMs, barium and SVOCs. -B1405-SS03 (6.0-6.5) for PCBs, PPMs, barium and SVOCs.	cinders; dry. 3.0 – 4.0 Red-brown silt with rock fragments from 3.0-3.2', little sand and gravel; dry. 4.0 – 6.5 Red-brown fine sand with some silt; dry and loose. 6.5 – 6.7 Rock fragments. 6.7 – 7.0 Red very fine sand; moist.

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER: RIG:	7 :		B1406 10/4/0 1226 Trevor Ton TPI Environm B. Moria	npkins ental Inc.	BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS:
SAMPLING I			Direct-P		AOC 14: Former Caustic Release Area
BORING DIA: BORING DEPTH ORGANIC VAPOR EQUIPMENT			2-Inch 8 Feet PID (10.8 eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	2.1	ND ND	-B1406-SS01 (0.5-1.0') for PCBs, PPMs, barium and SVOCs. -B1406-SS02 (2.5-3.0') for PCBs, PPMs, barium and SVOCs.	0.0 – 0.3 Asphalt. 0.3 – 1.0 Red-brown silt with little sand and clay. Trace cinders and brick. 1.0 – 2.0 Light brown sand and gray angular gravel with rock fragments from 1.8 to 2.0'. 2.0 – 3.0 Green-blue stained silt with some sand and one cobble; wet. 3.0 – 4.4 Brown sand and clay; wet.
COMMENTS	:				

BORING #: B1407					<u> </u>	
DATE: 10/4/06			<u>ENVIRON</u> BORING LOG			
START TIME	Ξ:		1007			PROJECT: Sun Chemical: Rosebank
LOGGED BY	' :		Trevor Ton	npkins		Staten Island, New York
DRILLING C	O:		TPI Environme	ental Inc.		CASE# 21-16443A
DRILLER:			B. Moria	arty		
RIG:			Geoprobe Truck	x-Mounted		COMMENTS:
SAMPLING I	METHOD:		Direct-P	ush		AOC 14: Former Caustic Release Area
BORING DIA	Λ:		2-Inch	1		
BORING DE	PTH		8 Feet			
ORGANIC V. EQUIPMENT			PID (10.8 eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4 4 – 8	NA NA	3.9	8.8, 65.7, 46.6, 7.3, 0.5, 0.1, ND	-B1407-SS01 (0.5-1.0') for VOCs, SVOCs, PPMs, barium and PCBs.	0.: gr	0 – 0.5 Asphalt and black tar-like substance. 5 – 1.5 Dark gray sand with some silt and little avel and cinders; moist with petroleum drocarbon-like odor.
				- <u>B1407-SS02</u> (3.5-4.0') for VOCs, SVOCs, PPMs, barium and PCBs. - <u>B1407-SS03</u> (6.0-6.5) for VOCs, SVOCs,	1 grr 3 ve pla	5 – 3.5 Red-brown silt with little sand and avel; trace brick. 5 – 4.0 Brown sandy clay with trace gravel; ry moist with soft consistency and high asticity. 0 – 8.0 Red-brown silty sand with trace avel; soils wet at 6.5'.

PPMs, barium and PCBs.

BORING #: DATE: 10/4/06 START TIME: LOGGED BY: Trevor Tompkins DRILLING CO: TPI Environmental Inc. DRILLER: B. Moriarty RIG: Geoprobe Truck-Mounted SAMPLING METHOD: Direct-Push BORING DIA: 2-Inch			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 14: Former Caustic Release Area		
BORING DEF	TH		8 Feet		
ORGANIC VA EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	3.3	ND, ND, 5.1, 3.6, ND, ND ND	-B1408-SS01 (1.0-1.5') for PCBs, PPMs, barium and SVOCs. -B1408-SS02 (3.5-4.0') for PCBs, PPMs, barium and SVOCs. -B1408-SS03 (6.0-6.5) for PCBs, PPMs, barium and SVOCs.	0.0 – 0.2 Asphalt and sub-base. 0.2 – 0.7 Brown silt and sand with some gravel; moist. 0.7 – 1.0 Tar-like substance and gravel. 1.0 – 1.5 Dark gray silt and gravel with little gravel. 1.5 – 1.7 Concrete fragments. 1.7 – 6.0 Brown clay with some silt and sand. Soft consistency and high plasticity; wet at 4.0'. 6.0 – 8.0 Red brown clay with medium stiff consistency and medium plasticity; very moist to wet. * ~3" of wet sand from 5.7 to 6.0' another wet sand stringer 7.0 to 7.2'.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER: RIG: SAMPLING M BORING DIA BORING DER ORGANIC VA EQUIPMENT	E: O: METHOD: A: PTH APOR	2-Inch 8 Feet			ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 14: Former Caustic Release Area
DEPTH	BLOW	RECOVERY	ORGANIC VAPORS	SAMPLE(S)	•
(feet)	COUNTS	(feet)	(PPMs)	DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	2.7	ND	-B1410-SS01 (1.5-2.0') for PCBs, PPMs, barium and SVOCs. -B1410-SS02 (3.5-4.0') for PCBs, PPMs, barium and SVOCs. -B1410-SS03 (6.0-6.5) for PCBs, PPMs, barium and SVOCs.	0.0 – 0.2 Asphalt and sub-base. 0.2 – 1.0 Light brown silt, gray fine angular gravel. 1.0 – 4.0 Brown to red-brown silty clay with little sand and gravel; moist with medium stiff consistency and medium to high plasticity. 4.0 – 8.0 Red-brown silt with medium stiff consistency and low plasticity with little to some sand and trace gravel; moist with perched water at 7.0°.

BORING #: DATE: START TIME LOGGED BY DRILLING CONTILLER:	TE: 10/4/06 ART TIME: 1328 GGED BY: Trevor Tompkins ILLING CO: TPI Environmental Inc.			BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A	
RIG: SAMPLING N BORING DIA BORING DEI ORGANIC V EQUIPMENT	a: PTH APOR		Geoprobe Truck Direct-Pr 2-Inch 8 Feet PID (10.8	x-Mounted ush	COMMENTS: AOC 14: Former Caustic Release Area
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	2.8	ND ND	-B1411-SS01 (1.5-2.0') for PCBs, PPMs, barium and SVOCs. -B1411-SS02 (2.5-3.0') for PCBs, PPMs, barium and SVOCs. -B1411-SS03 (6.0 to 6.5') for PCBs, PPMs, barium and SVOCs.	 0.0 – 0.5 Asphalt and sub-base. 0.5 – 1.5 Light brown/gray soft/uncured concrete with angular gravel; moist. 1.5 – 3.5 Red-brown silt with little sand and gravel and trace brick. 3.5 – 5.0 Red-brown very fine sand with some clay and trace gravel; very moist to wet. 5.0 – 8.0 Red-brown clay with medium soft consistency and high plasticity.

BORING #: DATE: START TIME: LOGGED BY: DRILLING CO:	B1501 10/5/06 0820 Trevor Tompkins, Megan Utley TPI Environmental Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
DRILLER:	B. Moriarty	
RIG: SAMPLING METHOD:	Geoprobe Truck-Mounted Direct-Push	COMMENTS: AOC 15: Current aboveground acid storage
BORING DIA:	2-Inch	tanks
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	4.0	ND	- <u>B1501-SS01</u> (1.0-1.5') for PPMs and	0.0 – 0.5 Asphalt. 0.5 – 1.0 Sub-base.
4 – 8	NA	2.9	ND	barium <u>B1501-SS02</u> (3.0-3.5') for PPMs and	1.0 – 1.2 Dark gray sand with little cinders and silt; moist 1.2 – 2.9 Orange-brown clay and silt,
				barium. -B1501-SS03 (6.0-6.5') for PPMs and	progressively more clay toward bottom; moist. 2.9 – 8.0 Red-brown clay and fine to medium sand with large siltstone fragments; moist. Slightly coarser from 4.0 to 8.0' with increased
				barium.	sand content from 7.0 to 8.0'.

BORING #: DATE: 10/5/06 START TIME: 0845 LOGGED BY: Trevor Tompkins, Megan Utley DRILLING CO: TPI Environmental Inc. DRILLER: B. Moriarty RIG: Geoprobe Truck-Mounted				ENVIRON BORING LOG Sun Chemical: Rosebank Staten Island, New York -16443A COMMENTS:		
SAMPLING 1	METHOD:		Direct-P	ush	AOC 15: C	urrent aboveground acid storage
BORING DIA BORING DEI ORGANIC V EQUIPMENT	PTH APOR		2-Inch 8 Feet PID (10.8 eV)			tanks
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4 4 – 8	NA NA	4.0	ND ND	-B1502-SS01 (1.0-1.5') for PPMs and barium. -B1502-SS02 (3.5-4.0') for PPMs and barium. -B1502-SS03 (6.0-6.5') for	a.2 – 4.0 Gray at oft to medium s of fine to medium ontent 3.4 to 4.0	own clay and fine sand; moist. Indicate the own clay and fine sand; moist.
				PPMs and barium.	.0 – 8.0 Red-br lay; moist.	own fine sand and silt with little

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER:	:		B1601 10/5/0 1505 Trevor Tompkins, TPI Environme B. Moria	Megan Utley ental Inc.	\dashv	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
RIG:			Geoprobe Truck		_	COMMENTS:
SAMPLING N			Direct-Pr			AOC 16 – Wastewater system
BORING DIA			2-Inch		_	
BORING DEF		-	4 Feet			
ORGANIC VA EQUIPMENT			PID (10.8	eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	•	DESCRIPTION
0-4	NA	3.2	ND	-B1601-SS01 (2.0-2.5') for PPMs, barium and pH. -B1601-SS02 (3.5-4.0') for PPMs, barium and pH.	0.5 - sanc	 - 0.5 Asphalt and sub-base. - 4.0 Red-brown silt with some clay and d progressing down to silty clay with little d; moist. Some gravel.
COMMENTS	:					

BORING #: DATE: START TIME LOGGED BY DRILLING CO	:		B1603 10/5/0 1322 Trevor Tompkins, TPI Environme B. Moria	Megan Utley ental Inc.	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
RIG: SAMPLING M BORING DIA BORING DEI ORGANIC VA EQUIPMENT	a: PTH APOR		Geoprobe Truck Direct-Pr 2-Inch 4 Feet PID (10.8)	ush n t	COMMENTS: AOC 16 – Wastewater system
DEPTH (feet) $0-4$	BLOW COUNTS NA	RECOVERY (feet) 2.9	ORGANIC VAPORS (PPMs) ND	SAMPLE(S) DESIGNATION -B1603-SS01 (2.0-2.5') for PPMs, barium and pH. -B1603-SS02 (3.5-4.0') for PPMs, barium and pH.	DESCRIPTION 0.0 – 0.5 Concrete. 0.5 – 4.0 Red-brown clay with some silt and sand with little medium to coarse rounded gravel; moist with medium soft consistency and medium plasticity.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER:	´:		B1604 10/5/0 1231 Trevor Tompkins, TPI Environme B. Moria	Megan Utley	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A	
RIG:			Geoprobe Truck	x-Mounted	_	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	_	AOC 16 – Wastewater system
BORING DIA	ν:		2-Inch	1	_	
BORING DE	PTH		4 Feet	İ.		
ORGANIC V. EQUIPMENT			PID (10.8	eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	•	DESCRIPTION
0-4	NA	3.6	3.6 ND - <u>B1604-SS01</u> 0.0 (2.0-2.5') for PPMs, barium and pH. 0			0 – 0.5 Concrete. 6 – 0.7 Coarse sand (white/gray) and gravel. 7 – 4.0 Red-brown fine to medium sand and lit with few coarse grains.
COMMENTS	:					

BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N BORING DIA	: O: METHOD:		B1605 10/5/00 1215 Trevor Tompkins, TPI Environme B. Moria Geoprobe Truck Direct-Pt 2-Inch	Megan Utley ental Inc. arty -Mounted ush	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 16 – Wastewater system
BORING DEA	PTH		4 Feet		
ORGANIC V.	APOR		PID (10.8		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4	NA	4.0	ND	-B1605-SS01 (2.0-2.5') for PPMs, barium and pH. -B1605-SS02 (3.5-4.0') for PPMs, barium and pH.	0.0 – 0.5 Concrete. 0.5 – 0.8 Dark gray coarse sand with coarse gravel and cinders; moist. 0.8 – 2.0 Light brown clay with little silt; moist. 2.0 – 4.0 Brown silt and fine sand with some coarse grains; moist.

BORING #:			B1600		ENVIRON
					BORING LOG
START TIME			1525		PROJECT: Sun Chemical: Rosebank
LOGGED BY	:		Trevor Tompkins,	Megan Utley	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
DRILLER:			B. Mori	arty	
RIG:			Geoprobe Truck	k-Mounted	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	AOC 16 – Wastewater system
BORING DIA	λ:		2-Inch	1	
BORING DE	PTH		4 Fee	t	
ORGANIC V. EQUIPMENT			PID (10.8	s eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.1	ND	-B1606-SS01 (2.0-2.5') for PPMs, barium and pH. -B1606-SS02 (3.5-4.0') for PPMs, barium and pH.	0.0 – 0.5 Asphalt and sub-base. 0.5 – 3.0 Dark gray to brown sand with some silt, cinders, and gravel; moist. 3.0 – 4.0 Red-brown silty clay with little gravel and sand, medium soft consistency, medium plasticity; moist.
COMMENTS	:				

BORING #: DATE: START TIME LOGGED BY DRILLING CONTILLER:	:		B1607 10/5/0 1404 Trevor Tompkins, TPI Environm B. Moria	Megan Utley ental Inc.	BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A
RIG: SAMPLING N BORING DIA BORING DEI ORGANIC V EQUIPMENT	a: PTH APOR		Geoprobe Truck Direct-P 2-Inck 4 Feet PID (10.8	ush	COMMENTS: AOC 16 – Wastewater system
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	2.0	ND	-B1607-SS01 (2.0-2.5') for PPMs, barium and pH. -B1607-SS02 (3.5-4.0') for PPMs, barium and pH.	0.0 – 0.5 Cement. 0.5 – 2.0 Brown silt with medium to coarse sand with clay and some pebbles; moist. 2.0 – 4.0 Red-brown silt and clay, medium soft consistency, some fine to coarse sand and pebbles; moist.
COMMENTS	:				

BORING #:	MW01	ENVIRON
DATE:	8/29/06	BORING LOG
START TIME:	1017	PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Trevor Tompkins, Megan Utley	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	B. Moriarty	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	
BORING DIA:	2-Inch	
BORING DEPTH	30 Feet	
ORGANIC VAPOR EOUIPMENT	PID (10.8 eV)	

EQUIPMENT					
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-2	7, 23, 23, 34	1.3	ND		0.0 – 0.7 Dark brown sandy silt with little gravel, grass and roots; moist.
5 – 7	7, 14, 11, 12	2.0	ND		0.7 – 2.0 Red-brown silt with some sand and little gravel; slightly moist to dry.
10 – 12	26, 26, 30, 33	1.9	ND		5.0 – 7.0 Red-brown sandy silt with little to some medium gravel; moist with stiff consistency and low plasticity.
15 – 17	17, 36, 40, 45	1.4	ND		10.0 – 12.0 Red brown silt with some sand, little
20 – 22	45, 45, 46, 50	0.0	ND		gravel; moist with medium stiff consistency, low plasticity, shale fragments at 11.8'.
25 – 27	17, 30, 31, 31	1.9	ND		15.0 – 15.8 Red-brown silt with some gravel and sand; moist with medium stiff consistency and low plasticity.
28 – 30	30, 46, 50, 50/5	1.8	ND		15.8 – 16.2 Gray rock fragments.
	30/3				16.2 – 17.0 Red-brown sand an silt with some gravel; moist.
					*cuttings between 20 and 25' came up wet.
					25.0 – 27.0 Red-brown silt with little gravel and sand; moist with medium stiff consistency and low plasticity. No sign of water.
					28.0 – 29.9 Red-brown silt with little sand and gravel. Rock fragments at 29.0 and 29.6'. Red shale fragments in end of spoon. Appears to be top of bedrock. Soils are moist with stiff consistency and low plasticity.

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER: RIG: SAMPLING M BORING DIA BORING DER	: O: METHOD: :	S S	MW2 8/28/0 1347 Trevor Ton GGS Environmental J. Raus Geoprobe Truck Direct-Pr 2-Inch 7.8 Fee	npkins Services, Inc. sa c-Mounted ush	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: AOC 6: Former Acid Aboveground Storage Tanks South of Red Wing
ORGANIC VA EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	3.3	ND ND	-MW2-SS01 (2.0-2.5') for PPMs and barium. -MW2-SS02 (4.0-4.5') for PPMs and barium.	 0.0 – 0.2 Asphalt. 0.2 – 2.0 Concrete. 2.0 – 2.2 Black cinders from 2.0-2.2' with red and yellow coloring. 2.2 - 4.0 Red-brown silt with little sand and gravel; moist with stiff consistency and low plasticity. 4.0 – 7.8 Red-brown silt with little to some sand and little gravel; moist with medium stiff consistency and low plasticity. Refusal at 7.8'.
COMMENTS					

BORING #:	MW-2	ENVIRON	
DATE:	10/6/06	BORING LOG	
START TIME:	0740	PROJECT: Sun Chemical: Rosebank	
LOGGED BY:	Trevor Tompkins, Megan Utley	Staten Island, New York	
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A	
DRILLER:	B. Moriarty		
RIG:	Geoprobe Truck-Mounted	COMMENTS:	
SAMPLING METHOD:	Direct-Push	AOC 6: Former acid aboveground storage	
BORING DIA:	2-Inch	tanks south of Red Wing	
BORING DEPTH	19 Feet		
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)		

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.8	ND	- <u>MW02-SS01</u> (1.5-2.0') for	0.0 – 0.5 Asphalt and sub-base.
4 – 8	NA	3.6	ND	PPMs and barium. - <u>MW02-SS02</u> (3.5-4.0') for	0.5 – 1.0 Red to light brown to dark gray silt and sand with little sand and gravel; moist. 1.0 – 1.2 Rock fragments.
8 – 12	NA	4.0	ND	PPMs and barium.	1.2 – 16.0 Red-brown silty clay with little to some sand and gravel; moist with medium stiff consistency and medium plasticity. Higher gravel and cobble content at 16.5', potential
12 – 16	NA	3.5	ND		perched layer at 16-16.8'. *Refusal at 19' with cobble/gravel in toe of macrocore
16 - 20	NA	2.8	ND		nacrocore .

BORING #:			MW3			
DATE:			8/28/0	6		<u>ENVIRON</u> BORING LOG
START TIME	B:		1521			PROJECT: Sun Chemical: Rosebank
LOGGED BY	7 :		Trevor Tom	npkins		Staten Island, New York
DRILLING C	O:		SGS Environmental	Services, Inc.		CASE# 21-16443A
DRILLER:			J. Raus	sa		
RIG:			Geoprobe Truck	x-Mounted		COMMENTS:
SAMPLING N	METHOD:		Direct-Push			AOC 5: Former Acid Aboveground Storage
BORING DIA	Λ:		2-Inch			Tanks South of Blue Wing
BORING DEPTH			16 Feet			
ORGANIC V. EQUIPMENT			PID (10.8 eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4	NA	2.5	ND	- <u>MW3-SS01</u> (0.2-0.7') for	0.	0 – 0.2 Concrete.
4 – 8	NA	3.3	ND	PPMs and barium. - <u>MW3-SS02</u> (1.5-2.0') for	an 0.	2 – 0.7 Blue-green stained sand with some silt and gravel; moist. 7 – 12.0 Red silt with little to some sand and ttle gravel; moist with stiff consistency and
8 – 12	NA	3.1	ND	PPMs and barium.	lo 9.	w plasticity. Zones of sand from 7.5-7.7', 8.5-0', 9.2-9.4' and 10.0-10.3'. 2.0 – 16.0 Red silt with some sand and

ND

COMMENTS:

12 – 16

NA

2.0

medium to coarse gravel; moist with stiff consistency and low plasticity – Black shale fragments from 13.5-14.0'. Water on piece of

gravel in toe of macrocore sampler.

BORING #:	MW4	ENVIRON	
DATE:	8/30/06	BORING LOG	
START TIME:	1143	PROJECT: Sun Chemical: Rosebank	
LOGGED BY:	Trevor Tompkins	Staten Island, New York	
DRILLING CO:	SGS Environmental Services, Inc.	CASE # 21-16443A	
DRILLER:	J. Rausa		
RIG:	Geoprobe Truck-Mounted	COMMENTS:	
RIG: SAMPLING METHOD:	Geoprobe Truck-Mounted Direct-Push	COMMENTS: AOC 15: Current Aboveground Storage	
		1	
SAMPLING METHOD:	Direct-Push	AOC 15: Current Aboveground Storage	
SAMPLING METHOD: BORING DIA:	Direct-Push 2-Inch	AOC 15: Current Aboveground Storage	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	3.6	ND	- <u>MW4-SS01</u> (1.0-1.5') for	0.0 - 0.3 Asphalt and sub-base.
4 – 8	NA	3.2	ND	VOCs and SVOCs. - <u>MW4-SS02</u> (4.5-5.0') for	0.3 – 2.0 Brown silt with little sand, gravel, cinders and brick; moist with stiff consistency and low plasticity. 2.0 – 4.0 Red-brown silt with little sand and
8 – 12	NA	3.1	ND	VOCs and SVOCs.	gravel with trace cinders and brick; moist with stiff consistency and low plasticity.
12 – 16	NA	4.0	ND		4.0 – 16.0 Red-brown silt with some sand and gravel; moist with medium stiff consistency and low plasticity. Rock fragments at 6.8, 7.5, 8.5 and from 14.5 to 15.0 feet. Zone of loose silt, sand and gravel that is wet from 13.0-14.5'.
16 – 20	NA	4.0	ND		16.0 – 20.0 Red-brown silt with little sand and gravel; moist with stiff consistency and low plasticity. Zone of loose silt, sand and gravel from that is wet from 17.0-18.0'.

BORING #:			MW5			CNVIDON
DATE:			8/30/0	6		ENVIRON BORING LOG
START TIME	3:		0921			PROJECT: Sun Chemical: Rosebank
LOGGED BY	<i>'</i> :		Trevor Ton	npkins		Staten Island, New York
DRILLING C	O:		GGS Environmental	Services, Inc.		CASE # 21-16443A
DRILLER:			J. Raus	sa		
RIG:			Geoprobe Truck-Mounted			COMMENTS:
SAMPLING I	METHOD:		Direct-Push			AOC 2: Railroad Tracks
BORING DIA	λ:		2-Inch			
BORING DE	PTH		12 Feet			
ORGANIC V. EQUIPMENT			PID (10.8 eV)			
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION		DESCRIPTION
0 – 4	NA	4.0	ND	- <u>MW5-SS01</u> (0.5-1.0') for PPMs and barium.	0.5 cir	0 – 0.5 Asphalt and sub-base. 5 – 2.0 Brown silt with little sand, gravel, anders and brick; moist with concrete chunk at
4 – 8	NA	4.0	ND	- <u>MW5-SS02</u> (1.5-2.0') for PPMs and		5'. 0 – 6.5 Red-brown silt with some sand, little avel and trace cinders and slag; moist with

0 – 4	NA	4.0	ND	- <u>MW5-SS01</u> (0.5-1.0') for	0.0 - 0.5 Asphalt and sub-base.
4 – 8	NA	4.0	ND	PPMs and barium.	0.5 – 2.0 Brown silt with little sand, gravel, cinders and brick; moist with concrete chunk at 1.5'.
	11/1	1.0	ND	- <u>MW5-SS02</u> (1.5-2.0') for PPMs and	2.0 – 6.5 Red-brown silt with some sand, little gravel and trace cinders and slag; moist with
8 – 12	NA	3.5	ND	barium.	stiff consistency and low plasticity.
				- <u>MW5-SS03</u> (3.5-4.0') for PPMs and	6.5 – 7.8 Brown silt and sand with some gravel; moist to nearly wet at 7.5'.
				barium.	7.8 – 8.0 Black cinders with some green glass; wet.
					8.0 – 10.0 Brown silt and sand; wet.
					10.0 – 12.0 Brown to dark gray peat; moist. Roots, twigs and leaves observed in peat.

BORING #:	MW-05D	ENVIRON		
DATE:	10/6/06	BORING LOG		
START TIME:	0949	PROJECT: Sun Chemical: Rosebank		
LOGGED BY:	Trevor Tompkins, Megan Utley	Staten Island, New York		
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A		
DRILLER:	B. Moriarty			
RIG:	Geoprobe Truck-Mounted	COMMENTS:		
SAMPLING METHOD:	Direct-Push	. AOC 2 – Former Railroad Tracks at Eastern Parking Lot		
BORING DIA:	2-Inch			
BORING DEPTH	20 Feet			
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)			
-	ODGANIG	_		

EQUIPMENT					
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
12 – 16	NA	2.0	ND		0.0 - 0.5 Asphalt and sub-base.
16 - 20	NA	1.0	ND		0.5 - 2.0 Brown silt with little sand, gravel, cinders and brick; moist with concrete chunk at 1.5'.
					2.0 – 6.5 Red-brown silt with some sand, little gravel and trace cinders and slag; moist with stiff consistency and low plasticity.
					6.5 - 7.8 Brown silt and sand with some gravel; moist to nearly wet at 7.5'.
					7.8 – 8.0 Black cinders with some green glass; wet.
					8.0 – 10.0 Brown silt and sand; wet.
					10.0 – 12.0 Brown to dark gray peat; moist. Roots, twigs and leaves observed in peat. 12.0 – 14.0 Gray clay with fine sand stringers. High plasticity, soft consistency.
					14.0 – 16.0 Red-brown silt with some and little gravel. Gravel unit 15.5 to 15.7; very moist to nearly saturated at 16.0'.
					16.0 – 20.0 Red brown silty clay with little sand and gravel; moist to wet.

BORING #:	MW06	
DATE:	10/6/06	<u>ENVIRON</u> BORING LOG
START TIME:	1030	PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Trevor Tompkins, Megan Utley	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	B. Moriarty	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	
BORING DIA:	2-Inch	
BORING DEPTH	16 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4	NA	4.0	ND		0.0 – 1.0 Asphalt and sub-base.
4 – 8	NA	2.9	ND		1.0-6.0 Brown to red-brown silt with some clay, little sand and gravel, trace brick; moist, no plasticity, medium stiff consistency.
8 – 12	NA	NA	ND		6.0 – 8.0 Gray clay, soft consistency, high plasticity, little organics; moist.
0-12	IVA	IVA	ND		8.0 – 11.5 Soft consistency, high plasticity, few organics; moist.
12 – 16	NA	3.4	NA		11.5 – 13.5 Red clay with very soft consistency, high plasticity; saturated at 11.8'.
					13.5 – 15.0 Red-brown medium sand with some silt; wet.
					15.0 – 16.0 Red-brown silt with little sand and gravel; moist

BORING #:	MW-07	ENVIRON
DATE:	10/6/06	BORING LOG
START TIME:	0841	PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Trevor Tompkins, Megan Utley	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	B. Moriarty	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	AOC 2 – Former Railroad Tracks at Eastern
BORING DIA:	2-Inch	Parking Lot
BORING DEPTH	16 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0 – 4	NA	4.0	ND		0.0 – 0.5 Asphalt and sub-base.
4 – 8	NA	3.5	ND		0.5 – 3.5 Brown silt with some sand and little gravel and brick. Zone of muscovite from 2.5 to 2.7'.
8 – 12	NA	3.2	ND		 3.5 – 4.0 Concrete fragments. 4.0 – 10.0 Brown to red-brown silt and clay with medium soft consistency and medium to low plasticity. Wet sand lens from 7.0 to 7.1,
12 – 16	NA	2.4	ND		with underlying very moist clay. 10.0 – 16.0 Red-brown silty clay with little sand and gravel; moist with medium stiff consistency, medium plasticity.
					*Water present at 7.5 – 8.0'.

BORING #: DATE: START TIME LOGGED BY DRILLING CO DRILLER: RIG: SAMPLING N BORING DIA	: O: METHOD:		BKD1 10/5/0 1432 Trevor Tompkins, TPI Environme B. Moria Geoprobe Truck Direct-Pt 2-Inch	Megan Utley ental Inc. arty c-Mounted ush	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS: Background
BORING DEI	TH		8 Feet	İ .	
ORGANIC V. EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (PPMs)	SAMPLE(S) DESIGNATION	DESCRIPTION
0-4 4-8	NA NA	3.0	ND ND	-BKD1-SS01 (0.0-0.5') for PPMs and barium. -BKD1-SS02 (1.5-2.0') for PPMs and barium. -BKD1-SS03 (3.5-4.0') for PPMs and barium. -BKD1-SS04 (6.0-6.5') for PPMs and barium.	0.0 – 0.4 Brown silt and clay with little sand and organics (grass and roots); moist. 0.4 – 1.5 Light brown silty clay; moist with medium stiff consistency and medium plasticity. 1.5 – 4.0 Red-brown silty clay with medium stiff consistency and medium plasticity with little sand and trace gravel; moist. 4.0 – 8.0 Red-brown silt and clay with little sand and gravel with medium stiff consistency and medium plasticity; moist.

APPENDIX B

Summary Soil Data Tables

	Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York Area Of Concern ACC 01 AC														
	Area Of Concern	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 02
	Location	B101	B101	B101	B102	B102	B102	B103	B104	B104	B105	B105	B106	B106	B201
	ENVIRON Sample ID	B101-SS01	B101-SS02	B101-SS03	B102-SS01	B102-SS02	B102-SS03	B103-SS01	B104-SS01	B104-SS02	B105-SS01	B105-SS02	B106-SS01	B106-SS02	B201-SS01
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	8/30/2006
	Collection Depth (ft)	0.5 - 1	2.5 - 3	3.5 - 4	0.5 - 1	1.5 - 2	3.5 - 4	1.5 - 2	3.5 - 4	6 - 6.5	1.5 - 2	2.5 - 3	1.5 - 2	3.5 - 4	0.2 - 0.7
	Comments														
VOC															
	Acetone	U (0.57)	U (0.54)	0.1 (0.0069)	0.047 (0.0055)	0.035 (0.0054)	0.1 (0.0058)				0.056 B (0.0055)	0.07 B (0.0059)	0.024 B (0.0054)	U (0.0047)	
	Benzene	U (0.11)	U (0.11)	U (0.0014)	U (0.0011)	U (0.0011)	U (0.0012)				0.0053 (0.0011)	0.002 (0.0012)	0.0022 (0.0011)	0.0008 J (0.0009)	
	2-Butanone	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	0.011 (0.0058)				U (0.0055)	U (0.0059)	U (0.0054)	U (0.0047)	
	Carbon Disulfide	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054) (0.0012 J (0.0058)				U (0.0055)	U (0.0059)	U (0.0054)	U (0.0047)	
	Chlorobenzene	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	U (0.0058)				U (0.0055)	U (0.0059)	0.0017 J (0.0054)	U (0.0047)	
	1,1-Dichloroethane	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	U (0.0058)				0.0042 J (0.0055)	0.0012 J (0.0059)	U (0.0054)	U (0.0047)	
	1,2-Dichloroethane	U (0.23)	U (0.22)	U (0.0027)	U (0.0022)	U (0.0021)	U (0.0023)				U (0.0022)	U (0.0024)	U (0.0022)	U (0.0019)	
	cis-1,2-Dichloroethene	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	U (0.0058)				U (0.0055)	U (0.0059)	U (0.0054)	U (0.0047)	
	Ethylbenzene	0.27 J (0.46)	U (0.43)	U (0.0055)	U (0.0044)	U (0.0043)	U (0.0046)				0.0025 J (0.0044)	0.0023 J (0.0047)	0.012 (0.0043)	U (0.0037)	
	Tetrachloroethene	U (0.11)	U (0.11)	U (0.0014)	U (0.0011)	U (0.0011)	U (0.0012)				U (0.0011)	U (0.0012)	0.0029 (0.0011)	U (0.0009)	
	Toluene	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	U (0.0058)				0.0009 J (0.0055)	U (0.0059)	0.0046 J (0.0054)	U (0.0047)	
	1,1,1-Trichloroethane	U (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	U (0.0058)				U (0.0055)	U (0.0059)	0.0012 J (0.0054)	U (0.0047)	
	Trichloroethene	U (0.11)	U (0.11)	U (0.0014)	U (0.0011)	U (0.0011)	U (0.0012)				U (0.0011)	U (0.0012)	0.0008 J (0.0011)	U (0.0009)	
	Xylene (Total)	0.74 (0.57)	U (0.54)	U (0.0069)	U (0.0055)	U (0.0054)	U (0.0058)				0.012 (0.0055)	0.0093 (0.0059)	0.095 (0.0054)	0.0012 J (0.0047)	
SVOC															
	Acenaphthene												U (0.38)	U (0.39)	
	Acenaphthylene												U (0.38)	U (0.39)	
	Anthracene												U (0.38)	U (0.39)	
	Benzo(a)anthracene												U (0.038)	U (0.039)	
	Benzo(a)pyrene												U (0.038)	U (0.039)	
	Benzo(b)fluoranthene												0.01 J (0.038)	U (0.039)	
	Benzo(g,h,i)perylene												U (0.38)	U (0.39)	
	Benzo(k)fluoranthene												U (0.038)	U (0.039)	
	bis(2-Ethylhexyl)phthalate												7.1 (0.38)	U (0.39)	
	Carbazole												U (0.38)	, ,	
	4-Chloroaniline												U (0.38)		
	Chrysene												U (0.38)		
	Dibenz(a,h)anthracene												U (0.038)		
	Dibenzofuran												U (0.38)		
	1,2-Dichlorobenzene												U (0.38)		
	1,4-Dichlorobenzene												U (0.38)		
	3,3'-Dichlorobenzidine												U (0.75)		
	Dimethylphthalate												U (0.38)		
	Di-n-butylphthalate												U (0.38)		
	Fluoranthene												0.014 J (0.38)		
	Fluorene												U (0.38)		
	Hexachlorobenzene												U (0.038)		
	Indeno(1,2,3-cd)pyrene												U (0.038)	, ,	
	2-Methylnaphthalene												0.0087 J (0.38)		
	Naphthalene												0.011 J (0.38)		
	3-Nitroaniline												U (0.75)		
	4-Nitroaniline												U (0.75)	U (0.78)	

TABLE 1
Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

				Sumn	narized Analytica	ll Results for Aug	ust-October 2006	Soil Sampling I	Program - Sun	Chemical, Stat	en Island, New Yor	·k			
	Area Of Concern	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 01	AOC 02
	Location	B101	B101	B101	B102	B102	B102	B103	B104	B104	B105	B105	B106	B106	B201
	ENVIRON Sample ID	B101-SS01	B101-SS02	B101-SS03	B102-SS01	B102-SS02	B102-SS03	B103-SS01	B104-SS01	B104-SS02	B105-SS01	B105-SS02	B106-SS01	B106-SS02	B201-SS01
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	8/30/2006
	Collection Depth (ft)	0.5 - 1	2.5 - 3	3.5 - 4	0.5 - 1	1.5 - 2	3.5 - 4	1.5 - 2	3.5 - 4	6 - 6.5	1.5 - 2	2.5 - 3	1.5 - 2	3.5 - 4	0.2 - 0.7
	Comments														
	Nitrobenzene												U (0.038)	U (0.039)	
	Phenanthrene												0.011 J (0.38)	U (0.39)	
	Pyrene												0.014 J (0.38)	U (0.39)	
	1,2,4-Trichlorobenzene												U (0.038)	U (0.039)	
PCB															
	PCBs (total)														
	Aroclor-1248														
	Aroclor-1254														
	Aroclor-1268														
INORG															
	Antimony	3.6 (1.1)		U (1.1)	2.6 (1.1)	U (1.3)	2.8 (1.4)	U (1.1)	U (1.1)	` '	U (1.2)	U (1.2)	U (1.1)	U (1.1)	U (1.1)
	Arsenic	10.2 (1)	9.6 (1)	4.7 (1)	5.4 (1)	2.2 (0.73)	6.5 (0.75)	3.5 (1)	3.9 (1)	` /	7.6 (1.1)	5.8 (1.1)	3.4 (1)	4.3 (1)	3.8 (0.63)
	Barium	213 (0.3)	127 (0.3)	69.6 (0.3)	153 (0.29)	46.2 (0.39)	48.6 (0.4)	73.2 (0.29)	, ,	42.7 B (0.31)	177 (0.32)	80.4 (0.32)	49.4 (0.29)	44.2 B (0.3)	
	· · · · · · · · · · · · · · · · · · ·	0.44 B (0.023)			0.43 (0.022)	0.51 (0.068)	, ,	0.31 B (0.022)	, ,	` '	0.44 B (0.025)	0.68 (0.025)	0.64 (0.023)	0.69 (0.023) 0	
	Cadmium	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.091)	, ,	0.16 B (0.11)	` ′	U (0.12)	1 B (0.12)	0.35 B (0.12)	0.15 B (0.11)	0.17 B (0.12) 0	
	Chromium	, ,	84.5 (0.64)	` ,	70.9 (0.63)	40.1 (0.36)	511 (0.38)	, ,	63.7 (0.65)	, ,	53.1 (0.69)	57.5 (0.69)	40.5 (0.63)	38.5 (0.65)	21.6 (0.32)
	Copper	, ,	76.2 (0.71)	, ,	55.5 (0.7)	23.8 (0.84)	41.6 (0.87)	, ,	23.9 (0.72)	16.2 (0.73)	123 (0.76)	47.7 (0.76)	26 (0.7)	29 (0.72)	32.4 (0.73)
	Lead	290 (0.51)	` '	` /	126 (0.49)	22.8 (0.61)	182 (0.64)	109 (0.49)	9.5 (0.51)	7.1 (0.52)	244 (0.54)	110 (0.54)	9.1 (0.5)	7.7 (0.51)	80.9 (0.53)
	•	0.32 (0.019)	` ′	, ,	0.26 (0.019)	0.08 (0.019)	0.14 (0.02)	0.09 (0.016)	U (0.019)	U (0.017)	0.18 (0.021)	0.06 (0.018)	0.02 B (0.019)	, ,	0.07 (0.018)
	Nickel	100 (0.9)		, ,	116 (0.88)	162 (0.54)	173 (0.57)	41.1 (0.87)	226 (0.91)	229 (0.92)	85.1 (0.96)	131 (0.96)	134 (0.88)	139 (0.91)	28.9 (0.47)
	Selenium	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (0.95)	U (0.99)	1.6 (1.1)	1.6 (1.1)	U (1.1)	1.8 (1.2)	1.7 (1.2)	U (1.1)	1.5 (1.1)	U (0.83)
	Silver	U (0.28)	U (0.27)	U (0.27)	U (0.27)	U (0.32)	U (0.33)	U (0.27)	U (0.28)	U (0.28)	U (0.3)	U (0.3)	U (0.27)	` ,	0.35 B (0.28)
N T 4	Zinc	118 (1.3)	81.8 (1.3)	86.9 (1.3)	110 (1.3)	40.4 (1.3)	685 (1.4)	96.8 (1.3)	63.3 (1.4)	34.8 (1.4)	189 (1.4)	100 (1.4)	34.4 (1.3)	37.9 (1.3)	77.4 (1.1)

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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AOC 02

OC 02

AOC 02

Area Of Concern

AOC 02

AOC 02

	Location	B201	B201	B201	B202	B202	B202	B202	B202	B202	B203	B203	B204	B204	B204	MW05	MW05
	ENVIRON Sample ID		B201-SS02	B201-SS02		B202-SS01	B202-SS02	B202-SS02	B202-SS02D	B202-SS03	B203-SS01	B203-SS02		B204-SS01D	B204-SS02		MW5-SS02
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	10/5/2006	10/5/2006	10/6/2006	10/6/2006	10/6/2006	8/30/2006	8/30/2006
	Collection Depth (ft)	0.2 - 0.7	1.5 - 2	1.5 - 2	0.2 - 0.7	0.2 - 0.7	1.5 - 2	1.5 - 2	1.5 - 2	3.5 - 4	0.5 - 1	1.5 - 2	1 - 1.5	1 - 1.5	2 - 2.5	0.5 - 1	1.5 - 2
	Comments	0.2 0.7	1.5 2	1.5 2	0.2 0.7	0.2 0.7	1.0 2	1.5 2	Duplicate	3.5	0.5	1.5 2	1 1.5	Duplicate	2 2.3	0.5	1.5 2
VOC														Вирпеше			
100	Acetone																
	Benzene																
	2-Butanone																
	Carbon Disulfide																
	Chlorobenzene																
	1,1-Dichloroethane																
	1,2-Dichloroethane																
	cis-1,2-Dichloroethene																
	Ethylbenzene																
	Tetrachloroethene																
	Toluene																
	1,1,1-Trichloroethane																
	Trichloroethene																
	Xylene (Total)																
SVOC	•																
	Acenaphthene (0.045 J (1.8)		0.017 J (0.37)	(0.058 J (1.8)	0	.054 J (0.38)			0.43 J (1.9)	U (0.38)	0.033 J (0.38)	0.014 J (0.38)	U (0.37)		
	Acenaphthylene	U (1.8)		0.071 J (0.37)		0.18 J (1.8)		0.43 (0.38)			0.15 J (1.9)	U (0.38)	0.091 J (0.38)	0.11 J (0.38)	U (0.37)		
	Anthracene	U (1.8)		0.082 J (0.37)		0.33 J (1.8)		0.34 J (0.38)			1.7 J (1.9)	U (0.38)	0.15 J (0.38)	0.12 J (0.38)	U (0.37)		
	Benzo(a)anthracene	0.2 (0.18)		0.31 (0.037)		1.5 (0.18)		1 (0.038)			4.3 (0.19)	U (0.038)	0.41 (0.038)	0.26 (0.038)	U (0.037)		
	Benzo(a)pyrene	U (0.18)		0.3 (0.037)		1.5 (0.18)		1.1 (0.038)			4.3 (0.19)	U (0.038)	0.46 (0.038)	0.32 (0.038)	U (0.037)		
	Benzo(b)fluoranthene	U (0.18)		0.36 (0.037)		1.1 (0.18)		1.8 (0.038)			4.2 (0.19)		, ,	0.45 (0.038)	U (0.037)		
	Benzo(g,h,i)perylene	U (1.8)		0.09 J (0.37)		0.32 J (1.8)		0.33 J (0.38)			1 J (1.9)	U (0.38)	U (0.38)	U (0.38)	U (0.37)		
	Benzo(k)fluoranthene	U (0.18)		U (0.037)		1.6 (0.18)		2 (0.038)			4.8 (0.19)		, ,	0.31 (0.038)	U (0.037)		
	bis(2-Ethylhexyl)phthalate	1.1 J (1.8)		0.44 (0.37)		U (1.8)		0.12 J (0.38)			U (1.9)	U (0.38)		0.096 J (0.38)	U (0.37)		
	Carbazole	U (1.8)		0.031 J (0.37)		U (1.8)		0.16 J (0.38)			0.23 J (1.9)		0.049 J (0.38)		U (0.37)		
	4-Chloroaniline	U (1.8)		U (0.37)		U (1.8)		U (0.38)			U (1.9)	U (0.38)	U (0.38)	U (0.38)	U (0.37)		
		0.35 J (1.8)		0.33 J (0.37)		1.4 J (1.8)		1.5 (0.38)			4.7 (1.9)	U (0.38)		0.34 J (0.38)	U (0.37)		
	Dibenz(a,h)anthracene	U (0.18)		U (0.037)		U (0.18)		0.17 (0.038)			U (0.19)	U (0.038)	U (0.038)	U (0.038)	U (0.037)		
	Dibenzofuran (0.018 J (0.37)		U (1.8)	0	.091 J (0.38)			0.17 J (1.9)	U (0.38)	0.06 J (0.38)		U (0.37)		
	1,2-Dichlorobenzene	U (1.8)		U (0.37)		U (1.8)		U (0.38)			U (1.9)	U (0.38)	U (0.38)	U (0.38)	U (0.37)		
	1,4-Dichlorobenzene	U (1.8)		U (0.37)		U (1.8)		U (0.38)			U (1.9)	U (0.38)	U (0.38)	U (0.38)	U (0.37)		
	3,3'-Dichlorobenzidine	U (3.6)		0.09 J (0.74)		U (3.6)		U (0.77)			U (3.8)	U (0.76)	U (0.77)	U (0.77)	U (0.74)		
	Dimethylphthalate Di-n-butylphthalate	U (1.8) U (1.8)		U (0.37) U (0.37)		U (1.8) U (1.8)		U (0.38) U (0.38)			U (1.9) U (1.9)	U (0.38) U (0.38)	U (0.38) U (0.38)	U (0.38) U (0.38)	U (0.37) U (0.37)		
	Fluoranthene			0.42 (0.37)		1.8 J (1.8)		1.7 (0.38)			8.1 (1.9)	U (0.38)		0.35 J (0.38)	U (0.37)		
		0.23 J (1.8) 0.064 J (1.8)		0.42 (0.37) 0.021 J (0.37)		0.06 J (1.8)	0	.059 J (0.38)			0.42 J (1.9)		0.94 (0.38) 0.035 J (0.38)		U (0.37)		
	Hexachlorobenzene	U (0.18)	,	U (0.037)		U (0.18)	U	U (0.038)			U (0.19)	U (0.38)	U (0.038)	U (0.038)	U (0.037)		
	Indeno(1,2,3-cd)pyrene	U (0.18)	(0.074 (0.037)		0.35 (0.18)		0.4 (0.038)			1.2 (0.19)	U (0.038)	U (0.038)	U (0.038)	U (0.037)		
	2-Methylnaphthalene			0.025 J (0.37)		U (1.8)		0.4 (0.038) 0.11 J (0.38)			0.12 J (1.9)		0.082 J (0.38)		U (0.37)		
	Naphthalene Naphthalene			0.025 J (0.37) 0.035 J (0.37)		U (1.8)		0.22 J (0.38)			0.12 J (1.9)	U (0.38)		0.086 J (0.38)	U (0.37)		
	3-Nitroaniline	U (3.6)		U (0.74)		U (3.6)		U (0.77)			U (3.8)	U (0.76)	U (0.77)	U (0.77)	U (0.74)		
	4-Nitroaniline	U (3.6)		U (0.74)		U (3.6)		U (0.77)			0.74 J (3.8)	U (0.76)	U (0.77)	U (0.77)	U (0.74)		
	. Tationimic	C (3.0)		S (3.7 1)		C (3.0)		0 (0.77)			J. 10 (J.O)	5 (5.75)	0 (0.77)	S (0.77)	5 (0.71)		

TABLE 1
Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical Staten Island New York

				Summ	arized Analyt	ical Results fo	r August-Octo	ber 2006 Soil S	Sampling Progra	am - Sun Chei	nical, Staten Isl	and, New York					
•	Area Of Concern	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02	AOC 02
	Location	B201	B201	B201	B202	B202	B202	B202	B202	B202	B203	B203	B204	B204	B204	MW05	MW05
	ENVIRON Sample ID	B201-SS01	B201-SS02	B201-SS02	B202-SS01	B202-SS01	B202-SS02	B202-SS02	B202-SS02D	B202-SS03	B203-SS01	B203-SS02	B204-SS01	B204-SS01D	B204-SS02	MW5-SS01	MW5-SS02
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	8/30/2006	10/5/2006	10/5/2006	10/6/2006	10/6/2006	10/6/2006	8/30/2006	8/30/2006
	Collection Depth (ft)	0.2 - 0.7	1.5 - 2	1.5 - 2	0.2 - 0.7	0.2 - 0.7	1.5 - 2	1.5 - 2	1.5 - 2	3.5 - 4	0.5 - 1	1.5 - 2	1 - 1.5	1 - 1.5	2 - 2.5	0.5 - 1	1.5 - 2
	Comments								Duplicate					Duplicate			
	Nitrobenzene	U (0.18)		U (0.037)		U (0.18)		U (0.038)			0.36 (0.19)	U (0.038)	U (0.038)	U (0.038)	U (0.037)		
	Phenanthrene	0.31 J (1.8)		0.28 J (0.37)		0.84 J (1.8)		0.8 (0.38)			6.5 (1.9)	0.025 J (0.38)	0.56 (0.38)	0.22 J (0.38)	U (0.37)		
	Pyrene	0.51 J (1.8)		0.63 (0.37)		3.2 (1.8)		1.8 (0.38)			12 (1.9)	U (0.38)	0.92 (0.38)	0.59 (0.38)	U (0.37)		
	1,2,4-Trichlorobenzene	U (0.18)		0.022 J (0.037)		U (0.18)		U (0.038)			U (0.19)	U (0.038)	U (0.038)	U (0.038)	U (0.037)		
PCB																	
	PCBs (total)																
	Aroclor-1248																
	Aroclor-1254																
	Aroclor-1268																
INORG																	
	Antimony		U (1.3)		U (1.3)		U (1.3)		U (1.2)	U (1.2)	, ,	U (1.3)	U (1.3)	1.4 B (1.3)	U (1.3)	U (1.3)	U (1.3)
	Arsenic		5.8 (0.72)		8.2 (0.71)		2.2 (0.72)		2.8 (0.65)	2 (0.67)	31.4 (0.74)	1.5 (0.73)	8 (0.74)	5.8 (0.74)	2.1 (0.71)	8.7 (0.72)	9.7 (0.72)
	Barium										` '	41.9 B (0.39)	193 (0.39)	` ′	36.5 B (0.38)		
	Beryllium		0.49 (0.068)		0.43 (0.067)		0.54 (0.067)		, ,	, ,	0.43 B (0.069)	, ,	0.4 B (0.069)	0.36 B (0.069)	` ′	0.48 (0.067)	` ,
	Cadmium	(0.6 B (0.091)		U (0.089)		U (0.09)		U (0.081)	U (0.084)	3.7 (0.092)	, ,	0.09 B (0.092)	0.1 B (0.093)	` ,	0.13 B (0.089)	` /
	Chromium		57.4 (0.36)		26.1 (0.35)		26.3 (0.36)		25.9 (0.32)	21.2 (0.34)	1060 (0.37)	47.7 (0.36)	28.3 (0.37)	22.7 (0.37)	38.9 (0.35)	35.4 (0.36)	, ,
	Copper		55.4 (0.84)		61.1 (0.82)		24.6 (0.83)		29 (0.75)	21.5 (0.78)	154 (0.85)	19.4 (0.84)	56.2 (0.85)	37.8 (0.86)	26.7 (0.82)	53.4 (0.83)	51.5 (0.84)
	Lead		268 (0.61)		130 (0.6)		11.3 (0.61)		9.1 (0.55)	6.8 (0.57)	10300 (3.1)	57.2 (0.61)	237 (0.62)	177 (0.63)	21.1 (0.6)	147 (0.6)	287 (0.61)
	Mercury		0.36 (0.019)		0.57 (0.018)		0.24 (0.019)		0.19 (0.019)	U (0.019)	1.6 (0.019)	0.07 (0.019)	0.38 (0.019)	, ,	0.03 B (0.018)	0.27 (0.019)	, ,
	Nickel		98.5 (0.54)		80.9 (0.53)		121 (0.54)		143 (0.49)	38.9 (0.5)	57.7 (0.55)	157 (0.54)	28.8 (0.55)	28.2 (0.56)	341 (0.53)	116 (0.54)	123 (0.54)
	Selenium		U (0.95)		U (0.93)		U (0.94)		U (0.85)	U (0.88)	3.9 (0.97)	1 B (0.95)	1.1 (0.97)	1.6 (0.97)	U (0.93)	U (0.94)	U (0.95)
	Silver	(0.41 B (0.32)		0.39 B (0.31)		U (0.31)		0.4 B (0.28)	U (0.29)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	, ,	0.42 B (0.31)	, ,
	Zinc		125 (1.3)		113 (1.3)		43.5 (1.3)		81 (1.2)	35.4 (1.2)	336 (1.3)	34.3 (1.3)	205 (1.3)	163 (1.3)	88.9 (1.3)	164 (1.3)	157 (1.3)

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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ENVIRON

							igust-October 2									
	Area Of Concern	AOC 02	AOC 02	AOC 03	AOC 03	AOC 03	AOC 04	AOC 04	AOC 04	AOC 05	AOC 05	AOC 06	AOC 06	AOC 06	AOC 06	AOC 06
	Location	MW05	MW05	B301	B301	B302	B401	B402	B402	MW03	MW03	B601	B602	B603	B604	B604
	ENVIRON Sample ID	MW5-SS03	MW5-SS03D	B301-SS01	B301-SS02	B302-SS01	B401-SS01	B402-SS01	B402-SS02	MW3-SS01	MW3-SS02	B601-SS01	B602-SS01	B603-SS01	B604-SS01	B604-SS02
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/30/2006	8/30/2006	8/30/2006	8/30/2006	10/5/2006	10/4/2006	10/5/2006	10/5/2006	8/28/2006	8/28/2006	8/28/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006
	Collection Depth (ft)	3.5 - 4	3.5 - 4	0.3 - 0.8	2 - 2.5	1 - 1.5	1.5 - 2	1 - 1.5	2 - 2.5	0.2 - 0.7	1.5 - 2	1.8 - 2	2 - 2.5	1 - 1.5	1.5 - 2	3.5 - 4
	Comments		Duplicate													
VOC																
	Acetone														U (0.59)	U (0.53)
	Benzene														U (0.12)	U (0.11)
	2-Butanone														U (0.59)	U (0.53)
	Carbon Disulfide														U (0.59)	U (0.53)
	Chlorobenzene														U (0.59)	U (0.53)
	1,1-Dichloroethane														U (0.59)	U (0.53)
	1,2-Dichloroethane														U (0.24)	U (0.21)
	cis-1,2-Dichloroethene														U (0.59)	U (0.53)
	Ethylbenzene														U (0.47)	U (0.43)
	Tetrachloroethene														U (0.12)	U (0.11)
	Toluene														U (0.59)	U (0.53)
	1,1,1-Trichloroethane														U (0.59)	U (0.53)
	Trichloroethene														U (0.12)	U (0.11)
	Xylene (Total)														U (0.59)	U (0.53)
SVOC	Tiylene (Total)														C (0.57)	0 (0.55)
5100	Acenaphthene														U (0.41)	U (0.41)
	Acenaphthylene														U (0.41)	U (0.41)
	Anthracene														U (0.41)	U (0.41)
	Benzo(a)anthracene														U (0.041)	U (0.041)
	Benzo(a)pyrene														U (0.041)	U (0.041)
	Benzo(b)fluoranthene														U (0.041)	U (0.041)
	Benzo(g,h,i)perylene														U (0.41)	U (0.41)
	Benzo(k)fluoranthene														U (0.041)	U (0.041)
	bis(2-Ethylhexyl)phthalate														0.84 (0.41)	1.9 (0.41)
	Carbazole														U (0.41)	U (0.41)
	4-Chloroaniline														U (0.41)	U (0.41)
	Chrysene														U (0.41)	U (0.41)
	Dibenz(a,h)anthracene														U (0.041)	U (0.041)
	Dibenzofuran														U (0.41)	U (0.41)
	1,2-Dichlorobenzene														U (0.41)	U (0.41)
	1,4-Dichlorobenzene														U (0.41)	U (0.41)
	3,3'-Dichlorobenzidine														U (0.41)	U (0.41)
	Dimethylphthalate														U (0.41)	U (0.41)
	Di-n-butylphthalate														U (0.41)	U (0.41)
	Fluoranthene														U (0.41)	U (0.41)
	Fluorene														U (0.41)	U (0.41)
	Hexachlorobenzene														U (0.41)	U (0.041)
	Indeno(1,2,3-cd)pyrene														U (0.041) U (0.041)	U (0.041) U (0.041)
	2-Methylnaphthalene														U (0.041)	U (0.41)
	Naphthalene														U (0.41) U (0.41)	U (0.41) U (0.41)
	3-Nitroaniline														U (0.41) U (0.81)	U (0.41) U (0.83)
	4-Nitroaniline															
	4-muoannne														U (0.81)	U (0.83)

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 $TABLE\ 1$ Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

-				Sumn	narized Analytic	cal Results for A	lugust-October 2	2006 Soil Samp	ling Program -	Sun Chemical, S	Staten Island, N	lew York				
	Area Of Concern	AOC 02	AOC 02	AOC 03	AOC 03	AOC 03	AOC 04	AOC 04	AOC 04	AOC 05	AOC 05	AOC 06	AOC 06	AOC 06	AOC 06	AOC 06
	Location	MW05	MW05	B301	B301	B302	B401	B402	B402	MW03	MW03	B601	B602	B603	B604	B604
	ENVIRON Sample ID	MW5-SS03	MW5-SS03D	B301-SS01	B301-SS02	B302-SS01	B401-SS01	B402-SS01	B402-SS02	MW3-SS01	MW3-SS02	B601-SS01	B602-SS01	B603-SS01	B604-SS01	B604-SS02
	Matrix	Soil	Soil	l Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/30/2006	8/30/2006	8/30/2006	8/30/2006	10/5/2006	10/4/2006	10/5/2006	10/5/2006	8/28/2006	8/28/2006	8/28/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006
	Collection Depth (ft)	3.5 - 4	3.5 - 4	0.3 - 0.8	2 - 2.5	1 - 1.5	1.5 - 2	1 - 1.5	2 - 2.5	0.2 - 0.7	1.5 - 2	1.8 - 2	2 - 2.5	1 - 1.5	1.5 - 2	3.5 - 4
	Comments		Duplicate	;												
	Nitrobenzene														U (0.041)	U (0.041)
	Phenanthrene														U (0.41)	U (0.41)
	Pyrene														U (0.41)	U (0.41)
	1,2,4-Trichlorobenzene														U (0.041)	U (0.041)
PCB																
	PCBs (total)															
	Aroclor-1248															
	Aroclor-1254															
	Aroclor-1268															
INORG																
	Antimony	U (1.3)	U (1.3)	, ,	U (1.3)	, ,	2.1 B (1.5)	1.1 B (1.1)	U (1.2)	, ,	U (1.3)	, ,	` ′	U (1.1)	U (1.2)	U (1.2)
	Arsenic	4.4 (0.72)	3.5 (0.72)	44.4 (0.76)	10.4 (0.73)	188 (1.1)	30.8 (0.8)	559 (1)	97.5 (1.1)	4 (0.75)	4 (0.74)	8.9 (0.77)	5.1 (1)	1.4 (1)	3.8 (1.1)	4.5 (1.1)
	Barium					584 (0.32)	1250 (0.43)	175 (0.3)	87.3 (0.31)	1320 (0.4)	, ,	2280 (0.41)	` '	1800 (0.29)	54.2 (0.32)	52.9 (0.32)
	•	0.53 (0.067)	, ,	, ,	, ,	, ,	, ,	, ,	, ,	0.14 B (0.071)	, ,	, ,	, ,	, ,	, ,	, ,
	Cadmium	U (0.09)	0.17 B (0.09)	` /	0.23 B (0.092)	1.3 (0.12)	U (0.1)	` ′	` /	0.09 B (0.094)	U (0.092)	5 (0.097)	` ′	` /	0.13 B (0.12)	` ′
		29.9 (0.36)	26.1 (0.36)	` ′	74.9 (0.37)	146 (0.68)	144 (0.4)	265 (0.64)	67.5 (0.66)	, ,	41.2 (0.37)	, ,	` '	15.3 (0.63)	25.7 (0.68)	25.6 (0.7)
	Copper	33 (0.83)	30.1 (0.83)	` ′	70 (0.85)	165 (0.75)	48.7 (0.93)	164 (0.71)	45.7 (0.73)	52.8 (0.87)	25.4 (0.85)	, ,	` '	34.6 (0.7)	13 (0.76)	13.1 (0.77)
	Lead	61 (0.61)	22.3 (0.61)	` /	178 (0.62)	1420 (0.53)	1460 (0.68)	681 (0.5)	28.9 (0.52)	970 (0.64)	` /	2060 (0.65)	` ′	191 (0.5)	9.5 (0.54)	11.3 (0.55)
	•	0.12 (0.019)	0.06 (0.016)	` '	0.24 (0.019)	0.51 (0.02)	0.44 (0.021)	0.08 (0.019)	U (0.02)	0.07 (0.02)	0.05 (0.016)	, ,	0.11 (0.019)	0.06 (0.019)	0.02 B (0.02)	0.04 (0.018)
	Nickel	139 (0.54)	150 (0.54)	` '	186 (0.55)	33.5 (0.95)	49 (0.6)	96 (0.89)	124 (0.92)	25.3 (0.57)	63.1 (0.55)	, ,	94.9 (0.89)	10.5 (0.88)	41.6 (0.95)	43.4 (0.97)
	Selenium Silver	U (0.94) U (0.31)	U (0.94)	U (1) 0.51 B (0.33)	U (0.96)	6.1 (1.2)	U (1.1)	U (1.1)	U (1.1)	, ,	U (0.97)	U(1)	1.1 (1.1)	1.8 (1.1)	U (1.2)	1.4 (1.2)
	Zinc	` /	66.6 (1.3)	` /	243 (1.3)	U (0.29) 75.1 (1.4)	U (0.35) 37.4 (1.5)	U (0.27) 49.6 (1.3)	U (0.28) 34.3 (1.4)	U (0.33) 41.8 (1.4)	U (0.32) 31 (1.3)	U (0.34) 152 (1.4)	U (0.27) 240 (1.3)	U (0.27) 38.7 (1.3)	U (0.29) 34.8 (1.4)	U (0.3) 34.8 (1.4)
	Zinc	34.0 (1.3)	00.0 (1.3)	33U (1.4)	245 (1.5)	/5.1 (1.4)	37.4 (1.3)	49.0 (1.3)	34.3 (1.4)	41.8 (1.4)	31 (1.3)	152 (1.4)	240 (1.5)	38.7 (1.3)	34.8 (1.4)	34.8 (1.4)

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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			Sumr	narized Analy	ytical Results	for August-Oc		BLE 1 Il Sampling Prog	gram - Sun Chei	mical, Staten Isl	land, New York					
Area Of Concer	n AOC 06	AOC 06	AOC 06	AOC 06	AOC 06	AOC 06	AOC 06	AOC 06	AOC 07	AOC 07	AOC 07	AOC 07	AOC 07	AOC 08	AOC 08	AOC 09
Locatio	n B604	B605	B606	B606	MW02	MW02	MW02	MW02	B701	B701	B702	B702	B703	B801	B801	B901
ENVIRON Sample II	D B604-SS03	B605-SS01	B606-SS01 I	B606-SS01D	MW2-SS01	MW2-SS02	MW02-SS01 N	/W02-SS01D	B701-SS01	B701-SS02	B702-SS01	B702-SS02	B703-SS01	B801-SS01	B801-SS02	B901-SS01
Matri	x Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Metho	d Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
Collection Dat	e 10/5/2006	10/5/2006	10/5/2006	10/5/2006	8/28/2006	8/28/2006	10/6/2006	10/6/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	10/4/2006	8/28/2006	8/28/2006	8/28/2006
Collection Depth (fo	4.5 - 5	1.5 - 2	1.5 - 2	1.5 - 2	2 - 2.5	4 - 4.5	1.5 - 2	1.5 - 2	0.5 - 1	1.5 - 2	0.5 - 1	2 - 2.5	0.5 - 1	0.5 - 1	2 - 2.5	0.5 - 1
Comment	ts			Duplicate				Duplicate								
VOC																
Aceton	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057) 0.	019 B (0.0046)
Benzen	e U (0.12)									U (0.0011)		U (0.0009)			U (0.0011) 0.0	0008 J (0.0009)
2-Butanon	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
Carbon Disulfid	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
Chlorobenzen	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
1,1-Dichloroethan	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
1,2-Dichloroethan	e U (0.23)									U (0.0022)		U (0.0017)			U (0.0023)	U (0.0018)
cis-1,2-Dichloroethen	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
Ethylbenzen	e U (0.46)									U (0.0044)		U (0.0034)			U (0.0045)	U (0.0037)
Tetrachloroethen	e U (0.12)									U (0.0011)		U (0.0009)			U (0.0011)	U (0.0009)
Toluen	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
1,1,1-Trichloroethan	e U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
Trichloroethen	e U (0.12)									U (0.0011)		U (0.0009)			U (0.0011)	U (0.0009)
Xylene (Total) U (0.58)									U (0.0055)		U (0.0043)			U (0.0057)	U (0.0046)
SVOC																
Acenaphthen	e U (0.41)															
Acenaphthylen	e U (0.41)															
Anthracen	e U (0.41)															
Benzo(a)anthracen	e U (0.041)															
Benzo(a)pyren																
Benzo(b)fluoranthen																
Benzo(g,h,i)perylen																
Benzo(k)fluoranthen																
bis(2-Ethylhexyl)phthalat																
Carbazol	, ,															
4-Chloroanilin	` ,															
Chrysen																
Dibenz(a,h)anthracen																
Dibenzofura	` ,															
1,2-Dichlorobenzen	` ,															
1,4-Dichlorobenzen	, ,															
3,3'-Dichlorobenzidin	, ,															
Dimethylphthalat																
Di-n-butylphthalat																
Fluoranthen	, ,															
Fluoren																
Hexachlorobenzen																
Indeno(1,2,3-cd)pyren																
2-Methylnaphthalen																
Naphthalen																
3-Nitroanilin	e II (0.83)															

ENVIRON

U (0.83) U (0.83)

3-Nitroaniline

4-Nitroaniline

TABLE 1
Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical Staten Island New York

				Sum	marized Analy	ytical Results	for August-C	ctober 2006 So	oil Sampling Pro	gram - Sun Che	emical, Staten Is	sland, New Yor	·k				
-	Area Of Concern	AOC 06	AOC 06	6 AOC 06	AOC 06	AOC 06	AOC 06	AOC 06	AOC 06	AOC 07	AOC 07	AOC 07	AOC 07	AOC 07	AOC 08	AOC 08	AOC 09
	Location	B604	B605	B606	B606	MW02	MW02	MW02	MW02	B701	B701	B702	B702	B703	B801	B801	B901
	ENVIRON Sample ID	B604-SS03	B605-SS01	B606-SS01	B606-SS01D	MW2-SS01	MW2-SS02	MW02-SS01	MW02-SS01D	B701-SS01	B701-SS02	B702-SS01	B702-SS02	B703-SS01	B801-SS01	B801-SS02	B901-SS01
	Matrix	Soil	Soil	l Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	e Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	10/5/2006	10/5/2006	10/5/2006	10/5/2006	8/28/2006	8/28/2006	10/6/2006	10/6/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	10/4/2006	8/28/2006	8/28/2006	8/28/2006
	Collection Depth (ft)	4.5 - 5	1.5 - 2	2 1.5 - 2	1.5 - 2	2 - 2.5	4 - 4.5	1.5 - 2	1.5 - 2	0.5 - 1	1.5 - 2	0.5 - 1	2 - 2.5	0.5 - 1	0.5 - 1	2 - 2.5	0.5 - 1
	Comments				Duplicate				Duplicate								
	Nitrobenzene	U (0.041)															
	Phenanthrene	U (0.41)															
	Pyrene	U (0.41)															
	1,2,4-Trichlorobenzene	U (0.041)															
PCB																	
	PCBs (total)																
	Aroclor-1248																
	Aroclor-1254																
N IOD C	Aroclor-1268																
INORG	A	II (1.2)	11 (1 1)	2.1 D (1.2)	1 4 D (1 2)	II (1 4)	II (1.2)	II (1.2)	II (1.2)	0.6 (1.4)	27 (15)	11 (1.2)	11 (1.2)	10.0 (1.2)	11 (1 4)	II (1 4)	II (1.1)
	Antimony	U (1.2)	U (1.1)	` /	` ′	` /	` ′	, ,	U (1.3)	9.6 (1.4)	2.7 (1.5)	U (1.3)	, ,	, ,	U (1.4) 4.1 (0.78)	U (1.4)	U (1.1)
	Arsenic Barium	5.2 (1.1)	4.4 (1)	1940 (0.31)	, ,	11.6 (0.77)	, ,	, ,	2.9 (0.72) 64.4 (0.38)	7.3 (0.76) 428 (0.4)	6.9 (0.82) 164 (0.44)	1.6 (0.71) 29.9 B (0.38)	1.5 (0.7) 27 B (0.37)	` ,	64.8 (0.41)	2.2 (0.78)	3.9 (0.99) 59.4 (0.29)
		` ′	, ,	0.4 B (0.024)	, ,	, ,	, ,	, ,	` ′	0.25 B (0.071)	` ′	` ′	0.33 B (0.066)	` ,	, ,	,	0.5 (0.022)
	•	, ,	` '	0.55 B (0.12)	, ,	` ,	, ,	0.04 (0.007) 0.17 B (0.09)	0.39 (0.008) 0.47 B (0.09)	, ,	0.27 B (0.077)	U (0.089)	, ,	0.45 B (0.09)	U (0.097)	` ′	U (0.11)
		` ′	, ,	75.4 (0.67)	` '	, ,	` ′	` ′	47.7 (0.36)	45 (0.38)	45 (0.41)	37.3 (0.36)	, ,	` ′	` /	` /	29.7 (0.62)
		` '	, ,	` '	` ′	, ,	, ,	` /	40.2 (0.83)	94.9 (0.87)	124 (0.95)	16.1 (0.82)	17.4 (0.81)	, ,	24.9 (0.9)	17.3 (0.9)	29.3 (0.68)
	**	11.9 (0.55)	, ,	` '	175 (0.53)	, ,	6.3 (0.61)	, ,	40.1 (0.61)	884 (0.64)	139 (0.69)	14.3 (0.6)	5.2 (0.59)	, ,	10.4 (0.66)	7.7 (0.66)	61.1 (0.49)
		0.05 (0.021)	` ′		2.8 (0.06)	` ,	` ′	0.07 (0.016)	0.03 (0.019)	0.76 (0.02)	` ′	0.03 B (0.018)	, ,	0.37 (0.019)	U (0.02)	U (0.017)	0.19 (0.018)
	Nickel	122 (0.97)	54 (0.9)	, ,	, ,	623 (0.58)	, ,	89.9 (0.54)	68.5 (0.54)	75.3 (0.57)	203 (0.62)	181 (0.53)	247 (0.53)	146 (0.54)	278 (0.58)	265 (0.58)	145 (0.86)
	Selenium	1.4 (1.2)	U (1.1)	, ,	U (1.2)		U (0.95)	, ,	U (0.95)	1.5 (0.99)	1.2 B (1.1)	U (0.93)	, ,	U (0.95)	U(1)	U (1)	U (1.1)
	Silver	U (0.3)	U (0.28)		U (0.29)		U (0.32)	U (0.31)	U (0.32)	U (0.33)	U (0.36)	U (0.31)	U (0.31)	U (0.32)	U (0.34)	U (0.34)	U (0.26)
	Zinc	44.9 (1.4)	30.2 (1.3)	68.6 (1.4)	69.7 (1.4)	49.2 (1.4)	33.4 (1.3)	64.2 (1.3)	104 (1.3)	85.7 (1.4)	105 (1.5)	45.5 (1.3)	53.4 (1.3)	339 (1.3)	55 (1.4)	44.6 (1.4)	72 (1.3)
	Zinc	44.9 (1.4)	30.2 (1.3)	68.6 (1.4)	69.7 (1.4)	49.2 (1.4)	33.4 (1.3)	64.2 (1.3)	104 (1.3)	85.7 (1.4)	105 (1.5)	45.5 (1.3)	53.4 (1.3)	339 (1.3)	55 (1.4)	44.6 (1.4)	72 (1.3)

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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				Summarized Ana	Tytical Results	noi August-O	Ctober 2000 3011 3	ampinig i rogran	ii - Suii Cheimeai, S	taten island, ivew i	OIK				
	Area Of Concern	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 13	AOC 13	AOC 14	AOC 14
	Location	B901	B902	B902	B903	B903	B904	B904	B904	B905	B905	B1301	B1301	B1401	B1401
	ENVIRON Sample ID	B901-SS02	B902-SS01	B902-SS02	B903-SS01	B903-SS02	B904-SS01	B904-SS01D	B904-SS02	B905-SS01	B905-SS02	B1301-SS01	B1301-SS02	B1401-SS01	B1401-SS02
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/30/2006	8/30/2006	8/28/2006	8/28/2006
	Collection Depth (ft)	2 - 2.5	0.2 - 0.7	2 - 2.5	0.3 - 0.8	2 - 2.5	0.3 - 0.8	0.3 - 0.8	2 - 2.5	1.5 - 2	3 - 3.5	1.5 - 2	3.5 - 4	0.5 - 1	3.5 - 4
	Comments							Field Duplicate							
VOC															
	Acetone 0.	.021 B (0.0046) 0	.021 B (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	0.032 B (0.0054)	0.028 B (0.005)	0.032 B (0.0046)	0.04 B (0.0048) (0.022 B (0.005)	U (0.62)	U (0.0053)		
	Benzene	U (0.0009)	U (0.0009)	U (0.001)	U (0.0009)	U (0.0009)	U (0.0011)	U (0.001)	U (0.0009)	U (0.001)	U (0.001)	U (0.12)	U (0.001)		
	2-Butanone	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	Carbon Disulfide	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	0.0006 J (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	Chlorobenzene	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	1,1-Dichloroethane	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	1,2-Dichloroethane	U (0.0018)	U (0.0018)	U (0.0019)	U (0.0017)	U (0.0018)	U (0.0022)	U (0.002)	U (0.0018)	U (0.0019)	U (0.002)	U (0.25)	U (0.0021)		
	cis-1,2-Dichloroethene	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	Ethylbenzene	U (0.0036)	U (0.0037)	U (0.0038)	U (0.0034)	U (0.0037)	U (0.0043)	U (0.004)	U (0.0037)	U (0.0038)	U (0.004)	U (0.5)	U (0.0042)		
	Tetrachloroethene	U (0.0009)	U (0.0009)	U (0.001)	U (0.0009)	U (0.0009)	U (0.0011)	U (0.001)	U (0.0009)	U (0.001)	U (0.001)	U (0.12)	U (0.001)		
	Toluene	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	1,1,1-Trichloroethane	U (0.0046)	U (0.0046)	U (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	U (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
	Trichloroethene	U (0.0009)	U (0.0009)	U (0.001)	U (0.0009)	U (0.0009)	U (0.0011)	U (0.001)	U (0.0009)	U (0.001)	U (0.001)	U (0.12)	U (0.001)		
	Xylene (Total)	U (0.0046)	U (0.0046)	0.0008 J (0.0048)	U (0.0043)	U (0.0046)	U (0.0054)	U (0.005)	0.0014 J (0.0046)	U (0.0048)	U (0.005)	U (0.62)	U (0.0053)		
SVOC															
	Acenaphthene											0.032 J (0.75)	U (0.38)	0.014 J (0.38)	U (0.4)
	Acenaphthylene											0.043 J (0.75)	U (0.38)	U (0.38)	0.082 J (0.4)
	Anthracene											0.1 J (0.75)	U (0.38)	0.048 J (0.38)	0.15 J (0.4)
	Benzo(a)anthracene											0.47 (0.075)	U (0.038)	, ,	` ,
	Benzo(a)pyrene											0.54 (0.075)	U (0.038)	0.18 (0.038)	, ,
	Benzo(b)fluoranthene											0.64 (0.075)	U (0.038)	, ,	` ,
	Benzo(g,h,i)perylene											0.26 J (0.75)	, ,	0.058 J (0.38)	, ,
	Benzo(k)fluoranthene											0.76 (0.075)	, ,	, ,	, ,
	bis(2-Ethylhexyl)phthalate											1.2 (0.75)	` ′	0.16 J (0.38)	, ,
	Carbazole											0.047 J (0.75)	U (0.38)	` '	0.041 J (0.4)
	4-Chloroaniline											U (0.75)	U (0.38)	U (0.38)	
	Chrysene											0.74 J (0.75)	U (0.38)		0.52 (0.4)
	Dibenz(a,h)anthracene											U (0.075)	U (0.038)	U (0.038)	U (0.04)
	Dibenzofuran											0.048 J (0.75)	U (0.38)	U (0.38)	U (0.4)
	1,2-Dichlorobenzene											0.032 J (0.75)	U (0.38)	U (0.38)	U (0.4)
	1,4-Dichlorobenzene											0.019 J (0.75)	U (0.38)	U (0.38)	U (0.4)
	3,3'-Dichlorobenzidine											U (1.5)	U (0.77)	U (0.77)	U (0.8)
	Dimethylphthalate											U (0.75)	U (0.38)	U (0.38)	U (0.4)
	Di-n-butylphthalate											U (0.75)	U (0.38)	U (0.38)	U (0.4)
	Fluoranthene Fluorene											0.81 (0.75)	U (0.38)		0.86 (0.4)
	Hexachlorobenzene											0.042 J (0.75)	U (0.38)		0.032 J (0.4)
												U (0.075)	U (0.038)	U (0.038)	U (0.04)
	Indeno(1,2,3-cd)pyrene											0.25 (0.075) 0.19 J (0.75)		0.063 (0.038)	
	2-Methylnaphthalene Naphthalene											0.19 J (0.75) 0.13 J (0.75)	U (0.38)	U (0.38)	U (0.4)
	3-Nitroaniline											U (1.5)	U (0.38) U (0.77)	U (0.38) U (0.77)	U (0.4) U (0.8)
	4-Nitroaniline											U (1.5)	U (0.77)	U (0.77)	U (0.8)
	4-mitroaniine											0 (1.3)	0 (0.77)	0 (0.77)	U (U.8)

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 $TABLE\ 1$ Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

				Summarized Ana	lytical Results	for August-Oc	tober 2006 Soil Sa	ampling Program	- Sun Chemical, Sta	aten Island, New Y	/ork				
	Area Of Concern	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 09	AOC 13	AOC 13	AOC 14	AOC 14
	Location	B901	B902	B902	B903	B903	B904	B904	B904	B905	B905	B1301	B1301	B1401	B1401
	ENVIRON Sample ID	B901-SS02	B902-SS01	B902-SS02	B903-SS01	B903-SS02	B904-SS01	B904-SS01D	B904-SS02	B905-SS01	B905-SS02	B1301-SS01	B1301-SS02	B1401-SS01	B1401-SS02
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/30/2006	8/30/2006	8/28/2006	8/28/2006
	Collection Depth (ft)	2 - 2.5	0.2 - 0.7	2 - 2.5	0.3 - 0.8	2 - 2.5	0.3 - 0.8	0.3 - 0.8	2 - 2.5	1.5 - 2	3 - 3.5	1.5 - 2	3.5 - 4	0.5 - 1	3.5 - 4
	Comments							Field Duplicate							
	Nitrobenzene										(0.019 J (0.075)	U (0.038)	U (0.038)	U (0.04)
	Phenanthrene											0.56 J (0.75)	U (0.38)	0.22 J (0.38)	0.55 (0.4)
	Pyrene											1.5 (0.75)	U (0.38)	0.35 J (0.38)	0.81 (0.4)
	1,2,4-Trichlorobenzene											U (0.075)	U (0.038)	U (0.038)	U (0.04)
PCB															
	PCBs (total)													3.3 (0.39)	U (0.067)
	Aroclor-1248													3.3 (0.39)	U (0.067)
	Aroclor-1254													U (0.39)	U (0.067)
	Aroclor-1268													U (0.39)	U (0.067)
INORG															
	Antimony	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1)	U (1.1)	U (1.3)	U (1.3)	U (1)	U (1.2)
	Arsenic	2.9 (1)	1.2 (1)	3.6 (1)	3 (1)	2.8 (1)	3.7 (1.1)	3.7 (1)	5.1 (1)	6.1 (0.92)	2.3 (1)	33.4 (0.72)	30.3 (0.74)	70.4 (0.94)	4.1 (1.1)
	Barium	63.8 (0.29)	58.6 (0.29)	39.1 B (0.3)	49.9 (0.29)	, ,	58.6 (0.3)	57.6 (0.3)	91.4 (0.3)	105 (0.26)	83.3 (0.3)			, ,	48.4 (0.31)
	Beryllium	0.6 (0.023)	0.41 B (0.022)	0.85 (0.023)			0.56 (0.023)	0.53 (0.023)	0.59 (0.023)	0.52 (0.02)	0.52 (0.023)	0.52 (0.068)	, ,	0.57 (0.021)	, ,
	Cadmium	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.12)	U (0.12)	U (0.11)	0.13 B (0.1)	U (0.11)	0.58 B (0.09)	U (0.092)	U (0.1)	U (0.12)
	Chromium	29.7 (0.63)	26.4 (0.62)	30.4 (0.64)	39.2 (0.63)	46.2 (0.63)	37.5 (0.65)	37.3 (0.65)	37.5 (0.64)	34.8 (0.57)	29.4 (0.64)	46.7 (0.36)	61 (0.37)	, ,	27.3 (0.67)
	Copper	42.6 (0.7)	12.8 (0.69)	24 (0.71)	45.9 (0.7)	43.7 (0.7)	39.2 (0.72)	36.2 (0.72)	54 (0.71)	37 (0.63)	56.8 (0.71)	109 (0.84)	24.8 (0.85)	46.7 (0.65)	20 (0.75)
	Lead	79.6 (0.5)	9.4 (0.49)	8.5 (0.5)	41.7 (0.5)	49.9 (0.5)	85.2 (0.51)	82.8 (0.51)	144 (0.51)	121 (0.45)	65.6 (0.5)	288 (0.61)	6.8 (0.62)	172 (0.46)	59 (0.53)
	Mercury	0.29 (0.019)	0.03 B (0.019)	0.02 B (0.016)	, ,	, ,	0.19 (0.019)	0.2 (0.019)	0.17 (0.019)	0.17 (0.019)	0.24 (0.019)	0.28 (0.019)	, ,	, ,	0.28 (0.02)
	Nickel	130 (0.88)	118 (0.87)	234 (0.89)	160 (0.88)	175 (0.88)	156 (0.91)	153 (0.9)	174 (0.9)	167 (0.79)	149 (0.89)	58.9 (0.54)	280 (0.55)	81.2 (0.82)	57 (0.94)
	Selenium	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (1.1)	U (0.98)	U (1.1)	2.3 (0.95)	U (0.97)	U (1)	U (1.2)
	Silver	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.28)	U (0.28)	U (0.28)	U (0.24)	U (0.27)	0.53 B (0.32)	, ,	U (0.25)	U (0.29)
	Zinc	57.6 (1.3)	30.1 (1.3)	52.8 (1.3)	68.8 (1.3)	56.6 (1.3)	67.8 (1.4)	65.5 (1.3)	99.3 (1.3)	116 (1.2)	130 (1.3)	112 (1.3)	39.7 (1.3)	60.6 (1.2)	75.1 (1.4)

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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ENVIRON

			Summa	rized Analytica	ll Results for A	August-October	2006 Soil Sam	pling Program	- Sun Chemical	l, Staten Island, Nev	w York				
Area Of Concern	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14
Location	B1402	B1402	B1403	B1404	B1404	B1405	B1405	B1406	B1406	B1407	B1407	B1408	B1408	B1408	B1410
ENVIRON Sample ID	B1402-SS01	B1402-SS02	B1403-SS01	B1404-SS01	B1404-SS02	B1405-SS01	B1405-SS02	B1406-SS01	B1406-SS02	B1407-SS01	B1407-SS02	B1408-SS01	B1408-SS02 B	31408-SS02D	B1410-SS01
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
Collection Date	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006
Collection Depth (ft)	0.5 - 1	6 - 6.5	1.5 - 2	1.5 - 2	6 - 6.5	1.5 - 2	3.5 - 4	0.5 - 1	2.5 - 3	0.5 - 1	3.5 - 4	1 - 1.5	3.5 - 4	3.5 - 4	1.5 - 2
Comments														Duplicate	
VOC															
Acetone										0.066 B (0.0051)	U (0.0046)				
Benzene										0.0024 (0.001)	U (0.0009)				
2-Butanone										U (0.0051)	U (0.0046)				
Carbon Disulfide										U (0.0051)	U (0.0046)				
Chlorobenzene										U (0.0051)	U (0.0046)				
1,1-Dichloroethane										U (0.0051)	U (0.0046)				
1,2-Dichloroethane										U (0.002)	U (0.0018)				
cis-1,2-Dichloroethene										0.014 (0.0051)	U (0.0046)				
Ethylbenzene										0.0078 (0.0041)	U (0.0036)				
Tetrachloroethene										0.0009 J (0.001)	U (0.0009)				
Toluene										0.003 J (0.0051)	U (0.0046)				
1,1,1-Trichloroethane										U (0.0051)	U (0.0046)				
Trichloroethene										0.0009 J (0.001)	U (0.0009)				
Xylene (Total)										0.11 (0.0051)	U (0.0046)				
SVOC															
Acenaphthene		U (0.4)	U (3.8)	U (3.7)	` ′	0.012 J (0.37)	U (0.37)	, ,	0.036 J (0.81)	, ,	, ,	, ,	, ,	0.016 J (0.4)	, ,
Acenaphthylene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.13 J (0.37)	, ,	0.015 J (0.38)	U (0.81)		0.035 J (0.39)	3.9 J (20)	, ,	` '	0.034 J (0.38)
Anthracene		U (0.4)	U (3.8)	U (3.7)	, ,	0.075 J (0.37)	` ,	0.024 J (0.38)	` ′	, ,			` ′	` '	0.041 J (0.38)
Benzo(a)anthracene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	1.1 (0.037)	U (0.037)	, ,	0.29 (0.081)	, ,	2.1 (0.039)	93 (2)	0.11 (0.04)	0.12 (0.04)	, ,
Benzo(a)pyrene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	0.58 (0.037)	U (0.037)	, ,	, ,	, ,	1.7 (0.039)	74 (2)	0.1 (0.04)	` ′	0.21 (0.038)
Benzo(b)fluoranthene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	0.57 (0.037)	U (0.037)	, ,			1.3 (0.039)		0.096 (0.04)	` '	0.23 (0.038)
Benzo(g,h,i)perylene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.17 J (0.37)	U (0.37)	U (0.38)	, ,		0.42 (0.39)	, ,	` ′	0.064 J (0.4)	` /
Benzo(k)fluoranthene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	0.62 (0.037)	U (0.037)	, ,	, ,		1.5 (0.039)	89 (2)	0.11 (0.04)	, ,	0.31 (0.038)
bis(2-Ethylhexyl)phthalate		U (0.4)	5 (3.8)	U (3.7)	U (0.4)		0.08 J (0.37)	4.7 (0.38)	7.8 (0.81)		0.83 (0.39)	7.7 J (20)	0.12 J (0.4)	` '	0.49 (0.38)
Carbazole 4-Chloroaniline		U (0.4) U (0.4)	U (3.8) U (3.8)	U (3.7) U (3.7)	U (0.4)	0.037 J (0.37) U (0.37)	` ,	0.012 J (0.38) 0.032 J (0.38)	U (0.81)	, ,	0.022 J (0.39) U (0.39)	U (20)	0.012 J (0.4) U (0.4)	0.015 J (0.4) U (0.4)	U (0.38)
		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.52 (0.37)	U (0.37)	` '			2.8 (0.39)	83 (20)		0.15 J (0.4)	0.25 J (0.38)
Chrysene Dibenz(a,h)anthracene		U (0.4)	U (0.38)	U (0.37)		0.079 (0.037)	U (0.037)	U (0.038)	U (0.081)		0.23 (0.039)		0.14 J (0.4) 0.017 J (0.04)	U (0.04)	U (0.038)
Dibenzofuran		U (0.4)	U (3.8)	U (3.7)		0.0095 J (0.037)	U (0.37)		0.019 J (0.81)		U (0.39)	7.2 J (20)	U (0.4)	U (0.4)	0.01 J (0.38)
1,2-Dichlorobenzene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	U (0.37)	U (0.37)	U (0.38)	U (0.81)		U (0.39)	U (20)	U (0.4)	U (0.4)	U (0.38)
1,4-Dichlorobenzene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	U (0.37)	U (0.37)	U (0.38)	U (0.81)		U (0.39)	U (20)	U (0.4)	U (0.4)	U (0.38)
3,3'-Dichlorobenzidine		U (0.4)	U (7.6)	U (7.4)	U (0.4)	U (0.74)		0.066 J (0.76)	U (1.6)		U (0.78)	U (39)	U (0.79)	, ,	0.044 J (0.77)
Dimethylphthalate		U (0.4)	27 (3.8)	U (3.7)	U (0.4)	U (0.37)	U (0.37)	` '	U (0.81)		U (0.39)	U (20)	U (0.4)	U (0.4)	U (0.38)
Di-n-butylphthalate		U (0.4)	33 (3.8)	6.2 (3.7)	U (0.4)	U (0.37)	U (0.37)	U (0.38)	U (0.81)		U (0.39)	U (20)	U (0.4)	U (0.4)	U (0.38)
Fluoranthene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.79 (0.37)	U (0.37)				2.4 (0.39)	190 (20)	0.21 J (0.4)	0.21 J (0.4)	0.45 (0.38)
Fluorene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	U (0.37)	U (0.37)		0.028 J (0.81)			14 J (20)		` '	0.015 J (0.38)
Hexachlorobenzene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	U (0.037)	U (0.037)		0.087 (0.081)		U (0.039)	U (2)	U (0.04)	U (0.04)	U (0.038)
Indeno(1,2,3-cd)pyrene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	0.19 (0.037)	U (0.037)		0.11 (0.081)		0.37 (0.039)			0.061 (0.04)	
2-Methylnaphthalene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.01 J (0.37)	U (0.37)		0.055 J (0.81)		0.098 J (0.39)	1.1 J (20)			0.12 J (0.38)
Naphthalene		U (0.4)	U (3.8)	U (3.7)		0.028 J (0.37)	` ,	0.013 J (0.38)			0.026 J (0.39)	1.2 J (20)		` '	0.073 J (0.38)
3-Nitroaniline		U (0.8)	U (7.6)	U (7.4)	U (0.8)	U (0.74)	U (0.74)	` '	U (1.6)		U (0.78)	U (39)	U (0.79)	U (0.8)	U (0.77)
4-Nitroaniline		U (0.8)	U (7.6)	U (7.4)	U (0.8)	U (0.74)	U (0.74)	U (0.76)			U (0.78)	U (39)	U (0.79)	U (0.8)	U (0.77)
1 Tattounine		2 (0.0)	2 (7.0)	S (7.1)	C (0.0)	C (0.7 F)	S (0.7 F)	S (0.70)	S (1.0)	2 (3000)	C (0.70)	S (37)	C (0.77)	2 (0.0)	S (0.77)

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TABLE 1 Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

				Summ	arized Analytica	al Results for A	August-October	2006 Soil Sam	pling Program -	- Sun Chemical,	Staten Island, Ne	w York				
	Area Of Concern	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14	AOC 14
	Location	B1402	B1402	B1403	B1404	B1404	B1405	B1405	B1406	B1406	B1407	B1407	B1408	B1408	B1408	B1410
	ENVIRON Sample ID	B1402-SS01	B1402-SS02	B1403-SS01	B1404-SS01	B1404-SS02	B1405-SS01	B1405-SS02	B1406-SS01	B1406-SS02	B1407-SS01	B1407-SS02	B1408-SS01	B1408-SS02	B1408-SS02D	B1410-SS01
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	8/28/2006	8/28/2006	8/28/2006	8/28/2006	8/28/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006	10/4/2006
	Collection Depth (ft)	0.5 - 1	6 - 6.5	1.5 - 2	1.5 - 2	6 - 6.5	1.5 - 2	3.5 - 4	0.5 - 1	2.5 - 3	0.5 - 1	3.5 - 4	1 - 1.5	3.5 - 4	3.5 - 4	1.5 - 2
	Comments														Duplicate	
'	Nitrobenzene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	U (0.037)	U (0.037)	U (0.038)	U (0.081)	U (180)	U (0.039)	U (2)	U (0.04)	U (0.04)	U (0.038)
	Phenanthrene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.26 J (0.37)	U (0.37)	0.086 J (0.38)	0.31 J (0.81)	U (1800)	4.6 (0.39)	160 (20)	0.11 J (0.4)	0.081 J (0.4)	0.23 J (0.38)
	Pyrene		U (0.4)	U (3.8)	U (3.7)	U (0.4)	0.8 (0.37)	U (0.37)	` ,	0.57 J (0.81)	U (1800)	` ,	160 (20)	0.2 J (0.4)	0.2 J (0.4)	0.53 (0.38)
	1,2,4-Trichlorobenzene		U (0.04)	U (0.38)	U (0.37)	U (0.04)	U (0.037)	U (0.037)	U (0.038)	U (0.081)	U (180)	U (0.039)	U (2)	U (0.04)	U (0.04)	U (0.038)
PCB																
	PCBs (total)	5.4 (0.14)	U (0.067)	14 (0.77)	U (0.067)	U (0.067)	U (0.074)	U (0.074)	0.3 (0.076)	10.6 (0.4)	1.46 (0.073)	U (0.078)	9.9 (0.4)	0.16 (0.08)	U (0.08)	4.2 (0.15)
	Aroclor-1248	2 (0.14)	U (0.067)	14 (0.77)	U (0.067)	U (0.067)	U (0.074)	U (0.074)	0.2 (0.076)	7 (0.4)	0.96 (0.073)	U (0.078)	6.6 (0.4)	0.16 (0.08)	U (0.08)	2.9 (0.15)
	Aroclor-1254	2.3 (0.14)	U (0.067)	U (0.77)	U (0.067)	U (0.067)	U (0.074)	U (0.074)	` ′	3.6 (0.4)	0.5 (0.073)	U (0.078)	3.3 (0.4)	U (0.08)	U (0.08)	1.3 (0.15)
	Aroclor-1268	1.1 (0.14)	U (0.067)	U (0.77)	U (0.067)	U (0.067)	U (0.074)	U (0.074)	U (0.076)	U (0.4)	U (0.073)	U (0.078)	U (0.4)	U (0.08)	U (0.08)	U (0.15)
INORG		/	/>				/		/			/:				/
	Antimony	U (1.1)	` ,	U (1.3)	U (1.3)	U (1.4)	U (1.1)	U (1.1)	U (1.1)	14.6 (1.2)	U (1.1)	` '	18.7 (1.2)	17.5 (1.2)	15.5 (1.2)	U (1.1)
	Arsenic	9.2 (0.96)	4.2 (1.1)	12.5 (0.73)	2.3 (0.71)	, ,	67.4 (1)	` ′	3.5 (1)	3.5 (1.1)	5.9 (0.98)	2.3 (1.1)	20.7 (1.1)	4 (1.1)	5.9 (1.1)	6 (1)
	Barium	114 (0.28)	` /	139 (0.39)	` ′	` /	` /	39.4 B (0.29)	155 (0.3)	1060 (0.31)	637 (0.28)	103 (0.3)	280 (0.31)	158 (0.31)	157 (0.31)	156 (0.3)
	•	0.25 B (0.021)	, ,	, ,	0.21 B (0.067)	, ,	, ,	, ,	0.33 B (0.023)	, ,	0.27 B (0.022)	, ,	0.52 (0.024)	0.51 (0.024)	0.59 (0.024)	0.54 (0.023)
		0.11 B (0.11)	, ,	0.62 B (0.092)	U (0.089)	U (0.096)	, ,	, ,	0.39 B (0.11)	` '	0.46 B (0.11)	U (0.12)	, ,	0.49 B (0.12)	` ′	0.25 B (0.12)
	Chromium	19.6 (0.6)	` /	72.4 (0.37)	24.6 (0.36)	67 (0.38)	43.3 (0.62)	35.9 (0.62)	26.1 (0.64)	45.7 (0.68)	21 (0.61)	26.6 (0.66)	52.3 (0.66)	33.6 (0.67)	36.3 (0.67)	45.5 (0.65) 57.8 (0.72)
	Copper	65.1 (0.66)	` ,	159 (0.85)	7.7 (0.82)	20.4 (0.89)	98.6 (0.69)	28.8 (0.68)	40.2 (0.71)	1010 (0.75)	99.7 (0.67)	40.2 (0.73)	131 (0.73)	42.1 (0.74)	43.8 (0.74)	57.8 (0.72)
	Lead	116 (0.47) 0.06 (0.018)	10.9 (0.53) U (0.017)	305 (0.62) 0.65 (0.019)	3.3 (0.6) U (0.018)	7.9 (0.65) U (0.02)	411 (0.49) 0.74 (0.018)	20 (0.49) U (0.018)	111 (0.5) 0.24 (0.019)	268 (0.53) 0.7 (0.02)	113 (0.48) 0.22 (0.018)	, ,	552 (0.52) 0.33 (0.017)	175 (0.52) 0.26 (0.02)	175 (0.53) 0.18 (0.02)	139 (0.51) 0.21 (0.019)
	Mercury Nickel	18.5 (0.84)	` ′	87.3 (0.55)	12.8 (0.53)	273 (0.58)	83.2 (0.86)	197 (0.86)	75 (0.89)	64.2 (0.94)	22.7 (0.85)	72 (0.91)		86.8 (0.93)	98.6 (0.94)	176 (0.9)
	Selenium	U(1)	` ,	U (0.96)	U (0.93)	U(1)	1.4 (1.1)	1.5 (1.1)	U (1.1)	1.6 (1.2)	U (1)	` ′	1.8 (1.1)	1.7 (1.1)	1.2 B (1.2)	U (1.1)
	Silver	U (0.26)	` ′	U (0.32)	U (0.31)	U (0.34)	U (0.27)	U (0.26)	U (0.27)	U (0.29)	U (0.26)	` ,	` ′	0.35 B (0.29)	U (0.29)	U (0.28)
	Zinc	79.2 (1.2)	` ′	201 (1.3)	13.5 (1.3)	, ,	166 (1.3)	45.9 (1.3)	96.2 (1.3)	79.7 (1.4)	72 (1.3)	` ′	221 (1.4)	139 (1.4)	134 (1.4)	80.6 (1.3)
Madam	Zinc	17.2 (1.2)	JULI (1. 4)	201 (1.3)	13.5 (1.5)	37.0 (1.7)	100 (1.5)	+3.7 (1.3)	70.2 (1.3)	17.1 (1.7)	72 (1.3)	30.0 (1.7)	221 (1.7)	137 (1.4)	15+ (1.+)	00.0 (1.3)

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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				Summai	ized Alialytica	Results for A	ugust-October	2000 Son San	ipinig Program - k	Sun Chemical, State	ii isiailu, New	1 01 K				
	Area Of Concern	AOC 14	AOC 14	AOC 14	AOC 15	AOC 15	AOC 15	AOC 15	AOC 15	AOC 15	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16
	Location	B1410	B1411	B1411	B1501	B1501	B1502	B1502	MW04	MW04	B1601	B1601	B1603	B1603	B1603	B1604
	ENVIRON Sample ID	B1410-SS02	B1411-SS01	B1411-SS02	B1501-SS01	B1501-SS02	B1502-SS01	B1502-SS02	MW4-SS01	MW4-SS02	B1601-SS01	B1601-SS02	B1603-SS01	B1603-SS01D	B1603-SS02	B1604-SS01
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore			Macrocore		Macrocore	Macrocore		Macrocore		Macrocore	Macrocore	Macrocore	
	Collection Date	10/4/2006	10/4/2006	10/4/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	8/30/2006		10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006
	Collection Depth (ft)	3.5 - 4	1.5 - 2			3 - 3.5	1 - 1.5	3.5 - 4	1 - 1.5		2 - 2.5		2 - 2.5	2 - 2.5	3.5 - 4	
	Comments	3.3 - 4	1.5 - 2	3.3 - 4	1 - 1.3	3 - 3.3	1 - 1.3	3.5 - 4	1 - 1.3	4.5 - 5	2 - 2.3	3.3 - 4	2 - 2.3	Duplicate	3.5 - 4	2 - 2.3
TIOG	Comments													Duplicate		
VOC									0.000 7 (0.0045)	0.04.75.(0.00.42)						
	Acetone								0.022 B (0.0046)	, , ,						
	Benzene								U (0.0009)	U (0.0009)						
	2-Butanone								U (0.0046)	, ,						
	Carbon Disulfide								U (0.0046)	, ,						
	Chlorobenzene								U (0.0046)	, ,						
	1,1-Dichloroethane								U (0.0046)	U (0.0043)						
	1,2-Dichloroethane								0.002 (0.0018)	0.0007 J (0.0017)						
	cis-1,2-Dichloroethene								U (0.0046)	U (0.0043)						
	Ethylbenzene								U (0.0037)	U (0.0035)						
	Tetrachloroethene								U (0.0009)	U (0.0009)						
	Toluene								U (0.0046)	U (0.0043)						
	1,1,1-Trichloroethane								U (0.0046)							
	Trichloroethene								U (0.0009)	, ,						
	Xylene (Total)								U (0.0046)	, ,						
SVOC	Tiyrene (Total)								C (0.0010)	0 (0.0013)						
втос	Acenaphthene	0.029 1 (0.39)	U (0.36)	U (0.38)					0.024 J (0.38)	U (0.38)						
	Acenaphthylene		U (0.36)	U (0.38)					0.024 J (0.38)	, ,						
	- ·	0.030 J (0.39) 0.12 J (0.39)		U (0.38)					0.021 J (0.38) 0.036 J (0.38)	, ,						
		` '	U (0.36)						, ,							
	Benzo(a)anthracene	0.5 (0.039)	U (0.036)	U (0.038)					0.15 (0.038)	, ,						
	Benzo(a)pyrene		U (0.036)	U (0.038)					0.16 (0.038)	, ,						
	Benzo(b)fluoranthene	` '	` ,	U (0.038)					0.17 (0.038)	, ,						
	Benzo(g,h,i)perylene		U (0.36)	U (0.38)					0.048 J (0.38)							
	Benzo(k)fluoranthene		U (0.036)	U (0.038)					0.18 (0.038)	, ,						
	bis(2-Ethylhexyl)phthalate			0.32 J (0.38)					0.18 J (0.38)	U (0.38)						
		0.063 J (0.39)	U (0.36)	, ,					0.024 J (0.38)	U (0.38)						
	4-Chloroaniline	U (0.39)		U (0.38)					0.0079 J (0.38)	U (0.38)						
	-	0.56 (0.39)	U (0.36)	U (0.38)					0.18 J (0.38)							
	Dibenz(a,h)anthracene (0.061 (0.039)	U (0.036)	U (0.038)					U (0.038)	U (0.038)						
	Dibenzofuran	0.02 J (0.39)	U (0.36)	U (0.38)					0.015 J (0.38)	U (0.38)						
	1,2-Dichlorobenzene	U (0.39)	U (0.36)	U (0.38)					U (0.38)	U (0.38)						
	1,4-Dichlorobenzene	U (0.39)	U (0.36)	U (0.38)					U (0.38)	U (0.38)						
	3,3'-Dichlorobenzidine	U (0.79)	U (0.73)	U (0.77)					0.054 J (0.76)	U (0.77)						
	Dimethylphthalate	U (0.39)	U (0.36)	U (0.38)					0.098 J (0.38)							
	Di-n-butylphthalate	U (0.39)	U (0.36)	U (0.38)					U (0.38)							
	Fluoranthene	0.9 (0.39)	0.02 J (0.36)	U (0.38)					0.29 J (0.38)	U (0.38)						
		0.033 J (0.39)	U (0.36)	U (0.38)					0.029 J (0.38)							
	Hexachlorobenzene	U (0.039)	U (0.036)	U (0.038)					U (0.038)							
	Indeno(1,2,3-cd)pyrene	, ,	U (0.036)	U (0.038)					0.051 (0.038)	U (0.038)						
	2-Methylnaphthalene		0.024 J (0.36)	U (0.38)					0.031 (0.038) 0.026 J (0.38)	U (0.38)						
	2-Methymaphthalene Naphthalene		0.024 J (0.36) 0.026 J (0.36)	U (0.38)					0.020 J (0.38) 0.042 J (0.38)							
	-															
	3-Nitroaniline	U (0.79)	U (0.73) U (0.73)	U (0.77) U (0.77)					U (0.76) 0.048 J (0.76)							
	4-Nitroaniline	U (0.79)														

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TABLE 1 Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

				Summari	ized Analytica	l Results for A	ugust-Octobei	: 2006 Soil San	npling Program - Su	n Chemical, State	n Island, Nev	v York				
•	Area Of Concern	AOC 14	AOC 14	AOC 14	AOC 15	AOC 15	AOC 15	AOC 15	AOC 15	AOC 15	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16
	Location	B1410	B1411	B1411	B1501	B1501	B1502	B1502	MW04	MW04	B1601	B1601	B1603	B1603	B1603	B1604
	ENVIRON Sample ID	B1410-SS02	B1411-SS01	B1411-SS02	B1501-SS01	B1501-SS02	B1502-SS01	B1502-SS02	MW4-SS01	MW4-SS02	B1601-SS01	B1601-SS02	B1603-SS01 I	B1603-SS01D	B1603-SS02	B1604-SS01
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
	Collection Date	10/4/2006	10/4/2006	10/4/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	8/30/2006	8/30/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006
	Collection Depth (ft)	3.5 - 4	1.5 - 2	3.5 - 4	1 - 1.5	3 - 3.5	1 - 1.5	3.5 - 4	1 - 1.5	4.5 - 5	2 - 2.5	3.5 - 4	2 - 2.5	2 - 2.5	3.5 - 4	2 - 2.5
	Comments													Duplicate		
	Nitrobenzene	U (0.039)	U (0.036)	U (0.038)					U (0.038)	U (0.038)						
	Phenanthrene	0.54 (0.39)	0.016 J (0.36)	U (0.38)					0.18 J (0.38)	U (0.38)						
	Pyrene	1 (0.39)	0.019 J (0.36)	U (0.38)					0.27 J (0.38)	U (0.38)						
	1,2,4-Trichlorobenzene	U (0.039)	U (0.036)	U (0.038)					0.025 J (0.038)	U (0.038)						
PCB																
	PCBs (total)	U (0.079)	U (0.074)	U (0.077)												
	Aroclor-1248	U (0.079)	U (0.074)	U (0.077)												
	Aroclor-1254	U (0.079)	U (0.074)	U (0.077)												
	Aroclor-1268	U (0.079)	U (0.074)	U (0.077)												
INORG																
	Antimony	U (1.2)	U (1.1)	U(1.1)	4.3 (1.1)	U (1.1)	U (1.1)	U (1.1)			U (1.3)	U (1.2)	U (1.3)	U (1.3)	9.7 (1.4)	U (1.1)
	Arsenic	7.4 (1.1)	3.1 (0.99)	2.2 (1)	7.3 (1)	5.4 (1)	4.1 (1)	6.2 (1)			1.7 (0.71)	1 B (0.65)	2.6 (0.72)	2.6 (0.73)	2.4 (0.77)	3.6 (1)
	Barium	275 (0.31)	39.1 B (0.29)	, ,	191 (0.29)	` /	42.2 B (0.29)	123 (0.3)			, ,	37.9 B (0.34)	262 (0.38)	261 (0.39)	` ,	71.3 (0.29)
	•	0.57 (0.024)	0.57 (0.022)	, ,	` /	` /	` /	` /			` /	0.44 (0.061)	` ,			0.57 (0.022)
	Cadmium	` ′	U(0.11)	` ′	` ,	0.24 B (0.11)	` /	` /			U (0.089)	` ′	U (0.09)	U (0.091)	` /	0.21 B (0.11)
	Chromium	` /	` ′	` ′	` ,	56.4 (0.64)	` ,	` /			29 (0.35)	23.7 (0.32)	29.9 (0.36)	` /	` /	85.5 (0.62)
	Copper	77.8 (0.73)	` ′	32.2 (0.72)	` /	31.2 (0.71)	19.2 (0.7)	` /			227 (0.82)	16 (0.75)	28.8 (0.84)	` /	31.6 (0.89)	116 (0.69)
	Lead	488 (0.52)	9 (0.48)	6.6 (0.51)	` /	` '	51.5 (0.49)	9.4 (0.51)			6.3 (0.6)	6.6 (0.55)	10.5 (0.61)	` /	51.9 (0.65)	6.5 (0.49)
	Mercury	0.26 (0.02)	U (0.018)	, ,	0.23 (0.019)	, ,	0.07 (0.019)	U (0.019)			U (0.018)	U (0.019)	U (0.019)	U (0.016)	U (0.02)	U (0.018)
	Nickel	158 (0.92)	116 (0.86)		79.4 (0.88)	, ,	66.7 (0.87)	124 (0.9)			215 (0.53)	191 (0.49)	113 (0.54)	112 (0.55)	110 (0.58)	411 (0.86)
	Selenium	2.1 (1.1)	2 (1.1)	U(1.1)	` '	1.8 (1.1)	1.1 (1.1)	1.5 (1.1)			0.9 B (0.93)	U (0.85)	1.1 (0.95)	U (0.96)	1.1 B (1)	U (1.1)
		0.91 B (0.28)	U (0.26)	, ,	0.33 B (0.27)	U (0.27)	U (0.27)	U (0.28)			U (0.31)	U (0.28)	U (0.32)	U (0.32)	U (0.34)	U (0.27)
	Zinc	157 (1.4)	32.3 (1.3)	38 (1.3)	94.4 (1.3)	61.2 (1.3)	40.5 (1.3)	45.6 (1.3)			32.3 (1.3)	35.3 (1.2)	85.9 (1.3)	112 (1.3)	50.2 (1.4)	43.2 (1.3)

Notes:

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

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ENVIRON

TABLE 1 Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

Area Of Concern	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	D	D	D	D	
Location	B1604	B1605	B1605	B1605	B1606	B1606	B1607	B1607	BKD1	BKD1	BKD1	BKD1	BKD
ENVIRON Sample ID	B1604-SS02	B1605-SS01	B1605-SS02 E	31605-SS02D	B1606-SS01	B1606-SS02	B1607-SS01	B1607-SS02	BKD1-SS01	BKD1-SS02	BKD1-SS03	BKD1-SS03D	BKD1-SS0
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soi
Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocor
Collection Date	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006
Collection Depth (ft)	3.5 - 4	2 - 2.5	3.5 - 4	3.5 - 4	2 - 2.5	3.5 - 4	2 - 2.5	3.5 - 4	0 - 0.5	1.5 - 2	3.5 - 4	3.5 - 4	6 - 6.
Comments				Duplicate								Duplicate	

Acetone Benzene 2-Butanone Carbon Disulfide Chlorobenzene

1,1-Dichloroethane 1,2-Dichloroethane

cis-1,2-Dichloroethene Ethylbenzene Tetrachloroethene

Toluene 1,1,1-Trichloroethane Trichloroethene Xylene (Total)

SVOC

Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene bis(2-Ethylhexyl)phthalate Carbazole 4-Chloroaniline Chrysene Dibenz(a,h)anthracene Dibenzofuran 1,2-Dichlorobenzene 1,4-Dichlorobenzene 3,3'-Dichlorobenzidine Dimethylphthalate Di-n-butylphthalate Fluoranthene Fluorene Hexachlorobenzene

> Indeno(1,2,3-cd)pyrene 2-Methylnaphthalene

> > Naphthalene 3-Nitroaniline 4-Nitroaniline

> > > ENVIRON Page 15 of 16

TABLE 1 Summarized Analytical Results for August-October 2006 Soil Sampling Program - Sun Chemical, Staten Island, New York

								1 0 0					
Area Of Concern	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	AOC 16	D	D	D	D	D
Location	B1604	B1605	B1605	B1605	B1606	B1606	B1607	B1607	BKD1	BKD1	BKD1	BKD1	BKD1
ENVIRON Sample ID	B1604-SS02	B1605-SS01	B1605-SS02 B	1605-SS02D	B1606-SS01	B1606-SS02	B1607-SS01	B1607-SS02	BKD1-SS01	BKD1-SS02	BKD1-SS03	BKD1-SS03D	BKD1-SS04
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Method	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore	Macrocore
Collection Date	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006	10/5/2006
Collection Depth (ft)	3.5 - 4	2 - 2.5	3.5 - 4	3.5 - 4	2 - 2.5	3.5 - 4	2 - 2.5	3.5 - 4	0 - 0.5	1.5 - 2	3.5 - 4	3.5 - 4	6 - 6.5
Comments	1			Duplicate								Duplicate	
3.71													

Nitrobenzene Phenanthrene

Pyrene

1,2,4-Trichlorobenzene

PCB

PCBs (total) Aroclor-1248

Aroclor-1254

Aroclor-1268

INORG

Antimony	U (1.1)	U (1.2)	U (1.1)	U (1.1)	8.9 (1.4)	U (1.2)	U (1.3)	U (1.3)	U (1.4)	U (1.4)	U (1.3)	U (1.3)	U (1.3)
Arsenic	2.9 (0.99)	5.8 (1.1)	4.1 (1)	3.7 (1)	13.4 (0.78)	1.6 (0.65)	1.5 (0.73)	1.8 (0.73)	5.7 (0.75)	5.2 (0.75)	1.1 B (0.71)	0.76 B (0.71)	3.1 (0.73)
Barium	61.9 (0.29)	32.9 B (0.31)	33.2 B (0.3)	58.3 (0.3)	598 (0.42)	38.6 B (0.34)	1610 (0.39)	3910 (0.39)	56.4 (0.4)	51.3 (0.4)	28.9 B (0.38)	27.7 B (0.38)	66 (0.39)
Beryllium	0.46 (0.022)	0.67 (0.024)	0.66 (0.023)	0.64 (0.023)	0.58 (0.074)	0.46 (0.061)	0.45 (0.069)	0.44 B (0.069)	0.52 (0.071)	0.53 (0.07)	0.47 (0.067)	0.45 (0.067)	0.69 (0.068)
Cadmium	0.3 B (0.11)	13.5 (0.12)	20.8 (0.11)	18.9 (0.12)	1.2 B (0.098)	U (0.081)	U (0.092)	U (0.092)	U (0.094)	U (0.094)	U (0.089)	U (0.089)	U (0.091)
Chromium	54.9 (0.62)	35.5 (0.66)	34.6 (0.64)	31.4 (0.64)	449 (0.39)	34 (0.32)	30.5 (0.37)	38.8 (0.37)	41.7 (0.38)	31.1 (0.38)	24.9 (0.36)	23.8 (0.35)	64.5 (0.36)
Copper	261 (0.69)	16.4 (0.73)	17.6 (0.71)	16 (0.71)	172 (0.91)	18.8 (0.75)	37.4 (0.85)	21.9 (0.85)	34.5 (0.87)	30 (0.87)	19.3 (0.82)	16.5 (0.82)	20.3 (0.84)
Lead	6.5 (0.49)	10 (0.52)	8 (0.5)	7.6 (0.51)	1300 (0.66)	16.2 (0.55)	20.7 (0.62)	20.5 (0.62)	124 (0.64)	64.6 (0.63)	6.6 (0.6)	6.4 (0.6)	8.5 (0.61)
Mercury	U (0.018)	U (0.017)	U (0.016)	U (0.016)	1.2 (0.02)	U (0.019)	0.03 B (0.019)	0.02 B (0.019)	0.15 (0.02)	0.13 (0.02)	U (0.019)	U (0.018)	U (0.019)
Nickel	269 (0.86)	51.8 (0.92)	113 (0.89)	74.8 (0.9)	82 (0.59)	190 (0.49)	96 (0.55)	102 (0.55)	138 (0.57)	85.8 (0.56)	83.4 (0.53)	67.5 (0.53)	521 (0.54)
Selenium	U (1.1)	U (1.1)	1.1 (1.1)	1.3 (1.1)	2 (1)	1 B (0.85)	1.4 (0.96)	U (0.96)	1.4 (0.99)	U (0.99)	U (0.93)	U (0.93)	U (0.95)
Silver	U (0.27)	U (0.28)	U (0.27)	U (0.28)	U (0.34)	U (0.28)	U (0.32)	U (0.32)	U (0.33)	U (0.33)	U (0.31)	U (0.31)	U (0.32)
Zinc	32.4 (1.3)	41.9 (1.4)	36.8 (1.3)	34.8 (1.3)	245 (1.4)	35.6 (1.2)	81.8 (1.3)	75.8 (1.3)	87.8 (1.4)	64 (1.4)	39 (1.3)	36.7 (1.3)	48.1 (1.3)

Notes:

- 1 All concentrations are presented in mg/kg (ppm).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated Concentration.
- () -- Detection Limit.

Area Of Concern			AOC 06	AOC 05	AOC 05	AOC 15	AOC 15	AOC 02	AOC 02	AOC 02	AOC 02	
Location	MW01	MW01	MW02	MW03	MW03	MW04	MW04	MW05	MW05	MW05	MW05D	MW06
ENVIRON Sample ID	MW01-060911	MW01-061017	MW02-061017	MW03-061017	MW03-061017D	MW04-060911	MW04-061017	MW05-060911	MW05-060911D	MW05-061017	MW05D-061017	MW06-061017
Collection Method	Bailer	TB/Pump	TB/Pump	TB/Pump	TB/Pump	Bailer	TB/Pump	Bailer	Bailer	TB/Pump	TB/Pump	TB/Pump
Comments					Duplicate				Duplicate			
VOC												
Benzene	U(1)	U(1)	U(1)	18 (5)	20 (5)	2.5 (1)	1.5 (1)	U(1)	U (1)	U(1)	U(1)	U(1)
Bromodichloromethane	U(1)	U (1)	U(1)	U (5)	U (5)	U (1)	U(1)	U(1)	U (1)	U(1)	0.7 J (1)	U(1)
Carbon Disulfide	1.2 J (5)	U (5)	U (5)	U (25)	U (25)	0.4 J (5)	4.6 J (5)	U (5)	U (5)	U (5)	U (5)	U (5)
Chloroform	U (5)	U (5)	U (5)	20 J (25)	21 J (25)	1.3 J (5)	0.8 J (5)	U (5)	U (5)	U (5)	10 (5)	U (5)
1,1-Dichloroethane	15 (5)	2.5 J (5)	0.6 J (5)	520 (25)	540 (25)	31 (5)	22 (5)	U (5)	U (5)	U (5)	U (5)	U (5)
1,2-Dichloroethane	U (2)	U (2)	U (2)	540 (10)	550 (10)	41 (2)	26 (2)	U (2)	U (2)	U (2)	1.3 J (2)	U (2)
1,1-Dichloroethene	U(2)	U (2)	U (2)	150 (10)	160 (10)	29 (2)	15 (2)	U (2)	U (2)	U(2)	U (2)	U (2)
cis-1,2-Dichloroethene	U (5)	U (5)	U (5)	U (25)	U (25)	0.5 J (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)
1,2-Dichloropropane	U(1)	U(1)	U(1)	6.7 (5)	7.1 (5)	U(1)	U(1)	U(1)	U(1)	U(1)	U(1)	U(1)
Methylene Chloride	U(3)	U (3)	U (3)	30 (15)	32 (15)	U (3)	U (3)	U (3)	U (3)	U(3)	U (3)	U (3)
1,1,1-Trichloroethane	2.1 J (5)	U (5)	1.3 J (5)	9.8 J (25)	11 J (25)	10 (5)	4.6 J (5)	U (5)	U (5)	U (5)	U (5)	U (5)
1,1,2-Trichloroethane	U (3)	U (3)	U (3)	3.6 J (15)	3.1 J (15)	1 J (3)	0.9 J (3)	U (3)	U (3)	U (3)	U (3)	U (3)
Trichloroethene	U(1)	U(1)	U(1)	U (5)	U (5)	6.2 (1)	4.2 (1)	U(1)	U(1)	0.7 J (1)	U(1)	U(1)
Vinyl Chloride	U (5)	U (5)	U (5)	5.7 J (25)	5.8 J (25)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)	U (5)
SVOC												
INORG												
Arsenic	U (3.2)	U (4.5)	U (4.5)	5 B (4.5)	U (4.5)	U (3.2)	U (4.5)	5 B (3.2)	4.1 B (3.2)	17.7 (4.5)	U (4.5)	U (4.5)
Barium		66.4 B (1.3)	261 (1.3)	72.2 B (1.3)	73.4 B (1.3)		91.5 B (1.3)			239 (1.3)	623 (1.3)	164 B (1.3)
Beryllium	U (0.3)	U (0.1)	0.24 B (0.1)	U (0.1)	U (0.1)	U (0.3)	U (0.1)	U (0.3)	U (0.3)	U (0.1)	0.57 B (0.1)	U (0.1)
Chromium	10.3 (1.6)	5.7 B (2.8)	33.9 (2.8)	21.3 (2.8)	22.2 (2.8)	9.2 B (1.6)	3.2 B (2.8)	5.8 B (1.6)	5.1 B (1.6)	5.2 B (2.8)	15.5 (2.8)	4.9 B (2.8)
Copper	4.5 B (3.7)	8.2 B (3.1)	22.2 B (3.1)	15.2 B (3.1)	14.3 B (3.1)	9.4 B (3.7)	5.8 B (3.1)	3.7 B (3.7)	4.1 B (3.7)	9.7 B (3.1)	33.8 (3.1)	5.6 B (3.1)
Lead	3.2 B (2.7)	U (2.2)	18.5 (2.2)	U (2.2)	U (2.2)	7.8 (2.7)	2.9 B (2.2)	14.1 (2.7)	13.1 (2.7)	20.6 (2.2)	12.6 (2.2)	U (2.2)
Mercury	U (0.1) U (0.1)	U (0.1)	0.12 B (0.1)	U (0.1)	U (0.1)	U (0.1)						
Nickel	38.2 B (2.4)	20.6 B (3.9)	70.3 (3.9)	330 (3.9)	319 (3.9)	96.2 (2.4)	91.9 (3.9)	28.9 B (2.4)	29 B (2.4)	32.5 B (3.9)	41.7 (3.9)	98.5 (3.9)
Selenium	U (4.2)	4.9 B (4.8)	U (4.8)	U (4.8)	U (4.8)	U (4.2)	U (4.8)	U (4.2)	U (4.2)	6.5 (4.8)	5.4 (4.8)	U (4.8)
Zinc	17.2 B (5.8)	15.4 B (5.8)	34.6 (5.8)	19.7 B (5.8)	19.7 B (5.8)	35.4 (5.8)	9.9 B (5.8)	53.1 (5.8)	62.5 (5.8)	24.1 B (5.8)	34.7 (5.8)	10 B (5.8)

Notes:

- All concentrations are presented in ug/L (ppb).
- Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated
- Concentration.

() -- Detection Limit.

Page 1 of 2 ENVIRON

Area Of Concern	
Location	MW07
ENVIRON Sample ID	MW07-061017
Collection Method	TB/Pump
Comments	
VOC	
Benzene	U(1)
Bromodichloromethane	U(1)
Carbon Disulfide	U (5)
Chloroform	U (5)
1,1-Dichloroethane	U (5)
1,2-Dichloroethane	U (2)
1,1-Dichloroethene	U (2)
cis-1,2-Dichloroethene	U (5)
1,2-Dichloropropane	U(1)
Methylene Chloride	U (3)
1,1,1-Trichloroethane	U (5)
1,1,2-Trichloroethane	U (3)
Trichloroethene	U (1)
Vinyl Chloride	U (5)
SVOC	
INORG	
Arsenic	U (4.5)
Barium	173 B (1.3)
Beryllium	0.23 B (0.1)
Chromium	14.9 (2.8)
Copper	12.7 B (3.1)
Lead	4.8 (2.2)
Mercury	U (0.1)
Nickel	84.1 (3.9)
Selenium	U (4.8)
Zinc	23.2 B (5.8)

Notes:

- All concentrations are presented in ug/L (ppb).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

- U -- Not Detected.
- J -- Estimated
- Concentration.
- () -- Detection Limit.

TABLE 3 Summarized Analytical Results for QA/QC Samples, Sun Chemical Corporation, Staten Island, New York

Area Of Concern	QAQC	QAQC	QAQC	QAQC
Location	QAQC	QAQC	QAQC	QAQC
ENVIRON Sample ID	FB-060911	TB-060911	FB-061017	TB-061017
Collection Method	Bailer	Bailer	TB	
0 0	Field Blank	Trip Blank	Field Blank	Trip Blank
0 0		Trip Blank	Field Blank U	Trip Blank U
Comments	Field Blank	Trip Blank U NA		-

Notes:

- 1 All concentrations are presented in ug/L (ppb).
- 2 Only compounds with at least one detection are shown.

Abbreviations:

U -- Not Detected.

NA - Not Analyzed.

() -- Detection Limit.

Page 1 of 1 ENVIRON

ATTACHMENT A Regulatory Correspondence Related to 1988 Caustic Solution Release Remediation

CITY OF NEW YORK DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF HAZARDOUS MATERIALS PROGRAMS OFFICE OF EMERGENCY RESPONSE AND TECHNICAL ASSESSMENT

Technical Report (Preliminary)

SRR# 880217/7/0084

Subject: Chemical Spill

Sun Chemical Corporation

441 Tompkins Avenue

Rosebank, Staten Island 10305

introducti :

On Wellesday, February 17, 1988, at approximately 2:30 PM, the Division of Hazardous Materials Programs (DE 3) received anonymous telephone call asking that "If a control of the land the material enterty and yard, are they required to notify the DE".

Totaller also stated that a spill occured at the Saute Carridal Corporation located in Rosebank, Staten Island.

Hazardous Materials Specialist Ted Nabavi immediately contacted Alan Shearer (Operations Manager) of Sun Chemical and requested an explanation as to the validity of the arraymous complaint. Mr. Shearer provided DN 2 with the following suggests and informations

At approximate: . . . AM on February 17, 1988, an employee of Sun Chemical discovered that a 2" pipe from a 10,000 gallon 23% caustic solution feeder tank had ruptured and released an unknown quantity of the caustic soda solution onto the Sun Chemical property and a school yard adjace: Sun Chemical.

 This school yard is part of the St. Joseph Roman Catholic School which abutts the Sun Chemical plant.

St. Thearer believe to the quantity of spilled machine telephone to pard war approximation of spilled machine to the telephone to the approximation of the a

Mr. Shearer in the solution of the Son Chemical plant of the solution of the Son AM on 2/17/98. At the solution of the Son American Solution of the NRC, and the Son American Solution of the

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principal of St. Joseph's school, and advised him to keep all children away from the school yard.

- 2 -

DHMP then requested an explanation of any remedial actions being taken by Sun Chemical.

- Mr. Shearer said that Sun Chemical employees were washing the residual material present on the school yard property and were cleaning the affected areas on the Sun Chemical property.
- pump advised mr. Bhearer that a mazardoup materials Specialist would respond to assess the spill and the remedial actions being under taken by Sun Chemical.

At approximately 3:00 PM on 2/17/88, DHMP received a telephone call from the superintendent, Mr. Sandy Lisa, of St. Joseph Roman Catholic school. DHMP asked Mr. Lisa to explain what was occuring at that time on the school property. Mr. Lisa stated that several Sun Chemical employees were washing the material present on the school yard property and there was also a back-hoe on the school yard performing excavation. Based upon Mr. Lisa's information, DHMP immediately responded to the Sun Chemical facility.

Preliminary Investigation and Observations:

DO 04 04 14 + 10

Upon arrival (approximately 4:00 PM). DHMP (Mr. Nabavi) met with Mr. Shearer and conducted an investigation of the spilled material and the extent of contamination involved. The following are the details of the DHMP investigation and actions taken:

- DHMP observed Sun Chemical employees washing the school yard using a spray nozzle on 4" diameter water-hose.
- The run-off from the washing operation was entering two (2) aform yard drains on the school yard property (see attached map).
- In addition, there was a back-hoe performing excavation at the area of the separating-wall between Sun Chemical and the school yard.
- Using lithmus paper, AMIT topted who rem-off water in the school yard I found At week a get of 212, i.e., corrosive.

Action Taken:

At this time, DHMP advised Mr. Shearer to stop washing the achool yard. Mr. Shearer agreed to the DHMP request. In addition, the contractor performing the excavation was not a hazardous waste contractor, therefore, DHMP requested that no further excavation be performed. Mr. Shearer again agreed to the DHMP request. DHMP then inspected the Sun Chemical facility, and discovered Sun Chemical employees excavating (using shovels) contaminated soil and storing the soil in 55 gallon drums. DHMP requested this action to cease and Mr. Shearer agreed to do so.

DHMP spoke to Rt. Rev. Msgr. John Servodidio, the pastor for St. Joseph's parish via telephone. DHMP requested that the pastor allow DHMP to close-off all access to the school yard, and explained the results of the DHMP preliminary investigation. The pastor had no problem with the request, but requested DHMP to also notify Mr. Paul Henry (attorney for the parish) of the DHMP actions. DHMP agreed to do so.

DHMP asked Mr. Shearer to retain a hazardous waste contractor to respond and conduct all the remedial steps necessary. Mr. Shearer contacted Mr. Robert Sharkey (Safety and Environmental Manager, Sun Chemical) in Cincinnati, Ohio and explained the situation and DHMP's request. Mr. Sheare was notified at approximately 6:00 PM by Mr. Sharkey that a Materials of New Jersey was responding to the Sun Chemical facility. Mr. Sharkey explained that Sun Chemical has a national contract with OH Materials for hazardous materials emergencies.

Mr. Nabavi contacted Cyprian Cox, Director Office of Emergency Response and Technical Assessment, on the status of the DHMP investigation and actions taken.

OH Materials arrived at Sun Chemical at approximately 8:00 pm. At this time, DHMP requested that OH Materials gump out all visible liquids "pools" using a Vac-truck.

- OH Materials started the excavation on the Sun Chemical property of all visible contaminated areas (using earth moving equipment).
- DHMP contacted Mr. Henry at 1:30 AM on 2/18/88 and requested permission to excavate the black-top of the school yard since pH testing showed contamination at surface and sub-surface locations. Mr. Henry approved the DHMP request. DHMP agreed to contact the Megr. as to any further actions necessary to emediate the contamination.

- Will Stephan, DHMP Hazardous Materials Specialist, supervised the cleanup activities throughout the night.
- DHMP tested the pH at two (2) sewer locations (by manholes) to identify whether storm drains and at the school yard were impacting on the NYCLEWEC System. The sewer at St. Mary Avenue showed a pH of 7 and the sewer on Tompkins Avenue also indicated a pH of 7. The pH was tested using litmus paper.

2/18/88 Time: 7:30 AM

- DHMP (James Alexander, Director of Operations; Mr. Cox and Mr. Nabavi; met with Msgr. Servodidio and Mr. Robert Edelman (School Prinicpal) on the details of the cleanup and all the actions necessary to complete the cleanup. This included the school yard being closed until all cleanup activities are completed and removing the black-top on the school yard. Sun Chemical assured DHMP that they would replace and repair all affected areas as a result of the cleanup activity.
- The pastor and the principal decided to keep the school open and issued a letter to the parents explaining the spill and cleanup activities being performed.
- DHMP determined that the storm-drains or the school yard discharge into the school's house trap. A sample was taken and found to have a pH >12.
- DHMP also found that one of the storm drains in school yard was clogged. Therefore, the lines were cleaned/flushed. The pH was retested and found to be 7. This action was performed by OH Materials under DHMP supervision.
- DHMP notified Robert Gage, Director of the Bureau of Environmental Investigation and Surveillance of NYC Department of Health and requested DOH to respond to the site.
- DHMP contacted Con-Ed, BUGCO and DEP/BWS to respond and identify all existing utility lines on the school yard property. This action was necessary prior to conduction y portings. All utilities responded and ind there were no utility lines present in the conduction.

- OH Materials then proceeded to a nduct plank and a sub-surface assessments.

the results showed that here on the area annonl yard were distributed to the partition and another than also spilled also spilled subsurfac-

w Mr. Shearer to seed DHMP ther Sun Cart conducted several dalic lations and descrithe quantity of the op 11 released from the wike containment dike was the wastery 545 galtons.

Conclusions:

10 July 1944 - 11

Based upon the extent of carriagination, the cleanup peace upon the following to the emergency remediation was activities were resident to the emergency remediation was complement during the complement during the complement during the complement during the complement during the complement of the co populated lith the spill which other commoder occured on lore , 1988. The contaminants included lead, di-movyl pro state and an Arnolog (PCB). DHMP by advised R. Chem. I . address the environmental acoccupational heal simpler of these contaminants a. on the Sun Chemical property.

Hazardous Mater: v

The il

cc: M. Barer

J. Alexander

C. Cox

W Stanhan

R. Fornino stoyer pervediant, or everyone a sec. Cautour

P. Henry (St. Joseph's R. . Church)

A. Shearer (Sun Chemical)

F. Parker (OH Materials)

A. Colucci (C. DA's Office)

K. Ford (DLe, 13)

R. LaGrotta (DSP/IWCS)

C. Ash (NYC/DEL)

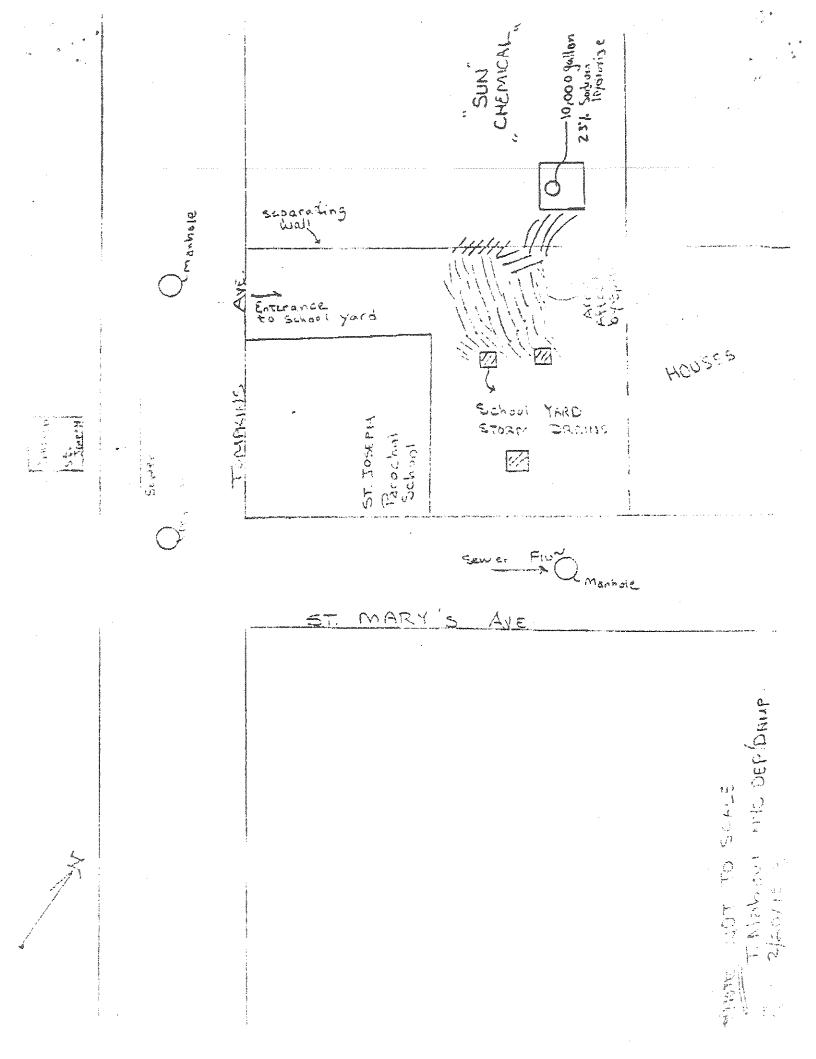
B. Gage (DOH)

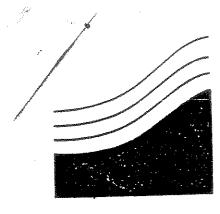
R. Austin (DEC)

Lt. Kearney (USCG)

R. Evers (USCG)

J. Logidian (USFSA)





CITY OF NEW YORK DEPARTMENT OF ENVIRONMENTAL PROTECTION 2358 MUNICIPAL BUILDING, NEW YORK, N.Y. 10007 (212) 669-8200

HARVEY W. SCHULTZ
Commissioner

April 14, 1988

Ms. Carol Ash
Regional Director
NYS Department of Environmental
Conservation, Region II
47-40 21st Street, Room 210
Long Island City, NY 11101

RE: Sun Chemical Corp. 441 Tompkins Avenue Rosebank, S.I. 10305 SRR# 880217/7/0084

Dear Ms. Ash:

The NYC Department of Environmental Protection, Division of Hazardous Materials Programs (DHMP), responded to an emergency involving a causic solution spill at the above chemical company on 2/17/88 (attached is the Technical Report). The NYS DEC was notified of the incident by Sun Chemical and Region II personnel responded on 2/17/88 and 2/18/88.

Since that time, the spill and contaminated areas have been sucessfully remediated for effects of the caustic spill. However, as a result of the incident, extensive sampling and analysis were conducted on the Sun Chemical Property (attached analysis were conducted on the Sun Chemical Property. The show contamination present on the Sun Chemical Property. The show contamination present on the Sun Chemical Property. The contaminants involved are lead, di-octyl phthalate and the contaminants involved are lead, di-octyl phthalate and the analytical results, DHMP has account 1248 (PCB). Based on the analytical results, DHMP has advised Sun Chemical to conduct and environmental and worker exposure assessment of the contaminants, to determine if any mitigative actions are needed to reduce the level of these contaminants.

RECEIVED

APR 25 1988

LLL II INEANTR

Therefore, DEP/DHMP is referring this situation to your office for any further actions you may deem necessary, and we would like to be informed of your actions.

If you have any further questions regarding this letter, please feel free to call me.

Sincerely,

Mira Barer

Deputy Commissioner

cc: E. Sullivan

J. Alexander

C. Cox T. Nabavi

T. McDonald

A. Shearer (Sun Chemical)

enc.

MB/ws

ATTACHMENT B

NYSDEC Correspondence Related to the 1994 Hazardous Substances Disposal Site Study

New York State Department of Environmental Conservation Division of Environmental Remediation

Bureau of Hazardous Site Control, Room 252 50 Wolf Road, Albany, New York 12233-7010 Phone: (518) 457-8807 FAX: (518) 457-8989



CERTIFIED MAIL RETURN RECEIPT REQUESTED

Sun/Dic Acquisition Company 441 Tompkins Ave. Staten Island, NY 10305



Dear Sir or Madam:

Re: Preliminary Site Assessment at Hazardous Substance Sites

The New York State Department of Environmental Conservation (NYSDEC) is investigating sites suspected or known to contain hazardous substances. The property described below is listed in the "Addendum to the Hazardous Substance Waste Disposal Site Study, dated becember 1, 1998" and we have received information which leads us to suspect that hazardous substances have been disposed of at this location:

Site Name: SUN Chemical Corp.

Site Address: 441 Tompkins Ave. Staten Island, NY

Tax Map No.: Block 2846 Lot 12 DEC Site No.: 02-43-024, HS2042

This investigation is being conducted in accordance with Environmental Conservation Law (Title 3, Section 3-0301. General functions, powers and duties of the department and the commissioner). This law directs the Department to enter and inspect any property or premises for the purpose of investigating either actual or suspected sources of pollution or contamination or for the purpose of ascertaining compliance or noncompliance with any law, rule or regulation which may be promulgated pursuant to this chapter(of the law). Any information relating to secret processes or methods of manufacture shall be kept confidential.

This letter constitutes notification of the New York State Department of Environmental Conservation's intention to investigate the validity of this suspicion of Hazardous Substance deposition at this property. The purpose of the investigation, called a Preliminary Site Assessment (PSA), is to familiarize ourselves with the site and the immediate site vicinity. Conceptually, the PSA could involve the collection of all available information, a site inspection including photographs, a geophysical survey to collect stratigraphic data; a soil gas study to search for underlying soil and groundwater contamination; collection of samples; the installation of monitoring wells, laboratory analyses of samples collected from groundwater, surface water, soil, air, and waste material to determine the presence of hazardous substances and significance of contamination. The proposed study for your site may include some or all of the above items.

Since a final determination has not been made on the specific needs of this study, we are unable to give a cost estimate at this time.

This PSA will be performed over a one-year period. In order to take such samples, the DEC may use consultants, contractor or other person so authorized to enter the site and areas near such site and inspect and take samples of wastes, soils, air, surface water and groundwater or cause to be used such sampling methods as it determines to be necessary, including, but not limited to, soil borings and monitoring wells.

We also request that you provide all currently available information which would be helpful in our investigation work. This information includes the following:

- all generators of wastes deposited at the site;
- types and quantities of such wastes; b.
- period of time site was operated;
- description of site operational practices; đ.
- description of any known health or environmental problems at the site; and
- any other information which may assist NYSDEC or its consultant to evaluate the £. public health or environmental significance of this site.

The NYSDEC or its consultant will be contacting you in the near future to mutually agree upon a time and place to collect this information and obtain copies of any documents from which this information was derived.

If you have any questions in connection with this matter, please contact me, at (518) 457-0639.

Sincerely.

John Swartwout

Chief

Eastern Investigation Section

Encl.

ATTACHMENT C

CD-ROM with STL Laboratory Reports for the August-October 2006 Sampling Program

APPENDIX B

Summary Soil Data Tables and Laboratory Deliverables

TABLE 1
Analytical Results for Soil Location_sorted

SBOR_15.2 SBOR_15.2 <t< th=""><th></th><th>Area Of Concern</th><th></th><th>Red Wing</th><th>Red Wing</th><th>Red Wing</th><th>Red Wing</th><th>Red Wing</th><th>Red Wing</th><th>Blue Wing</th><th>Blue Wing</th><th>Blue Wing</th><th>Blue Wing</th><th>Blue Wing</th></t<>		Area Of Concern		Red Wing	Red Wing	Red Wing	Red Wing	Red Wing	Red Wing	Blue Wing	Blue Wing	Blue Wing	Blue Wing	Blue Wing
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Collection Dyage Controlled Seal Seal Seal Seal Seal Seal Seal Seal		ENVIRON Sample ID	Part 375-6	- 1	SB02_1.5-2	$SB03_1-2$	$SB04_1-2$	$SB05_1-2$	SB06_0.5-1				SB09 1-2	SB09 4-4.
Collection Depth (b) Cheeney 1+3 15-2		Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
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Sample Date 6/18/2008		Sample Method	Objectives	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe
Chiorobenzene		Sample Date Comments		6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008	6/18/2008
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Heytachlore 500 U (0.37) U (0.037) U (0.37) U (0.037) U (0.037) U (0.0074)		3,3'-Dichlorobenzidine	•		U (0.74)	Ω (0.8)								
Hexachlorobenzene		Fluoranthene			U(0.37)	U (0.4)								
Indeno(1,2,3-cd)pyrene 5.6		Hexachlorobenzene			U (0.037)	U(0.04)								
2-Methylnaphthalene - U (0.37) 4-Methylphenol 500 U (0.37) 3-Nitroaniline - U (0.37) 4-Nitroaniline - U (0.37) 4-Nitroaniline - U (0.37) Phenanthrene 500 U (0.74) Pyrene 500 U (0.37) delta-BHC 500 U (0.074) Gamma-BHC 500 U (0.0074) Heptachlor 15 U (0.0074) U (0.		Indeno(1,2,3-cd)pyrene	9.6		U (0.037)	U (0.04)								
4-Methylphenol 500 U (0.37) Naphthalene 500 U (0.37) 3-Nitroaniline - U (0.74) 4-Nitroaniline - U (0.74) Phenanthrene 500 U (0.37) Pyrene 500 U (0.37) Gamma-BHC 500 U (0.0074) U (0.0074) Endosulfan II 200 U (0.0074) U (0.0074) Heptachlor 15 U (0.0074) U (0.0074) Methoxychlor - U (0.0074) U (0.0074)		2-Methylnaphthalene			U(0.37)	U (0.4)								
Naphthalene 500 U (0.37) 3-Nitroaniline - U (0.74) 4-Nitroaniline - U (0.74) Phenanthrene 500 U (0.74) Pyrene 500 U (0.37) delta-BHC 500 U (0.037) gamma-BHC 9.2 U (0.0074) U (0.0074) Heptachlor 15 U (0.0074) U (0.0074) Methoxychlor - U (0.0074) U (0.0074)		4-Methylphenol	200		U(0.37)	U (0.4)								
3-Nitroaniline - U (0.74) 4-Nitroaniline - U (0.74) Phenanthrene 500 U (0.37) Pyrene 500 U (0.37) delta-BHC 500 U (0.0074) gamma-BHC 9.2 U (0.0074) U (Endosulfan II 200 U (0.0074) U (Methoxychlor 15 U (0.0074) U (Naphthalene	200		U(0.37)	U (0.4)								
4-Nitroaniline - U (0.74) Phenanthrene 500 U (0.37) Pyrene 500 U (0.37) delta-BHC 500 U (0.0074) U (0.0074) gamma-BHC 9.2 U (0.0074) U (0.0074) Endosulfan II 200 U (0.0074) U (0.0074) Heptachlor 15 U (0.0074) U (0.0074) Methoxychlor - U (0.0074) U (0.0074)		3-Nitroaniline	•		U (0.74)	U (0.8)								
Phenanthrene 500 U (0.37) Pyrene 500 U (0.37) delta-BHC 500 U (0.0074) U (0.0074) gamma-BHC 9.2 U (0.0074) U (0.0074) Endosulfan II 200 U (0.0074) U (0.0074) Heptachlor 15 U (0.0074) U (0.0074) Methoxychlor - U (0.0074) U (0.0074)		4-Nitroaniline	•		U (0.74)	U(0.8)								
Pyrene S00 U (0.37) delta-BHC S00 U (0.0074) U (0.0074		Phenanthrene	200		U(0.37)	U (0.4)								
delta-BHC 500 U (0.0074) gamma-BHC 9.2 U (0.0074) Endosulfan II 200 U (0.0074) Heptachlor 15 U (0.0074) Methoxychlor - U (0.0074)		Pyrene			U (0.37)	U (0.4)								
500 U (0.0074) 9.2 U (0.0074) 200 U (0.0074) 15 U (0.0074)	PEST													
200 U (0.0074) 200 U (0.0074) 15 U (0.0074) - U (0.0074)		delta-BHC	500		U (0.0074)	U (0.0081)								
200 15 U (0.0074) - U (0.0074)		gamma-Bric			(0.00/4)	(0.0081)								
U (0.0074)		Endosultan II			(0.00/4)	U (0.0081)								
- U (0.00/4)		Heptachlor			U (0.0074)	U (0.0081)								
		Methoxychlor	•		U (0.00/4)	U (0.0081)								

TABLE 1
Analytical Results for Soil_Location_sorted

SB09	SB09_4-4.5	Soil	4-4.5	Geoprobe	6/18/2008			U(1.1)	2.5 (1)	38.4 B (0.29)	0.37 B (0.023)	U (0.11)		31.4 (0.63)		21.6 (0.7)			11.5 (0.5)				198 (0.88)		U(1.1)	U(0.27)			31.2 (1.3)	
SB09	SB09_1-2	Soil	1-2	Geoprobe	6/18/2008			U(1.1)	3.4 (1)	46.4 (0.29)	0.44 (0.023)	U (0.11)	,	33.6 (0.63)		33.1 (0.83)	,		13.3 (0.5)	•			181 (0.88)		U(1.1)	U (0.27)			30.9 (1.3)	,
SB08	SB08_2-2.5	Soil	2-2.5	Geoprobe	6/18/2008			U(1.1)	2.6 (1)	61.4 (0.29)	0.45 (0.022)	U (0.11)	,	37 (0.63)	·	19.9 (0.7)	,		10 (0.49)	,			297 (0.88)		U(1.1)	U (0.27)			32 (1.3)	•
SB08	SB08_0.5-1.5	Soil	0.5-1.5	Geoprobe	6/18/2008			U(1.1)	4.9 (1)	70 (0.29)	0.62 (0.023)	U (0.11)		31 (0.63)	•	23.1 (0.7)	,		14.5 (0.5)	,			175 (0.88)	,	U(1.1)	U (0.27)			34.7 (1.3)	,
SB07	SB07_0.5-1	Soil	0.5-1	Geoprobe	6/18/2008			U(1.1)	3.6 (1)	27.7 B (0.3)	0.3 B (0.023)	U (0.12)	•	74.4 (0.65)	,	15.9 (0.72)	,		12.9 (0.51)	,			71 (0.91)	•	1.3 (1.1)	U (0.28)			34.9 (1.3)	,
SB06	SB06_0.5-1	201	0.5-1	Geoprobe	6/18/2008			U(1.1)	5.4 (1)	143 (0.3)	0.4 B (0.023)	U (0.11)	,	28.5 (0.64)	,	24 (0.71)			70.4 (0.51)				122 (0.9)	•	1.6 (1.1)	U (0.28)	,		48 (1.3)	
SB05	$SB05_1-2$	Soil	1-2	Geoprobe	6/18/2008			U(1.1)	3.4 (1)	374 (0.29)	0.44 (0.022)	U (0.11)		23.5 (0.63)	,	24 (0.7)			20.4 (0.49)				87.5 (0.88)		U(1.1)	U (0.27)	,		50.4 (1.3)	
SB04	SB04_1-2	Soil	1-2	Geoprobe	6/18/2008			U(1.1)	3.5 (0.99)	88.2 (0.29)	0.46 (0.022)	U (0.11)		28.5 (0.62)	•	26.3 (0.68)			16.8 (0.48)				61.4 (0.86)		U(1.1)	U (0.26)	,		31 (1.3)	
SB03	SB03_1-2	Soll	1-2	Geoprobe	6/18/2008		7500 (18.7)	1.6 B (1.2)	5.6 (1.1)	367 (0.31)	0.66 (0.024)	0.19 B (0.12)	1900 (18)	32.9 (0.68)	16.9 (0.85)	44.3 (0.75)	4 (0.5)	20800 (9.6)	12.9 (0.53)	4720 (16.9)	176 (0.7)		224 (0.94)	827 B (31.4)	U(1.2)	U (0.29)	329 B (87.2)	21 (0.36)	47.9 (1.4)	
SB02	SB02_1.5-2	Tios	1.5-2	Geoprobe	6/18/2008		6660 (17.1)	U (1.1)	3 (0.99)	46.1 (0.29)	0.48 (0.022)	U (0.11)	2050 (16.5)	28 (0.62)	16.8 (0.77)	24.4 (0.69)	U (0.5)	15900 (8.8)	17.9 (0.49)	4050 (15.5)	207 (0.64)		145 (0.86)	782 B (28.7)	U(1.1)	U(0.27)	267 B (79.8)	20.8 (0.33)	33.2 (1.3)	
SB01	SB01_1-1.5	NOS .	1-1.5	Geoprobe	6/18/2008			U (1.1)	3.1 (0.98)	50.3 (0.28)	0.47 (0.022)	U (0.11)		26.7 (0.61)		21.8 (0.67)			10.4 (0.48)				176 (0.85)		U(1)	U (0.26)			25.9 (1.3)	
	nple ID Part 375-6	ommercial Soil	Cleanup	Objectives			•	•	16	400	290	9.3	•	1500	•	270	27	•	1000	•	10000	2.8	310	•	1500	1500	•	•	10000	
Location	ENVIRON Sample ID	IMaurix C	Collection Depth (ft)	Sample Method	Sample Date Comments		Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium (total)	Cobalt	Copper	Cyanide (total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Vanadium	Zinc	
						INORG																								Notes:

¹ All concentrations are presented in mg/kg (ppm).
2 Only compounds with at least one detection are shown.
3 Concentrations that exceed the Part 375-6 Commercial Soil Cleanup Objectives are boldfaced.

Abbreviations:
U -- Not Detected.
J -- Estimated Concentration.
B (organic) -- Analyte found in laboratory blank and sample.
B (inorganic) -- Reported value is less than the Reporting Limit but greater than the Instrument Detection Limit.
P -- For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%
* -- For dual column analysis, the lower concentration is being reported due to coeluting interference.
() -- Detection Limit.

TABLE 1
Analytical Results for Soil_Location_sorted

Area Ol Concern Location		Blue Wing SB10	Blue Wing SB10	Blue Wing SB10	Blue Wing SB11	Blue Wing SB11	Blue Wing SB11	Blue Wing				
HNVIRON Sample	Dar 275.6	CB10 1-2	CB10 2.3	SB10 4-5	CB11 0 5.2	CD11 2 2	CD11 6 6 4			1 7 0 01 00		25 25 25
Matrix Matrix	ζ	Spin_1-2	Solds Foot	F-01GS		SDII_2-3	- 1	3512_0.3-1	SB12_2-2.5	SB13_0.5-1	SB13_4-4.5	8-C./_SIBIS
Collection Denth (#)		1-2	2-3	4-5	0.5-2	30ii 2-3	5.5.4	3011	1100	Soll 0.5.1	Soil	100
Constant of the Control of the Contr	Objectives	010,000	C-1	C-10-10-0	2-0.0	1	1.0.0	I-7-7	C.2-2	1-5.0		6-C./
Sample Intentor Sample Date		6/18/2008	Geoprope 6/18/2008	6/18/2008	6/17/2008	Geoprobe 6/17/2008	Geoprobe 6/17/2008	Geoprobe 6/17/2008	Geoprobe 6/17/2008	Geoprobe 6/18/2008	Geoprobe 6/18/2008	Geoprobe 6/18/2008
VOC												
Acetone	200	U (0.69)									(7.0) 11	(50) 11
Chlorobenzene	200	0.052 J (0.69)									()	(25.0) 5
Chloroform	350	0.57 J (0.69)									(4.6)	(20) 0
1 3-Dichlombenzene	280	0.28 I (4.1)	(6) (0) (1)	(0.39)							0.017 1 (0.46)	0 (0.32)
1 1-Dickloroethane	240	(11) 507.0	(50.5)	(50.0)							0.017 (0.46)	(0.0)
1,1-Dichiologualic	047	0 (0.02)									U (0.7)	0 (0.52)
Memylene Chloride	900	0 (0.41)									U (0.42)	U (0.31)
Tetrachloroethene	150	U(0.14)									U(0.14)	U (0.1)
Toluene	200	$0.16 \mathrm{J} (0.69)$									U (0.7)	U (0.52)
1,2,4-Trichlorobenzene	•	0.52 (0.41)	U(0.039)	U(0.039)							0.6 (0.046)	0.082 (0.037)
1,1,1-Trichloroethane	200	0.66 J (0.69)										_
SVOC		•										
Anthracene	200	0.92 J (4.1)	U (0.39)	U (0.39)							11(0.46)	(17.0) 37)
Benzo(a)anthracene	5.6	0.43 (0.41)	U (0.039)	U (0.039)							0.077 (0.046)	11 (0 037)
Benzo(a)pyrene			U (0.039)	17 (0.039)								11 (0.027)
Benzo(h)fluoranthene	9.5	0.32 I (0.41)	(1) (0.039)	11 (0 039)								0 (0.037)
Renzo(a h i)nerylene	200	0.12.1(4.1)	11 (0 39)	11 (0 39)								11 (0.0)
Donzo(b) funcionathan	960	0.11.0(1.1)	(6:39)	11 (0 039)								0 (0.37)
	OC .	0.715 (0.71)	11 (0.039)	(60.0)							0.16 (0.046)	U (0.037)
ois(2-Ethylnexyl)phthalate	' `	3.5 J (4.1)	0 (0.39)	U (0.39)							0.28 J (0.46)	U (0.37)
Chrysene	90	0.38 J (4.1)	0 (0.39)	0.039							0.12 J (0.46)	U (0.37)
Dibenz(a,h)anthracene	0.56	U (0.41)	U(0.039)	U (0.039)							0.044 J (0.046)	U (0.037)
3,3'-Dichlorobenzidine	•	U (8.2)	U(0.78)	U (0.77)							0.29 J (0.91)	U (0.74)
Fluoranthene	200	0.49 J(4.1)	U (0.39)	U (0.39)							0.088 J (0.46)	U (0.37)
Hexachlorobenzene	9	7.5 (0.41)	U (0.039)	0.039 (0.039)							0.58 (0.046)	U (0.037)
Indeno(1,2,3-cd)pyrene	5.6	$0.16 \mathrm{J} (0.41)$	U (0.039)	U(0.039)							0.11 (0.046)	U (0.037)
2-Methylnaphthalene	•	U(4.1)	U(0.39)	U (0.39)							_	17 (0.37)
4-Methylphenol	200	U(4.1)	U (0.39)	U (0.39)							11 (0.46)	(11 (0 37)
Naphthalene	200	U(4.1)	U (0.39)	U (0.39)							0.012 T (0.46)	11 (0 37)
3-Nitroaniline	•	U (8.2)	U (0.78)	U (0.77)							(10 0) 11	(75.0) 5
4-Nitroaniline	•	11(8.2)	(11 (0 78)	(22)							(10.0) 0	1 (0.4)
Phenanthrene	200		(0.00)	11 (0 39)							0.020 J (0.51)	0)
T. Homen L.	005		(6.50)	(70.0)							0.039 J (0.46)	0 (0.37)
PFST	0000	0.43 J (4.1)	(65.0) U	(vc.u) U							0.09 J (0.46)	U (0.37)
delta-BHC	200	U (0.041)	U (0.0079)	0.012 (0.0078)							(2000 0) 11	(17,00,074)
Osmma-BHC	9.2	0.25 (0.041)	0.012 P* (0.0079)	_							(20000) 11	11 (0.00)
Endoculfon II	ָרָלָי פָּרָלָי		(6/66:6) 17:00	(0.00.0)							(0.0092)	U (0.00/4)
T Introduct	15	0.00 0 0.001)	11 (0.0070)	(0.0078)							U (0.0092)	U (0.00/4)
neplacinor	CI	0.062 F* (0.041)	(6/00/0)	U (0.0078)							U (0.0092)	U (0.0074)
TO INCOMPANY		7		×/=====								

TABLE 1
Analytical Results for Soil Location_sorted

Location		SB10	SB10	SB10	SB11	SB11	SB11	SB12	SB12	SB13	SB13	SB13
ENVIRON Sample ID	Part 375	SB10_1-2	SB10_2-3	SB10_4-5	SB11_0.5-2	SB11_2-3	SB11_5-5.4	SB12_0.5-1	SB12_2-2.5	SB13_0.5-1	SB13_4-4.5	SB13_7.5-8
Matrix	rix Commercial Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Collection Depth (ft)	(ft) Cleanup	1-2	2-3	4-5	0.5-2	2-3	5-5.4	0.5-1	2-2.5	0.5-1	4-4.5	7.5-8
Sample Method	nod Objectives	Geoprobe Geoprobe	Geoprobe									
Sample Date Comments		6/18/2008	6/18/2008	6/18/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/18/2008	6/18/2008	6/18/2008
INORG												
Aluminum	- m	4540 (19.1)	4610 (18.2)	4010 (18)							2520 (21.2)	4260 (17.2)
Antimony	- un	17 (1.2)	U(1.2)	1.3 B (1.1)	200 (1.1)	28.5 (1.3)	1.5 B (1.2)	1.6 B (1.1)	U(1.2)	U (0.99)	25.9 (1.3)	U(1.1)
Arsenic	nic 16	2.1 (1.1)	4.3 (1.1)	4.1 (1)	8.1 (1)	6.6 (1.2)	6.7 (1.1)	2.9 (1)	4.4 (1.1)	U (0.91)	2.5 (1.2)	2.3 (1)
Barium	um 400	8890 (3.2)	128 (0.31)	247 (0.3)	3860 (0.29)	7570 (3.5)	2060 (0.31)	2590 (0.3)	231 (0.31)	62.3 (0.26)	6120 (0.89)	169 (0.29)
Beryllium	um 590	0.05 B (0.025)	0.27 B (0.024)	0.23 B (0.023)	0.19 B (0.022)	0.08 B (0.027)	0.32 B (0.024)	0.17 B (0.023)	0.26 B (0.024)	U (0.02)	0.1 B (0.027)	0.59 (0.022)
Cadmium	um 9.3	0.42 B (0.12)	U (0.12)	U (0.12)	1.6 (0.11)	U (0.13)	0.43 B (0.12)	U (0.12)	U (0.12)	U (0.1)	U (0.14)	U (0.11)
Calcium	- un	8320 (18.3)	1140 (17.5)	1240 (17.3)						,	12100 (20.4)	2020 (16.5)
Chromium (total)	tal) 1500	161 (0.69)	131 (0.66)	316 (0.65)	273 (0.63)	818 (0.75)	(990) 569	266 (0.65)	356 (0.66)	1.7 B (0.57)	2820 (0.77)	43 (0.62)
Cobalt	alt -	U (0.86)	6 B (0.82)	6.3 B (0.81)					•	,	U (0.96)	13.9 (0.78)
Copper	per 270	862 (0.76)	30.6 (0.73)	46.4 (0.72)	354 (0.7)	20.7 (0.83)	90.7 (0.73)	15.9 (0.72)	23 (0.73)	1.4 B (0.63)	736 (0.85)	36 (0.69)
Cyanide (total)	tal) 27	21.6 (0.5)	12.4 (0.5)	3.9 (0.5)	,				•	,	41.1 (0.5)	8 (0.5)
H	Iron -	11900 (9.8)	24200 (9.3)	19600 (9.2)							16700 (10.9)	15500 (8.8)
Le	Lead 1000	121 (0.54)	22.6 (0.52)	24.4 (0.51)	1260 (0.49)	2160 (0.59)	601 (0.52)	1370 (0.51)	96.5 (0.52)	3.7 (0.45)	23000 (3)	44.8 (0.49)
Magnesium	- un	496 B (17.2)	3110 (16.5)	2850 (16.2)							704 B (19.2)	9670 (15.5)
Manganese	ese 10000	71.2 (0.71)	118 (0.68)	102 (0.67)							53.8 (0.79)	119 (0.64)
Mercury	ury 2.8					0.19 (0.022)			U (0.02)			•
Nickel	kel 310	9.2 B (0.96)	119 (0.92)	122 (0.9)	24.4 (0.88)	1.1 B (1)	85.5 (0.92)	50.2 (0.9)	144 (0.92)	U (0.79)	12.6 (1.1)	205 (0.87)
Potassium	- un	184 B (32)	1020 B (30.5)	820 B (30.1)							271 B (35.6)	1040 B (28.8)
Selenium	um 1500	1.4 (1.2)	1.6 (1.1)	U(1.1)	U(1.1)	U (1.3)	U(1.1)	U(1.1)	U(1.1)	U (0.97)	1.3 B (1.3)	U(1.1)
Silver	ver 1500	U (0.3)	U(0.28)	U(0.28)	U(0.27)	U (0.32)	U(0.28)	U(0.28)	U (0.28)	U (0.24)	0.34 B (0.33)	U (0.27)
Sodium	· m	833 B (88.9)	517 B (84.8)	412 B (83.8)						,	508 B (98.9)	433 B (80.1)
Vanadium	- un	4.6 B (0.37)	19.7 (0.35)	17.7 (0.35)							12.7 B (0.41)	16.2 (0.33)
Z	Zinc 10000	261 (1.4)	34.2 (1.4)	35.6 (1.3)	239 (1.3)	99.3 (1.6)	78.3 (1.4)	31.3 (1.3)	50 (1.4)	1.7 B (1.2)	234 (1.6)	83.7 (1.3)
Notes:										•	•	•
1 All concentrations are presented	Þ											
in mg/kg (ppm).												
2 Only compounds with at least one	one											
detection are shown.												
3 Concentrations that exceed the												
Part 375-6 Commercial Soil												
Cleanin Objectives are												

Page 4 of 10

J -- Estimated Concentration.

B (organic) -- Analyte found in laboratory blank and si
B (inorganic) -- Reported value is less than the Reporti
greater than the Instrument Detection Limit.
P -- For dual column analysis, the percent difference b
quantitated concentrations on the two columns is great
* -- For dual column analysis, the lower concentration
due to coeluting interference.

() -- Detection Limit.

Cleanup Objectives are

U -- Not Detected.

Abbreviations: boldfaced.

TABLE 1
Analytical Results for Soil_Location_sorted

Commercial State State Location Companies Co	Area Of Concern		Basement SB14	Blue Wing	Blue Wing	Blue Wing	Blue Wing	Corridor cB16	Corridor	Corridor	Corridor	Corridor	Blue Wing
Comment Comm	LOCATION .			A+100		CIGO		3D10		SBI/		SB18	SBI9
Coloriest Darge (no. 2) Coloriest Darge		Part 375-6	٥,	SB14A_1-2	٥ _,	(7 ₁		Ο,		o,		SB18_0.5-1	Ο,
Content Part Comparis Com		Commercial Soil	2011	100	Soli	2011	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Simple black of Operation Summer Su	Collection Depth (ft)	Cleanup	0.5-1	1-2	0.5-1	2-2.5	4-4.5	0.5-1	2-2.5	0.5-1	2-2.5	0.5-1	0.5-1
Common Surgicia Descriptions 6182088 6182088 6172008 61	Sample Method	Objectives	Geoprobe	Geoprope	Geoprobe	Geoprope	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe
Chickename \$50 U (0.52) U	Sample Date Comments		6/16/2008	6/18/2008	6/17/2008	6/17/2008	6/17/2008	6/16/2008	6/16/2008	6/16/2008	6/16/2008	6/16/2008	6/17/2008
Calorchenzame													
Chlorobeaczee 300	Acetone	200		U(0.52)					0	.026 B (0.0055)			
1,2-Dickhotechane 359 0.13 (0.23) 0.19 (0.24) 0.24 (0.25) 0.	Chlorobenzene	200		U (0.52)						U (0.0055)			
1,1-Dichlocochanne 280	Chloroform	350		0.13 J (0.52)						(2000) 1			
1.1-Dichlocoethane	1.3-Dichlorobenzene	280		(0.39)						(500.0) 0			
Methylene Chloride 500 U (531) 0017 B (151) Transdivocentene 500 0.0721 (61.) U (10.039)	1.1-Dichloroethane	240		0.14 J (0.52)						11 (0 0055)			
Tetrachiorochines 150 0.0321(0.1) Universe 150 0.0321(0.1) Universe 150 0.0321(0.1) Universe 150 0.0371(0.22) Universe 150 0.0371(0.22) Universe 150 Universe	Methylene Chloride	005		(17 (0.31)						O (0.0022)			
1,4-Trichlorochenzen	Tetrachloroethene	150		0.032 T (0.1)					>	.017 D (0.0033)			
1,1,1-Trichloroesthane 50 0.61 (0.52) 1,1,1-Trichloroesthane 50 0.61 (0.52) 1,1,1-Trichloroesthane 50 0.61 (0.52) 0.024 1,1,1-Trichloroesthane 5.6 0.0039 0.024 Benzo(a)princanthene 5.6 0.0039 0.014 Benzo(a)princanthene 5.6 0.0039 0.014 Benzo(a)princanthene 5.6 0.0039 0.014 Benzo(a)princanthene 5.6 0.0039 0.016 Benzo(b)princanthene 5.6 0.0039 0.016 Benzo(a)princanthene 5.6 0.0039 0.016 Benzo(b)princanthene 5.6 0.0039 0.016 Benzo(a)princanthene 5.6 0.0039 0.016 Benzo(b)princanthene 5.6 0.0039 0.018 Benzo(a)princanthene 5.0	Tolliana	005		0.072 1.00 52)						(1,00,001)			
1,1,1,Trichlorocethane	1.2.4-Trichlorohenzene	3		(50 031)						_			
Benzo(a)authracene	1.1.1-Trichloroethane	200		_						_			
Authracene 500 U (0.33) 0.024 Berazo(a)princantene 5.6 U (0.039) 0.14 Berazo(b)filuorantene 5.6 U (0.039) 0.14 Berazo(b)filuorantene 5.6 U (0.039) 0.050 Berazo(b)filuorantene 5.6 U (0.039) 0.13 Berazo(b)filuorantene 5.6 U (0.039) 0.13 bis(2-Ethylbexyl)pathalate 5.6 U (0.039) 0.13 Diberazia, bartarreche 0.5 U (0.039) 0.03 Diberazia, bartarreche 0.0 U (0.039) 0.03 Hexabitrochenzidine 5.0 U (0.039) 0.03 Hexabitrochenzidine 5.0 U (0.039) 0.03 A-Mathiapathalae 5.0 U (0.039) 0.04 A-Mathiapathalae 5.0 U (0.39) 0.04 A-Mathiapathalae 5.0 U (0.039) 0.04 A-Mathiapathalae 5.0 U (0.039) 0.04 A-Mathiapathalae 5.0 U (0.039) 0.04 A-Mathiap										(5500:0)			
5.6 U (0.039) 0.13 5.6 U (0.039) 0.14 5.0 U (0.039) 0.04 5.0 U (0.039) 0.05 5.6 U (0.039) 0.15 6.0 U (0.039) 0.15 7.0 U (0.039) 0.13 8.0 U (0.039) 0.13 9.0 U (0.039) 0.02 1.0 U (0.039) 0.02 2.0 U (0.039) 0.02 3.0 U (0.39) 0.02 4.0 U (0.39) 0.02 5.0 U (0.39) 0.02 6.0 U (0.39) 0.02 8.00 U (0.39) 0.02 9.0 U (0.079) 0.02 8.0 U (0.0079) 0.02 9.2 U (0.0079) 0.02 1.1 U (0.0079) 0.02 1.2 U (0.0079) 0.02 1.3 U (0.0079) 0.02 1.4 0.02 0.02	Anthracene	200		U (0.39)						0.024 J (0.75)			
1 U(0.039) 5.6 U(0.039) 5.6 U(0.039) 5.6 U(0.039) 5.6 U(0.039) 6.7 U(0.0079) 6.	Benzo(a)anthracene	5.6		U (0.039)						0.19 (0.075)			
5.6 U(0.039) 0.044 500 U(0.39) 0.069 6 U(0.39) 0.19 10.5 U(0.39) 0.19 10.5 U(0.39) 0.035 200 U(0.39) 0.022 200 U(0.39) 0.022 200 U(0.39) 0.073 200 U(0.39) 0.045 200 U(0.39) 0.045 200 U(0.39) 0.045 200 U(0.39) 0.025 200 U(0.079) 0.025 200 U(0.079) 0.025 200 U(0.0079) 0.025	Benzo(a)pyrene	-		U (0.039)									
500 U(0.39) 0.069 56 U(0.39) 0.19 6 U(0.39) 0.19 6 U(0.39) 0.22 50 U(0.39) 0.22 6 U(0.39) 0.22 5 U(0.39) 0.045 6 U(0.39) 0.045 7 U(0.39) 0.045 800 U(0.39) 0.045 90 U(0.39) 0.025 1 U(0.39) 0.024 200 U(0.079) 0.025 200 U(0.0079) 0.026 200 U(0.0079) 0.026 15 U(0.0079) 0.007 15 U(0.0079) 0.007 15 U(0.0079) 0.007 15 U(0.0079) 0.007 16 U(0.0079) 0.007 17 U(0.0079) 0.007	Benzo(b)fluoranthene	5.6		U (0.039)									
56 U(0.039) 0.15 - U(0.39) 0.03 56 U(0.039) 0.035 - U(0.039) 0.035 50 U(0.039) 0.035 50 U(0.039) 0.035 50 U(0.039) 0.045 - U(0.39) 0.045 500 U(0.39) 0.045 - U(0.39) 0.045 500 U(0.39) 0.045 500 U(0.007) 0.050 500 U(Benzo(g,h,i)perylene	200		U (0.39)						0.069 J (0.75)			
- U (0.39) 0.05 5.6 U (0.039) 0.035 1.0 U (0.39) 0.035 2.0 U (0.039) 0.035 2.0 U (0.039) 0.071 2.0 U (0.039) 0.071 2.0 U (0.039) 0.071 2.0 U (0.29) 0.072 2.0 U (0.29) 0.072 2.0 U (0.0079) 0.072 2.0 U (0.0079) 0.035 2.0 U (0.0079) U (0.0079) U (0.0079) 2.0 U (0.0079) U (0.0079) U (0.0079) 2.0 U (0.0079) U (0.0079) U (0.0079) 2.0 U (0.0079) U (0.0079) U (0.0079) U (0.0079) 2.0 U (0.0079) U (0.0079) U (0.0079) U (0.0079) 2.0 U (0.0079) U (0.0079) U (0.0079) U (0.0079) 2.0 U (0.0079) U (0.00799) U (0.007	Benzo(k)fluoranthene	26		U(0.039)						0.15 (0.075)			
56 U (0.39) 0.019 0.56 U (0.039) 0.0351 50 U (0.039) 0.022 50 U (0.039) 0.031 5.6 U (0.039) 0.071 5.0 U (0.039) 0.045 5.0 U (0.39) 0.045 5.0 U (0.39) 0.045 5.0 U (0.039) 0.045 5.0 U (0.007) 0.005 5.0 U (0.007)	bis(2-Ethylhexyl)phthalate	•		U (0.39)									
0.556 U (0.039) 0.035 J - U (0.79) 0.22 - U (0.039) 0.23 5.00 U (0.039) 0.031 5.00 U (0.039) 0.045 5.00 U (0.39) 0.045 - U (0.39) 0.045 5.00 U (0.039) 0.045 5.00 U (0.079) 0.002 5.00 U (0.079) 0.003 5.00 U (0.0079) 0.003	Chrysene	99		U(0.39)						0.19 J (0.75)			
- U (0.79) 500 - U (0.39) 6 U (0.039) 5.6 U (0.039) 6 U (0.039) 6 U (0.039) 6 U (0.039) 6 U (0.39) 6 U (0.007) 6 U (0.0079) 6 U (0.0079) 6 U (0.0079) 6 U (0.0079) 7 U (0.0079)	Dibenz(a,h)anthracene	0.56		U(0.039)						0.035 J (0.075)			
500 U (0.39) 0.22 6 U (0.39) 0.31 5.6 U (0.39) 0.073 6 U (0.39) 0.073 6 U (0.39) 0.045 6 U (0.39) 0.045 6 U (0.39) 0.045 6 U (0.39) 0.035 6 U (0.39) 0.035 6 U (0.39) 0.035 6 U (0.007) 0.045	3,3'-Dichlorobenzidine	•		U(0.79)						U(1.5)			
6 U (0.039) 0.071 5.6 U (0.039) 0.073 - U (0.39) 0.045 500 U (0.39) 0.015 500 U (0.39) 0.035 500 U (0.79) 0.035 500 U (0.0079) 0.035	Fluoranthene	200		U (0.39)									
5.6 U (0.039) - U (0.39) - U (0.007)	Hexachlorobenzene	9		U(0.039)						0.31 (0.075)			
- U (0.39) 500 U (0.39) 500 U (0.39) 500 U (0.39) 6.00 - U (0.79) 6.00 - U (0.79) 6.00 - U (0.39) 6.00 - U (0.39) 6.00 - U (0.007) 6.00 - U (0.0079) 6.00 -	Indeno(1,2,3-cd)pyrene	5.6		U(0.039)						0.07 J (0.075)			
500 U (0.39) 500 U (0.39) 500 U (0.39) 0.00 0.00 0.00 0.00 500 U (0.39) 500 U (0.007) 500 U (0.0079)	2-Methylnaphthalene	•		U (0.39)						0.045 J (0.75)			
500 U (0.39) 0.03 - U (0.79) 0.0 - U (0.79) 0.0 500 U (0.39) 0.08 500 U (0.079) 0.0 500 U (0.0079) 0.2 500 U (0.0079) 0.0 15 U (0.0079) 0.0 16 U (0.0079) 0.0 17 U (0.0079) 0.0 18 U (0.0079) 0.0 19 U (0.0079) 0.0 10 U (0.0079) 0.0 11 U (0.0079) 0.	4-Methylphenol	200		U(0.39)						0.15 J (0.75)			
- U (0.79) - U (0.79) - U (0.79) - U (0.39) - U (0.39) - O (0.39)	Naphthalene	200		U (0.39)						0.035 J (0.75)			
- U (0.79) 500 U (0.39) 500 U (0.39) 500 U (0.0079) 9.2 U (0.0079) 15 U (0.0079) U (0.0079)	3-Nitroaniline	•		U(0.79)						0.024 J (1.5)			
500 U (0.39) 0.08 500 U (0.079) 0.2 500 U (0.0079) 0.2 500 U (0.0079) 0.2 500 U (0.0079) 0.2 500 U (0.0079) 0.2	4-Nitroaniline	•		U (0.79)						0.076 J (1.5)			
500 U (0.039) 500 U (0.0079) 9.2 U (0.0079) 200 U (0.0079) 15 U (0.0079)	Phenanthrene	200		U (0.39)						0.086 J (0.75)			
500 U (0.0079) 9.2 U (0.0079) 200 U (0.0079) 15 U (0.0079)	Pyrene	200		U(0.39)						0.25 J (0.75)			
9.2 U (0.0079) 200 U (0.0079) 15 U (0.0079)		200		U (0.0079)						U (0.015)			
200 U (0.0079) 15 U (0.0079)	gamma-BHC	9.2		(62000)11						11 (0 015)			
15 U (0.0079)	Endosulfan II	200		U (0.0079)						(510.0) (1			
(62000)11	Heptachlor	15		(6,000)						(210.0)			
	Methoxychlor	'		(0.000)						(510.0)			

Analytical Results for Soil Location_sorted

, Y	ENVIRON Sample ID		Collection Depth (ft)	Sample Method	Sampl Corr	INORG	Alur	Ant	A	Д	Ber	Cac	Ü	Chromium (total)		0	Cyanide (total)			Magn	Mang	M		Pota	Sel		S	Van		
Location	ple ID Part 375-6	ပိ	oth (ft) Cleanup	Objecti			Aluminum	Antimony	Arsenic	Barium 4	Beryllium 5		Calcium					Iron	Lead 10	Magnesium	Manganese 100	Mercury	Nickel 3	Potassium	Selenium 15	Silver 15	Sodium	Vanadium	Zinc 100	
SB	SB14 0.5-1	() 		Geoprobe	6/16/2008		•	- U(1.1)	16 3 (0.9	400 75.5 (0.28)	590 0.54 (0.022)	9.3 U (0.11)	•	1500 20.1 (0.61)		270 19.9 (0.68)	27	•	1000 11.4 (0.48)		10000	2.8	310 50.7 (0.85)	•	1500 U(1)	1500 U (0.26)		,	10000 34.4 (1.3)	
SB14 S			0.5-1				3840		98) 4.1		22) 0.21 B (0.024)	n	3530	107			_	18200	_	2230	83.9		_				997 B	21.4	_	
SB14A	SB14A 1-2	Soil	1-2	Geoprobe	6/18/2008		3840 (18.3)	U (1.2)	(1.1)	63.9 (0.31)		U (0.12)	(17.7)	107 (0.66)	3.7 B (0.83)	9 (0.73)	U (0.5)	(9.4)	51.8 (0.52)	(16.6)	(69.0)		45.5 (0.92)	947 B (30.8)	U(1.1)	U (0.28)	997 B (85.5)	21.4 (0.36)	20.7 (1.4)	
SB15	SB15 0.5-1	Soil	0.5-1	Geoprobe	6/17/2008			U(1.1)	4 (1)	50.7 (0.29)	0.19 B (0.023)	U (0.11)		141 (0.63)		46.4 (0.7)			648 (0.5)				122 (0.88)		U(1.1)	U(0.27)			27.7 (1.3)	
SB15	SB15 2-2.5	Soil	2-2.5	Geoprobe	6/17/2008			U(1.1)	2.2 (1)	39 B (0.3)	0.26 B (0.023)	U (0.11)		173 (0.64)		48.9 (0.71)			99.1 (0.5)			0.05 (0.019)	120 (0.89)		U(1.1)	U (0.27)			32.5 (1.3)	
SB15	SB15 4-4 5	Soil	4-4.5	Geoprobe	6/17/2008			U(1.1)	3.3 (1)	47.3 (0.3)	0.26 B (0.023)	U (0.12)		188 (0.65)		78.4 (0.72)			368 (0.51)				150 (0.91)	•	U(1.1)	U (0.28)			40 (1.3)	
SB16	SB16 0 5-1	Soil	0.5-1	Geoprobe	6/16/2008			1.7 B (1.1)	3.6 (1)	2800 (0.3)	0.51 (0.023)	0.28 B (0.12)		38.4 (0.65)		56.3 (0.72)			49.6 (0.51)				144 (0.9)	•	U(1.1)	U (0.28)	•		66.1 (1.3)	•
SB16	SB16 2.25	Soil Soil	2.2.5	Geonrohe	6/16/2008			U(1.1)	1.9 (0.99)	44.2 (0.29)	0.42 (0.022)	U (0.11)	•	22.1 (0.61)		15.5 (0.68)			8.1 (0.48)	•		U (0.018)	182 (0.86)	,	U(1.1)	U (0.26)	•		27.3 (1.3)	•
SB17	CD17 0 5 1	I-Co_/IGO	0.5-1	Geomrohe	6/16/2008		5510 (15.9)	1.1 B(1)	4.1 (0.93)	6890 (2.7)	0.53 (0.021)	U (0.1)	7880 (15.3)	134 (0.58)	5.3 B (0.72)	143 (0.64)	12.6 (0.5)	14000 (8.2)		3580 (14.4)	219 (0.6)		40.6 (0.8)	1220 (26.7)	(0.99) U (0.99)	U (0.25)	403 B (74.2)	19 (0.31)	64.3 (1.2)	•
SB17	SD17 7 7 5	Soil _ 2-2.3	2.0 5	Geomobe	6/16/2008			U (1.1)	2.4 (0.98)	47 (0.28)	0.45 (0.022)	U(0.11)	•	29.3 (0.61)	•	15.1 (0.67)	,		8.3 (0.48)	,		U (0.018)	260 (0.85)		U(I)	U (0.26)	,		37.8 (1.3)	
SB18	CD10 05 1	1-0.0.51dc	0.5-1	Geomobe	6/16/2008			U(1.1)	2.6 (1.1)	207 (0.3)	0.28 B (0.023)	U (0.12)	,	28.1 (0.65)	•	19 (0.72)	•		453 (0.51)				6.4 B (0.91)		U(1.1)	U (0.28)			16.1 (1.4)	· · · · · · ·
SB19	CD10 0 6 1	3519_0.5-1 [62]	0.5-1	Geomobe	6/17/2008			U(1.2)	2.8 (1.1)	85.1 (0.31)	0.07 B (0.024)	U (0.12)		19.9 (0.67)	•	24.5 (0.75)	•		49.3 (0.53)				10 (0.94)		U(1.2)	U(0.29)			11.2 (1.4)	· · · · · · · · · · · · · · · · · · ·

Notes:

1 All concentrations are presented in mg/kg (ppm).

2 Only compounds with at least one detection are shown.

3 Concentrations that exceed the Part 375-6 Commercial Soil Cleanup Objectives are boldfaced.

Abbreviations:

U -- Not Detected.

J -- Estimated Concentration.

B (organic) -- Analyte found in laboratory blank and sa B (inorganic) -- Reported value is less than the Reporti greater than the Instrument Detection Limit.

P -- For dual column analysis, the percent difference b quantitated concentrations on the two columns is great *-- For dual column analysis, the lower concentration due to coeluting interference.

() -- Detection Limit.

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TABLE 1
Analytical Results for Soil_Location_sorted

Collection Design Coll	Area Of Concern		Basement	Basement	Basement	M/C Shop	M/C Shop	Storage	Storage	Storage	Red Wing	Red Wing	Red Wing
December December	Location		SB20				SB24		SB25	SB25	SB26	SB27	SB27
Calibration Name Sail Sa	ENVIRON Sample ID	Part 375-6	SB20_0.5-1	- 1			SB24_0.5-1					SB27_0.5-1	SB27_7.5-8
Collection Depth (b) Channell 0.5-1 0.5-		Commercial Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sumple Michael objectives Geographe Gospothe	Collection Depth (ft)	Cleanup	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	2-2.5	4-4.5	0.5-1	0.5-1	7.5-8
Sample Date Chicaton 6/16/2008 6/17/2008 <	Sample Method	Objectives	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe
Community Community	Sample Date		6/16/2008	6/16/2008	6/16/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
Charbone SSD 0.0.03 Price (0.022) U.0.023 1.3. Deblactoristurane SSD U.0.0023 U.0.023 1.3. Deblactoristurane SSD U.0.0023 U.0.023 1.1. Deblactoristurane SSD U.0.0033 U.0.023 1.2. L'Trichlorcellane SSD U.0.0033 U.0.0033 1.1. L'Trichlorcellane SSD U.0.0033 U.0.0033 Benxock-physical SSD U.0.0033 U.0.0033 Benxock-physical SSD U.0.0033 U.0.0033 Benxock-physical SSD U.0.0033 U.0.0033 Benxock-physical SSD U.0.0033 U.0.0033 Debrack-physical SSD U.0.0033 U.0.0033 Debrack-physical SSD U.0.0033 U.0.0033 Debrack-physical SSD U.0.0033 U.0.													
13-Dichordermane													
1. Dichocheme 550 U (0.0852) U (0.25) U (0.25) 1. Dichocheme 250 U (0.0852) U (0.25) U (0.25) 1. Dichocheme 250 U (0.0852) U (0.035) U (0.007) U (0.00	Acetone	200	0.03 B (0.0052)									U (0.52)	U (0.48)
1.3 Chiactobrane 250 U (0.032) U (0.32) U (0.	Chlorobenzene	200	U(0.0052)									U (0.52)	U (0.48)
1, Dichichorehamen 289 10 (63.5) 1, Dichichorehamen 289 10 (63.5) 1, Dichichorehamen 289 10 (63.5) 1, Dichichorehamen 289 10 (63.5) 1, Dichichorehamen 280 10 (63.5) 1, Lichichorehamen 280 10 (63.5) 2, Arichichorehamen 280 10 (63.5) 2, Arichichorehamen 280 10 (63.5) 3, Dichard, Dichard, Dicharden 280 280, 280, 280, 280, 280, 280, 280, 280,	Chloroform	350	U(0.0052)									(1) (0.52)	1) (0.48)
1.2.47 richlorocations	1 3.Dichlombanzana	280	(11 (0 35)									(98 0) 11	11 (0 37)
Little contents	T. T. T. T.	97	(500 0) 11									(00.0) 0	(15.0)
The control coloring The colorin	1, I-Dichloroethane	740	0 (0.0052)									0 (0.52)	0(0.48)
1.2. Tenshborchenee 150 U (0.051) U (0.525)	Methylene Chloride	200	0.039 B (0.0031)									U(0.31)	U(0.29)
1.34 Trichlorochanne	Tetrachloroethene	150	U (0.001)									U (0.1)	U (0.097)
1,24-Trichilocobensone 1,00052 1,0005	Toluene	200	U (0.0052)									U (0.52)	U (0.48)
1,1,1-Trichlococtaine 300 U (0.0052) U (0.055) U (0.057) U (0.055) U (0.057)	1.2.4-Trichlorobenzene	•	U (0.035)									U(0.036)	U(0.037)
District Control of	1.1.1-Trichloroethane	200	(1) (0.0052)									(550)	11 (0 48)
Decay Character 5.6 U (0.35) U (0.35												(200)	(2::5)
Benzo(s)authracene 56 U (0.035)		200	U (0.35)									11 (0.36)	11 (0.37)
December 1 0.021 (0.35) Direct (oliverse) Direc	Benzo(a)anthracene	5.6	0.0035									(200)	11 (0 037)
Bernzólyhlucsuhlene 56 0.0191 (0.035) U (0.035)	Benzolalmene	? -	0.001 1.00 035)									11 (0.036)	11 (0.037)
Discretive 10,000	Denzo(a)prene	7 3	0.021 J (0.033)									(0.036)	(10.037)
Herace(ph) Her	Benzo(b)Iluoranthene	9.6	0.019 J (0.035)									U (0.036)	0 (0.037)
bisC-Ethylbrovaluene 56 U (0.035)	Benzo(g,h,i)perylene	200	0.032 J (0.35)									U (0.36)	U (0.37)
bis(2-Eitythexy)libridate 1 (0.35) Chypsthetale 0 (0.035) U (0.035) Dibenz(a,b)anthracene 0.56 U (0.035) U (0.035) 3,3-Tofhlorobenzidue 0 (0.035) U (0.035) U (0.035) Hexachlorobenzidue 0 (0.035) U (0.035) U (0.035) Hexachlorobenzidue 0 (0.035) U (0.035) U (0.035) Indexchlorobenzidue 0 (0.035) U (0.035) U (0.035) Abdethylphenol 50 U (0.035) U (0.035) U (0.035) Abdethylphenol 50 U (0.35) U (0.35) U (0.35) Abdethylphenol 50 U (0.35) U (0.35) U (0.35) Abdethylphenol 50 U (0.35) U (0.35) U (0.35) Abdrovaline 0 (0.011) U (0.35) U (0.35) U (0.35) Phenanthrene 500 U (0.071) U (0.35) U (0.35) Phenanthrene 500 U (0.0071) U (0.0071) U (0.0071) Brindesulfaul 15 U (0.0071) U (0.0071)	Benzo(k)fluoranthene	99	U(0.035)									U (0.036)	U (0.037)
Chrysene 56 U (0.35) U (0.35) U (0.035) U (0.007) U (0.007	bis(2-Ethylhexyl)phthalate	•	U(0.35)									U (0.36)	U(0.37)
Diheard(a,b)antracene 0.56 U (0.035) U (0.0071) U (Chrysene	99	U (0.35)									U (0.36)	U (0.37)
3,3-Dichlorobenzidine - U (0,73) Hozandrene 50 U (0,35) U (0,35) Hexablorobenzidine 50 U (0,35) U (0,35) Indenci (1,2,3-cd)pyrene 56 0.02 i (0,035) U (0,35) 2-Methylaphtalene 500 U (0,35) U (0,35) A-Methylaphtalene 500 U (0,71) U (0,35) A-Methylaphtalene 500 U (0,71) U (0,35) A-Methylaphtalene 500 U (0,71) U (0,35) Phrene 500 U (0,71) U (0,73) Pyrene 500 U (0,071) U (0,35) Barnamhrene 500 U (0,0071) U (0,0071) Beanname-BHC 9.2 U (0,0071) U (0,0071) Hepptachlor 1 U (0,0071) U (0,0071) Hepptacyclor 1	Dibenz(a,h)anthracene	0.56	U (0.035)									U (0.036)	U (0.037)
Fluoranthene 500 U (0.35)	3,3'-Dichlorobenzidine	•	U (0.71)									U (0.73)	U (0.74)
Hexachlorobenizane 6 U (0.035) U (0.0071) U (Fluoranthene	200	U (0.35)									U (0.36)	U (0.37)
Indeno(1,2,3-cd)pyrene 5.6 0.021(0.035) U(0.036) U(0.036) U(0.36) U(0.37) U(0.37) U(0.37) U(0.37) U(0.37) U(0.37) U(0.36) U(0.36	Hexachlorobenzene	9	U(0.035)									U (0.036)	U (0.037)
2-Methylnaphthalene - U (0.35) U (0.35) 4-Methylphenol 500 U (0.35) U (0.35) Naphthalene 500 U (0.35) U (0.73) 4-Nitroaniline - U (0.71) U (0.73) 4-Nitroaniline - U (0.71) U (0.73) Phenauthraniline - U (0.71) U (0.73) Phenauthraniline - U (0.71) U (0.35) Phenauthraniline - U (0.35) U (0.36) Phenauthraniline - U (0.073) U (0.036) Phenauthraniline - U (0.0071) U (0.0073) Phrenauthraniline - U (0.0071) U (0.0071) Bamma-BHC 500 U (0.0071) U (0.0071) Bridoutline 15 U (0.0071) U (0.0071) Methoxychlor - U (0.0071) U (0.0071)	Indeno(1,2,3-cd)pyrene	5.6	0.02 J (0.035)									U (0.036)	U (0.037)
4-Methylphenol 500 U (0.35) U (0.36) Naphthalene 500 U (0.35) U (0.73) 3-Nitroaniline - U (0.71) U (0.73) 4-Nitroaniline - U (0.71) U (0.73) 4-Nitroaniline - U (0.71) U (0.73) Phraintoaniline - U (0.71) U (0.73) Phraintoaniline - U (0.73) U (0.36) Phraintoaniline - U (0.35) U (0.36) Pyrene 500 U (0.03) U (0.06) Bamma-BHC 500 U (0.0071) U (0.0072) U (0.0073) Bamma-BHC 9.2 U (0.0071) U (0.0071) U (0.0071) Heptuchlor 15 U (0.0071) U (0.0071) U (0.0071) Methoxychlor - U (0.0071) U (0.0071) U (0.0071)	2-Methylnaphthalene	•	U (0.35)									U (0.36)	U (0.37)
Naphthalene 500 U (0.35) 3-Nitroaniline - U (0.71) 4-Nitroaniline - U (0.71) 4-Nitroaniline - U (0.71) 10 (0.71) - U (0.71) Phenanthrene 500 0.01 J (0.35) Pyrene 500 U (0.0071) gamma-BHC 500 U (0.0071) Endosulfan II 200 U (0.0071) Heptachlor 15 U (0.0071) Methoxychlor - U (0.0071) Methoxychlor - U (0.0071)	4-Methylphenol	200	U (0.35)									U (0.36)	U (0.37)
3-Nitroaniline - U (0.71) 4-Nitroaniline - U (0.71) 6.00 0.01 J (0.35) 6.00 0.01 J (0.007) Naphthalene	200	U(0.35)									U (0.36)	U (0.37)	
4-Nitroaniline - U (0.73) Phenauthrene 500 0.01 J (0.35) Pyrene 500 0.01 J (0.35) Pyrene 500 U (0.35) delta-BHC 500 U (0.0073) U gamma-BHC 9.2 U (0.0071) U (0.0073) U Endosulfan II 200 U (0.0071) U (0.0071) Heptachlor 15 U (0.0071) U (0.0071) Methoxychlor - U (0.0071) U (0.0071)	3-Nitroaniline	•	U (0.71)									U (0.73)	U (0.74)
Phenauthrene 500 0.01 J (0.35) Pyrene 500 U (0.35) Actia-BHC 500 U (0.0073) U (0.0073) gamma-BHC 9.2 U (0.0071) U (0.0071) Endosulfan II 2.00 U (0.0071) U (0.0073) U (0.0073) Heptachlor 15 U (0.0071) U (0.0071) Methoxychlor - U (0.0071) U (0.0071)	4-Nitroaniline	•	U (0.71)									U (0.73)	U (0.74)
Pyrene 500 U (0.35) delta-BHC 500 U (0.0071) U (0.0073) U (0.0073) gamma-BHC 9.2 U (0.0071) U (0.0071) U (0.0073) U (0.0073) U (0.0073) U (0.0073) Heptachlor 15 U (0.0071) U (0.0071) U (0.0071) U (0.0071)	Phenanthrene	200	0.01 J (0.35)									U (0.36)	U (0.37)
delta-BHC 500 U (0.0071) U (0.0073) U gamma-BHC 9.2 U (0.0071) U (0.0071) U (0.0071) Endosulfan II 200 U (0.0071) U (0.0071) U (0.0073) U (0.0073) Heptachlor - U (0.0071) U (0.0071) U (0.0071)	Pyrene	200	U (0.35)									U (0.36)	U (0.37)
500 U(0.0071) 9.2 U(0.0071) 200 U(0.0071) 15 U(0.0071) - U(0.0071) - U(0.0071)			,										
9.2 U (0.0071) 200 U (0.0071) 15 U (0.0071) - U (0.0071)	delta-BHC	200	U (0.0071)									U (0.0073)	U (0.0075)
200 U(0.0071) 15 U(0.0071) - U(0.0071) U(0.0071)	gamma-BHC	9.2	U (0.0071)									U (0.0073)	U (0.0075)
15 $U(0.0071)$ - $U(0.0071)$	Endosulfan II	200	U (0.0071)									U (0.0073)	U (0.0075)
- U (0.0071)	Heptachlor	15	U (0.0071)									U(0.0073)	U (0.0075)
	Methoxychlor	•	U (0.0071)									11 (0 0073)	11 (0 0075)

TABLE 1 Analytical Results for Soil_Location_sorted

	Location		SB20	SB21	SB22	SB23	SB24	SB25	SB25	SB25	SB26	SB27	SB27
	ENVIRON Sample ID	Part 375-6	SB20_0.5-1	SB21_0.5-1	SB22 0.5-1	SB23_0.5-1	SB24 0.5-1	SB25 0.5-1	SB25 2-2.5	SB25 4-4.5	SB26 0.5-1	SB27 0.5-1	SB27 7.5-8
		Commercial Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	lioS	lioS	Soil	Soil
	Collection Depth (ft)	Cleanup	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	2-2.5	4-4.5	0.5-1	0.5-1	7.5-8
	Sample Method	Objectives	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe
	Sample Date Comments		6/16/2008	6/16/2008	6/16/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008	6/17/2008
INORG													
	Aluminum	•	4320 (16.5)									7720 (17)	4330 (17.2)
	Antimony	•	U(1)	U (1.1)	U (1.2)	U(1)	U(1.1)	33.2 (1.1)	1.7 B (1.2)	1.7 B (1.2)	U (1.1)	U(1.1)	U(1.1)
	Arsenic	16	4 (0.96)	5.7 (0.99)	3.1 (1.1)	(9) (0.95)	5.9 (1)	95 (1)	59.8 (1.1)	20.4 (1.1)	2.5 (1)	3.9 (0.99)	2.4 (1)
	Barium	400	44.3 (0.28)	75.9 (0.29)	54.2 (0.31)	67.8 (0.28)	154 (0.3)	305 (0.3)	173 (0.31)	75.1 (0.31)	47.5 (0.3)	62.1 (0.28)	30.4 B (0.29)
	Beryllium	290	0.35 B (0.021)	0.5 (0.022)	0.41 B (0.024)	0.35 B (0.021)	0.44 (0.023)	0.53 (0.023)	0.27 B (0.024)	0.41 B (0.024)	0.43 B (0.023)	0.48 (0.022)	0.38 B (0.022)
	Cadmium	9.3	U (0.11)	U (0.11)	U (0.12)	0.24 B (0.11)	0.2 B (0.11)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.11)	U (0.11)
	Calcium	•	12600 (15.8)				•	,	•	•	•	25700 (16.3)	7930 (16.6)
	Chromium (total)	1500	21.8 (0.6)	18.5 (0.62)	21.9 (0.66)	67.5 (0.59)	42 (0.64)	218 (0.65)	(99.0) 5.99	99 (0.66)	58.3 (0.65)	29 (0.61)	29.5 (0.62)
	Cobalt	•	8.2 B (0.74)					•	•	•	•	9 B (0.77)	21.4 (0.78)
	Copper	270	15.7 (0.66)	18.8 (0.68)	15.8 (0.73)	30.1 (0.66)	23.3 (0.7)	59.2 (0.72)	62.3 (0.74)	49.3 (0.73)	55.6 (0.72)	26.2 (0.68)	29.5 (0.69)
	Cyanide (total)	27	3 (0.5)								•	U (0.5)	U (0.5)
	Iron	•	10100 (8.4)									15200 (8.7)	15700 (8.8)
	Lead	1000	8.5 (0.47)	10.8 (0.48)	9.1 (0.52)	211 (0.47)	278 (0.5)	1750 (0.51)	747 (0.52)	438 (0.52)	27.1 (0.51)	12.2 (0.48)	7.3 (0.49)
	Magnesium	•	7450 (14.9)								•	9130 (15.3)	16000 (15.6)
	Manganese	10000	193 (0.62)									254 (0.64)	365 (0.65)
	Mercury	2.8							0.15 (0.02)			•	,
	Nickel	310	122 (0.83)	57.4 (0.86)	107 (0.92)	108 (0.83)	95.1 (0.89)	63.8 (0.91)	129 (0.93)	96.3 (0.92)	118 (0.9)	79.3 (0.85)	301 (0.87)
	Potassium	•	934 B (27.6)					,	•	•		2610 (28.4)	806 B (28.9)
	Selenium	1500	U(1)	U(1.1)	U (1.1)	1.7 (1)	U (1.1)	3.3 (1.1)	1.4 (1.1)	U(1.1)	U (1.1)	U(1.1)	Ú(1.1)
	Silver	1500	U(0.26)	U (0.26)	U(0.28)	U(0.25)	U (0.27)	U(0.28)	U (0.28)	U (0.28)	U (0.28)	U (0.26)	U (0.27)
	Sodium	•	226 B (76.7)					•				410 B (79.1)	361 B (80.4)
	Vanadium	•	13.5 (0.32)									25.1 (0.33)	15.1 (0.33)
	Zinc	10000	17.9 (1.2)	23.2 (1.3)	23.7 (1.4)	127 (1.2)	215 (1.3)	112 (1.3)	51 (1.4)	55 (1.4)	30.8 (1.3)	197 (1.3)	26.1 (1.3)
Notes:												,	
1 All conce	All concentrations are presented												
	, , , , , , , , , , , , , , , , , , ,												

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P -- For dual column analysis, the percent difference b quantitated concentrations on the two columns is great *-- For dual column analysis, the lower concentration due to coeluting interference.

() -- Detection Limit.

B (organic) -- Analyte found in laboratory blank and stan (inorganic) -- Reported value is less than the Report greater than the Instrument Detection Limit.

J -- Estimated Concentration.

U -- Not Detected.

boldfaced. Abbreviations:

in mg/kg (ppm).

2 Only compounds with at least one detection are shown.

3 Concentrations that exceed the Part 375-6 Commercial Soil Cleanup Objectives are

VOC	Location ENVIRON Sample ID	Part 375-6	SB28	SB28	SB28
VOC	ENVIRON Sample ID	Part 375-6	CD20 0.5 1		
VOC			3D 20 0.3-1	SB28 2-2.5	SB28 4-4.5
VOC		Commonial Call	1:00	1:00	
VOC		Cleanin	0 5-1	3011 5-7 5	3011
VOC	Sample Method	Objectives	Geoprobe	Geoprobe	Geonrohe
VOC	Sample Date Comments		6/17/2008	6/17/2008	6/17/2008
	Acetone	200	U (0.52)		
	Chlorobenzene	200	U (0.52)		
	Chloroform	350	U (0.52)		
	1,3-Dichlorobenzene	280	U (0.37)		
	1,1-Dichloroethane	240	U (0.52)		
	Methylene Chloride	200	U (0.31)		
	Tetrachloroethene	150	U (0.1)		
	Toluene	200	U (0.52)		
	1,2,4-Trichlorobenzene	•	U (0.037)		
5000	1,1,1-Trichloroethane	200	U (0.52)		
200	•		í		
	Anthracene	200	U (0.37)		
	Benzo(a)anthracene	2.6	U (0.037)		
	Benzo(a)pyrene	_	U(0.037)		
	Benzo(b)fluoranthene	2.6	U(0.037)		
	Benzo(g,h,i)perylene	200	U (0.37)		
	Benzo(k)fluoranthene	99	U(0.037)		
bis	bis(2-Ethylhexyl)phthalate	•	U(0.37)		
	Chrysene	26	U(0.37)		
	Dibenz(a,h)anthracene	0.56	U (0.037)		
	3,3'-Dichlorobenzidine	•	U (0.74)		
	Fluoranthene	200	U(0.37)		
	Hexachlorobenzene	9	U (0.037)		
	Indeno(1,2,3-cd)pyrene	2.6	U(0.037)		
	2-Methylnaphthalene	•	U (0.37)		
	4-Methylphenol	200	U(0.37)		
	Naphthalene	200	U(0.37)		
	3-Nitroaniline	•	U (0.74)		•
	4-Nitroaniline	•	U (0.74)		
	Phenanthrene	200	U(0.37)		
DECT	Pyrene	200	U (0.37)		
103.1	delta-BHC	200	U (0.0075)		
	gamma-BHC	9.2	U (0.0075)		
	Endosulfan II	200	U (0.0075)		
	Heptachlor	15	U (0.0075)		
	Methoxychlor	•	U (0.0075)		

Location ENVIRON Sample ID	Part 375-6	SB28 SB28_0.5-1	SB28 SB28_2-2.5	SB28 SB28_4-4.5
Matrix (Collection Depth (ft)	Commercial Soil Cleanup	Soil 0.5-1	Soil 2-2.5	Soil 4-4.5
Sample Method Sample Date Comments	Objectives	Geoprobe 6/17/2008	Geoprobe 6/17/2008	Geoprobe 6/17/2008
INORG		4270 (173)		
Antimony	•	1.8 B (1.1)	U(1.1)	U(1.1)
Arsenic	16	2.6 (1)	2.7 (1)	2 (0.99)
Barium	400	109 (0.29)	63.2 (0.29)	
Beryllium	590	0.47 (0.022)	0.51 (0.022)	
Cadmium	9.3	0.47 B (0.11)	U (0.11)	U (0.11)
Calcium Chromium (total)	1500	67.7 (0.62)	(63 (0 63)	(0) 2 (0)
Cobalt	9001		(60.0)	20.7 (0.07)
Copper	270		15 (0.69)	26.9 (0.69)
Cyanide (total)	27		,	,
Iron	•	$\overline{}$		
Lead	1000		18.6 (0.49)	20.1 (0.49)
Magnesium	- 0000			
Mercury	10000	(0.65)	0.004 (0.016)	
Nickel	310	434 (0.87)	354 (0.87)	33.0 86
Potassium			((0.0) +0.0	(00:0) 700
Seleniim	1500		11 (1 1)	11 (1 1)
Silver	1500	U (0.27)	0.0(1.1)	(1.1)
Sodium	•	397 B (80.5)		
Vanadium	•	14.3 (0.33)		
Zinc	10000	40.5 (1.3)	32.5 (1.3)	32.8 (1.3)
Notes:				,
1 All concentrations are presented				
2 Only compounds with at least one				
3 Concentrations that exceed the				
Part 375-6 Commercial Soil				
Cleanup Objectives are				
boldfaced.				
Abbreviations:				
U Not Detected.				
J Estimated Concentration.				
B (organic) Analyte found in laboratory blank and so	ratory blank and sa			
B (inorganic) Reported value is less than the Report	ss than the Reporti			
greater than the Instrument Detection Limit.	n Limit.			
P For dual column analysis, the percent difference b	ercent difference b			
quantitated concentrations on the two columns is great	o columns is great			
* For dual column analysis, the lower concentration	wer concentration			
due to coeluting interference.				
() Detection Limit.				

APPENDIX C

Soil Boring Logs

BORING #:			SB01			CNVLDON
DATE:			6/18/20	08	╛	ENVIRON BORING LOG
START TIME	E:					PROJECT: Sun Chemical: Rosebank
LOGGED BY	·:		Abhinay A	charya	_	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	_	CASE # 21-16443A
DRILLER:			Georg	e	_	
RIG:			Geoprobe Truck	c-Mounted	4	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	4	Red Wing
BORING DIA	: :		2-Inch	1	4	
BORING DE	TH		8 Fee	t	4	
ORGANIC VA EQUIPMENT			PID (10.8	eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION		DESCRIPTION
0.5 – 4	NA	3.5	ND		0.5	- 1.0 Concrete
4 – 8	NA	4.0	ND	SB01_1.0-1.5 1.0-1.5' bgs SB01_2.0-2.5 2.0-2.5' bgs SB01_4.0-4.5 4.0-4.5' bgs	2.5 grey frag 4.5	 2.5 Red-brown sandy silt 4.5 Very highly compacted, red-brown to y sandy silt with some weathered rock gments. Dry. 5.4 Dry concrete (possible footing) 8.0 Compacted, red-brown to grey sandy with small pebbles. Dry.
COMMENTS						

BORING #: DATE:			SB02 6/18/20		ENVIRON BORING LOG
START TIME	ß:				
LOGGED BY	·		Abhinay Ac	charya	PROJECT: Sun Chemical: Rosebank Staten Island, New York
DRILLING C	O:		TPI Environme	ental Inc.	CASE # 21-16443A
DRILLER:		,	Georg	e	
RIG:			Geoprobe Truck	k-Mounted	COMMENTS:
SAMPLING I	METHOD:		Direct-P	ush	Red Wing
BORING DIA	λ:		2- <u>In</u> cl	n	_1
BORING DE	РТН		<u>8</u> Fee	t	
ORGANIC V EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	3.5	ND	SB02_0.5-2.0 0.5-2.0' bgs SB02_2.0-3.0	0.5 – 1.5 Concrete and gravel, dry. 1.5 – 7.5 Compacted, red-brown sandy silt, dry, small pebbles and trace fine gravel throughout.

DEPTH (feet)	BLOW COUNTS	RECOVERY _(feet)	VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
(feet) 0.5 – 4 4 – 8	NA NA	(feet) 3.5 4.0	(ppm) ND ND	SB02_0.5-2.0 0.5-2.0' bgs SB02_2.0-3.0 2.0-3.0' bgs SB02_4.0-4.5 4.0-4.5' bgs	DESCRIPTION 0.5 – 1.5 Concrete and gravel, dry. 1.5 – 7.5 Compacted, red-brown sandy silt, dry, small pebbles and trace fine gravel throughout. More moist between 4.0 – 7.5' bgs with some discoloration between 6.7-7.0' bgs but no odors. 7.5 – 8.0 Very moist sandy silt with increasingly dry content (20-30%)

COMMENTS:

BORING #:			SB03		ENVIRON
DATE:			6/18/20	08	ENVIRON BORING LOG
START TIME	3:				PROJECT: Sun Chemical: Rosebank
LOGGED BY	·:		Abhinay A	charya	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
DRILLER:			Georg	e	
RIG:			Geoprobe Truck	c-Mounted	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	Red Wing
BORING DIA	:		2-Incl	n	
BORING DEF	TH		8 Fee	t	
ORGANIC VA			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS	SAMPLE(S) DESIGNATION	DESCRIPTION
		·	(ppm)	DESIGNATION	
0.5 – 4	NA	2.5	ND		0.5 – 1.0 Mix of concrete and black well-grade gravels
4-8	NA	4.0	ND	SB03_1.0-2.0 1.0-2.0' bgs SB03_2.0-2.5 2.0-2.5' bgs SB03_4.0-4.5 4.0-4.5' bgs	1.0 – 2.0 Brown silty clay, moist slight red staining 2.0 – 3.0 Brown sandy silt compacted, pebbly 3.0 – 4.0 Compacted silty clay, traces of sand 4.0 – 5.5 Soft silty clay, trace gravel, some pebbles 5.5 – 6.0 Concrete. Dry 6.0 – 7.5 Black brown dry sandy silt, coarse sand/ gravel and small pebbles 7.5 – 8.0 Compacted red-brown sandy silt with trace clay
COMMENTS					

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BORING #: DATE:	SB04 6/18/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Red Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	2.5	ND	SB04_1.0-2.0 1.0-2.0' bgs SB04_2.0-3.0 2.0-3.0' bgs	0.5 – 1.0 concrete 1.0 – 1.5 Poorly graded gravels and brown silt and sand 1.5 – 3.5 Dry compacted red-brown sandy silt. Large pebbles throughout.
4 – 8	NA	3.0	ND	SB04_4.0-4.5 4.5-5.0' bgs	3.5 – 4.5 Compacted sandy silt with some clay. Red-brown, slightly moist 4.5 – 6.0 Brown silty clay soft and very moist. 6.0- 8.0 Compacted clayey silt, some large pebbles between 6.5- 7.5' bgs

COMMENTS: In the recovery there was limited amount of soil available due to pebbles

BORING #:			SB05	i	CHAIRON
DATE:			6/18/20	08	ENVIRON BORING LOG
START TIME	3:				PROJECT: Sun Chemical: Rosebank
LOGGED BY	7 :		Abhinay Ac	charya	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
DRILLER:			Georg	<u></u>	
RIG:			Geoprobe Truck	k-Mounted	COMMENTS:
SAMPLING I	METHOD:		Direct-P	ush	Red Wing
BORING DIA	\:		2-Inch	n	
BORING DE	PTH		8 Feet	t	·
ORGANIC V. EQUIPMENT			PID (10.8	s eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4 4 – 8	NA NA	3.5	ND	SB05_0.5-1.0 0.5-1.0' bgs SB05_2.0-3.0 2.0-3.0' bgs SB05_4.0-4.5 4.0-4.5' bgs	0.5 – 1.0 Concrete 1.0 – 2.0 Compacted red-brown sandy silt, slightly moist 2.0 – 4.0 Compacted red-brown sandy silt. Medium pebbles between 3.0-3.4' bgs. Drier than above layer 4.0 – 8.0 Red-brown silty clay with some fine sand. Small pebbles throughout and slightly moist
COMMENTS					·

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BORING #: DATE:	SB06 6/18/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Red Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	
	ORGANIC	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	4.0	ND	SB06_0.5-1.0 0.5-1.0' bgs	0.5 – 1.0 Some black well-graded gravels mixed with tight red-brown sandy silt, slight red staining
				SB06_2.0-2.5 2.0-2.5' bgs	1.0 – 3.0 Compacted brown sandy silt with some clay content. No staining
					3.0 – 4.0 Sandy silt with 30% plastic clay content, slightly moist
4 – 8	NA	4.0	ND	SB06_4.0-4.5 4.0-4.5' bgs	4.0 – 6.0 Sandy silt with some clay, red-brown and some pockets of gravel
					6.0 – 8.0 Red-brown plastic silty clay, very compacted

BORING #:	SB07	ENVIRON
DATE:	6/18/2008	BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Blue Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	4.0	ND	SB07_0.5-1.0 0.5-1.0' bgs	0.5 – 2.0 Red-brown silty clay with some large pebbles, slightly moist. 2.0– 4.0 Red-brown sand silt with many small and medium pebbles. Dryer than above
4 – 8	NA	4.0	ND	SB07_4.0-4.5 4.0-4.5' bgs	4.0 – 8.0 Highly compacted brown sandy silt with some black gravel. Dry. Increasing clay content towards the bottom

BORING #:SB08			SB08		ENVIRON
DATE:			6/18/20	08	BORING LOG
START TIME	£:				PROJECT: Sun Chemical: Rosebank
LOGGED BY	:		Abhinay Ac	charya	Staten Island, New York
DRILLING C	O:		TPI Environme	ental Inc.	CASE # 21-16443A
DRILLER:			George	e	
RIG:			Geoprobe Truck	c-Mounted	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	Blue Wing
BORING DIA	λ:		2-Inch	1	
BORING DEI	TH		8 Feet	t	
ORGANIC V. EQUIPMENT			PID (10.8 eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	3.5	ND	SB08_0.5-1.0 0.5-1.0' bgs	0.5 – 1.0 Poorly graded gravels, dry
				SB08_2.0-2.5 2.0-2.5' bgs	1.0 – 2.5 Brown sandy silt, crumbles with light touch. Traces of very fine black gravel, dry
					2.5 – 2.8 Red-brown sandy silt, crumbly and dry
4 – 8	NA	4.0	ND	SB08_4.0-4.5 4.0-4.5' bgs	2.8 – 4.5 Red-brown silty clay, very moist and soft. Increasing silt content at bottom
					4.5 – 5.0 Red-brown sandy silt, dry.
					5.0 – 7.0 Slightly compacted red-brown sandy silt with some clay, slightly moist
					7.0 – 8.0 Highly compacted clayey silt

BORING #: DATE:			SB09 6/18/20	ENVIRON BORING LOG	
START TIME	3:				PROJECT: Sun Chemical: Rosebank
LOGGED BY	·:		Abhinay A	charya	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
DRILLER:			Georg	e	•
RIG:			Geoprobe Trucl		COMMENTS:
SAMPLING N	METHOD:		Direct-P		7
					Blue Wing
BORING DIA			2-Incl		
BORING DEF	TH		8 Fee		\dashv
ORGANIC VA EQUIPMENT			PID (10.8	SeV)	
DEPTH	BLOW	RECOVERY	ORGANIC VAPORS	SAMPLE(S)	
(feet)	COUNTS	(feet)	(ppm)	DESIGNATION	DESCRIPTION
0.5 – 4	NA	2.5	ND		0.5 – 1.0 Concrete
				SB09_1.0-2.0 1.0-2.0' bgs	1.0 – 2.0 Poorly graded black gravels mixed with brown sandy silt, dry.
				SB09_2.0-3.0 2.0-3.0' bgs	2.0 – 4.0 Very compacted brown sandy silt, slightly moist
4 – 8	NA	4.0	ND	SB09_4.0-4.5 4.0-4.5' bgs	4.0 – 8.0 Brown sandy silt, slightly moist. Slightly compacted with small to medium
					pebbles throughout
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COMMENTS	:				

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BORING #:			SB10		ENVIRON
DATE:			6/18/20	08	BORING LOG
START TIME	B:				PROJECT: Sun Chemical: Rosebank
LOGGED BY	·:		Abhinay Ao	charya	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	CASE# 21-16443A
DRILLER:			Georg	e	
RIG:			Geoprobe Truci	c-Mounted	COMMENTS:
SAMPLING I	METHOD:		Direct-P	ush	Blue Wing
BORING DIA	λ:		2-Incl	1	
BORING DE	РТН		8 Fee	t	
ORGANIC V EQUIPMENT			PID (10.8	eV)	
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	2.0	ND	SB10_1.0-2.0 1.0-2.0' bgs SB10_2.0-3.0	 0.5 - 1.0 Concrete pieces. Red staining 1.0 - 2.0 Silt with deep blue staining. Wet due to perched water. 3.0 - 4.0 Red-brown clayey silt, slight dark
4 – 8	NA	3.5	ND	2.0-3.0' bgs SB10_4.0-4.5 4.0-5.0' bgs	staining 4.0 – 6.0 Very moist red-brown silty clay with blue/green staining 6.0 – 7.0 Red-brown sandy silt compacted. Slightly dark staining
					7.0 – 8.0 Red-brown sandy silt compacted. No staining. Some small pebbles present.

BORING #:			SB11		ENVIRON	
DATE:	_		06/17/20	008		BORING LOG
START TIME						PROJECT: Sun Chemical: Rosebank
LOGGED BY		-	Abhinay A			Staten Island, New York
DRILLING C	O:		TPI Environm			CASE # 21-16443A
DRILLER:			Georg	e		
RIG:			Geoprobe Truck	k-Mounted		COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush		Blue Wing
BORING DIA	\:		2-Incl	<u> </u>		
BORING DE	TH			t		
ORGANIC V EQUIPMENT			PID (10.8	eV)		
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION		DESCRIPTION
0.5 – 4	NA	2.5	ND	SB11_0.5-2.0 0.5-2.0' bgs	gra	5 - 2.0 Yellowish brownish sand, some well- aded gravel with medium pebbles. Red and llow staining
				SB11_2.0-3.0 2.0-3.0' bgs		0 – 4.0 Sandy silt. Deep blue staining, very oist
4 – 8	NA	4.0	ND		4.0	0 - 5.0 Brown coarse sand, dry
				SB11_5.0-5.4 5.0-5.4' bgs		0 - 5.4 Compacted silty clay with black aining, moist
						4-6.0 Yellowish silt with small pebbles mpacted, slightly moist
						0 – 8.0 Brownish red, very compacted, sandy t, slightly moist
COMMENTS						

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BORING #:	SB12	ENVIRON
DATE:	6/17/2008	BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Blue Wing
BORING DIA:	2-Inch	
BORING DEPTH	6 Feet	1
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
	0.5 – 4	NA	2.5	ND	SB12_0.5-1.0 0.5-1.0' bgs	0.5 – 1.5 Concrete mixed with red-stained gravel and blue-stained soil 1.5 – 3.0 Poorly graded gravels, grey, dry.
l					SB12_2.0-2.5 2.0-2.5' bgs	3.0 – 4.0 Silty clay, brown with black staining. Moist.
	4 – 8	NA	2.0	ND	SB12_4.0-4.5 4.0-4.5' bgs	4.0 – 6.0 Very highly compacted, sandy silt with some dark blue staining between 4-4.5' bgs, slightly moist
l						

BORING #: DATE:	SB13 6/18/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Blue Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR	PID (10.8 eV)	

	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
	0.5 – 4	NA NA	0.5 4.0	ND ND	SB13_0.5-1.0 0.5-1.0' bgs SB13_4.0-4.5 4.0-4.5' bgs	0.5 – 4.0 Yellow fine sand (fill/concrete sub- base) moist, some large sized concrete pieces at 4 feet 4.0 – 4.5 Same yellow sand but stained dark green 4.5 – 5.0 Sandy silt with large pebbles. Green staining
divident					SB13-7.5-8.0 7.5-8.0' bgs	5.0 – 5.5 Concrete and gravel 5.5 – 8.0 Red-brown sandy silt with traces of green staining, moist and compacted
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BORING #: DATE:	SB14 6/17/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Blue Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	
	I ODGANIG I	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	2.5	0.5, 1.0, 1.5, 2.0, 3.0, 3.5, 4.0	SB14_0.5-1.0 0.5-1.0' bgs	0.5 - 1.0 dry concrete 1.0 - 4.0 Silty clay, brown. Pockets of poorly
4 – 8	NA	2.9	19, 12, ND	SB14_2.0-2.5 2.0-2.5' bgs	graded gravel throughout. Greenish smudge at 3.5' bgs, moist
				SB14_4.0-4.5 4.0-4.5' bgs	4.0 - 7.5 Sandy silt very fine sand. Brown with random green smudges
					7.5 – 8.0 Wet, dark silty clay

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7	BORING #:			SB14	Α	ENVIRON
	DATE:			6/18/20	08	BORING LOG
٣	START TIME	3:				PROJECT: Sun Chemical: Rosebank
7	LOGGED BY	7:		Abhinay A	charya	Staten Island, New York
4	DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
4	DRILLER:			Georg	e	
٦	RIG:			Geoprobe Trucl	k-Mounted	COMMENTS:
	SAMPLING I	METHOD:		Direct-P	ush	Blue Wing
4	BORING DIA	λ:		2-Incl	n	
	BORING DE	PTH		8 Fee	t	
	ORGANIC V.			PID (10.8	eV)	
To the control of the		BLOW	RECOVERY	ORGANIC	SAMPLE(S)	
	DEPTH (feet)	COUNTS	(feet)	VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
The second	0.5 – 4	NA	3.0		SB14A_1.0-2.0	0.5 – 1.0 concrete
1/4:					1.0-2.0' bgs	1.0 – 2.0 Poorly graded gravels mixed with
-						some silt. Stained red, dry.
valia.						2.0 - 2.5 Very compacted sandy silt, stained dark green, very compacted, sandy silt
						2.5 – 4.0 Red-brown slightly moist, no staining
	4 – 8	NA	3.0		SB14A_4.0-4.5 4.0-5.0' bgs	4.0 – 5.0 Silty sand with large pebbles., moist, stained red and green with paint-like odor
The same						5.0 - 5.5 Some staining, red-brown sandy silt, moist
						5.5 – 7.0 Very moist silty clay, scattered staining, paint-like odor
Į.					SD144 70 80	
and the same					SB14A_7.0-8.0 7.0-8.0' bgs	7.0 – 8.0 Very moist silty clay, no odors or staining
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	COMMENTS	:				

BORING #: DATE:	SB15 6/17/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Blue Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	_i
ORGANIC VAPOR	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	2.5	ND	SB15_0.5-1.0 0.5-1.0' bgs	0.5 – 1.0 Concrete dry 1.0 – 1.6 Poorly graded dry black. Some soil
				SB15_2.0-2.5 2.0-2.5' bgs	1.6 – 4.8 Very moist red-brown silty clay with traces of black gravel at the top and bottom
4 – 8	NA	3.5	ND	SB15_4.0-4.5 4.0-4.5' bgs	4.8 – 6.8 Red-brown to brown sandy silt with medium pebbles throughout. Traces of gravel.
					6.8 – 8.0 Slightly compacted red-brown clayey silt
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i	BORING #:		CNVIDON				
	DATE:			6/16/2008			ENVIRON BORING LOG
	START TIME	: :					PROJECT: Sun Chemical: Rosebank
1000	LOGGED BY	:		Abhinay Ac	charya	_	Staten Island, New York
	DRILLING C	O:		TPI Environme	ental Inc.		CASE # 21-16443A
	DRILLER:			George	<u> </u>		
	RIG:			Geoprobe Truck	r-Mounted		COMMENTS:
	SAMPLING N	METHOD:		Direct-P	ush		Grind and Mix
	BORING DIA	:		2-Inch	1		
1	BORING DEF			8 Feet			
	ORGANIC VA			PID (10.8 eV)			
	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION		DESCRIPTION
200 page 200	0.5 – 4	NA	3.5	ND	SB16_0.5-1.0 0.5-1.0' bgs		5-1.0 Well-graded gravels, dry, black but ith slight greenish tinge
- Application					SB16_2.0-2.5 2.0-2.5' bgs		0 – 2.5 Brown to red-brown sandy silt, ghtly moist
	4 – 8	NA	4.0	ND	SB16_4.0-4.5 4.0-4.5' bgs		5 – 4.3 Moist silty clay. Brown and empacted
Control des							3 – 4.6 Red silty clay and black well-graded avels
4						4.0	6 – 8.0 Highly compacted red sandy silt, moist
- Charles							
	COMMENTS	:			<u> </u>		
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BORING #:	SB17	
DATE:	6/16/2008	ENVIRON BORING LOG
START TIME:		
LOGGED BY:	Abhinay Acharya	PROJECT: Sun Chemical: Rosebank Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Grind and Mix
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	3.5	ND	SB17_0.5-1.0 0.5-1.0' bgs SB17_2.0-2.5 2.0-2.5' bgs	0.5-1.0 Dry well-graded gravels, black bit with slight greenish tinge 1.0 – 2.5 Brown to red-brown sandy silt, slightly moist
4 – 8	NA	4.0	ND	SB17-4.0-4.5 4.0-4.5' bgs	2.5 – 4.3 Moist silty clay. Brown and compacted 4.3 – 4.6 Red silty clay and black well-graded gravels 4.6 – 8.0 Highly compacted red sandy silt, moist

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	BORING #:			SB18		ENVIRON
1		_		0/10/20		BORING LOG
-	START TIME					PROJECT: Sun Chemical: Rosebank
-	LOGGED BY	:		Abhinay A	charya	Staten Island, New York
-	DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
-	DRILLER:			Georg	ge	
	RIG:			Geoprobe Truc	k-Mounted	COMMENTS:
77	SAMPLING N	METHOD:		Direct-P		Grind and Mix
4	BORING DIA			2-Inc		Clind and Wix
7	BORING DEA					7
L				5 Fee		- [
	ORGANIC V. EQUIPMENT			PID (10.8	3 eV)	
	DEPTH	BLOW	RECOVERY	ORGANIC VAPORS	SAMPLE(S)	. Description
. 1	(feet)	COUNTS	(feet)	(ppm)	DESIGNATION	DESCRIPTION
The second secon	0.5 – 4	NA	3.5	ND	CD18 05 10	0.5 - 1.0 Well-graded gravels, black, dry
					SB18_0.5-1.0 0.5-1.0' bgs	1.0 – 2.8 Dry crumbly Silty sand. <ore silt.<="" th=""></ore>
						Coarse sand granules. Dry throughout red- brown material
					SB18_2.0-2.5 2.0-2.5' bgs	2.8 – 4.0 Brown, moist silty clay, compacted.
					2.0-2.5 0gs	Traces of very fine sand
	4 – 8	NA	1.0	ND	SB18-4.0-4.5	4.0 – 5.0 Very dry brown silty sand. Trace
Medical					4.0-4.5' bgs	amount of pebbles
						Refusal at 5' bgs
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- SEE						
	COMMENTS	<u> </u>				

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BORING #:	SB19	ENVIRON
DATE:	6/16/2008	BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	·
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Basement
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	3.0	ND	SB19_0.5-1.0 0.5-1.0' bgs	0.5 – 1.0 Mix of concrete and black poorly graded gravel
					1.0 – 1.5 Very moist silty clay
				SB19_2.0-2.5 2.0-2.5' bgs	1.5 – 4.0 Moist sandy silt, compacted but breaks under pressure
4 – 8	NA	4.0	ND	SB19_4.0-4.5 4.0-4.5' bgs	4.0 – 5.0 Moist, sandy silt with some black streaks
					5.0 – 8.0 Moist, silty clay with pockets of black gravel mixed at 4.0' and 5.0' bgs. Less compacted than above.
					}

BORING #:				SB20		ENVIRON
DATE:				6/16/20	08	BORING LOG
-	START TIME	B:				PROJECT: Sun Chemical: Rosebank
-	LOGGED BY	:		Abhinay Ac	charya	Staten Island, New York
ų	DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
•	DRILLER:			Georg	e	
-	RIG:			Geoprobe Truck	k-Mounted	COMMENTS:
•	SAMPLING N	METHOD:		Direct-P	ush	Basement
•	BORING DIA	\:		2-Inch	1	
-	BORING DEF	TH		8 feet	i	
-	ORGANIC VA			PID (10.8	eV)	
	DEPTH	BLOW	RECOVERY	ORGANIC VAPORS	SAMPLE(S)	
	(feet)	COUNTS	(feet)	(ppm)	DESIGNATION	DESCRIPTION
1	0.5 – 4	NA	2.5		SB20_0.5-1.0 0.5-1.0' bgs	0.5 - 1.0 Black poorly graded gravels, moist.
					SB20_1.0-1.5 1.0-1.5' bgs	1.0 – 1.5 Silty clay. Wet, some pebbles, some sand.
_					SB20_2.0-2.5 2.0-2.5' bgs	1.5 – 4.0 Sand, highly compacted
Ì	4 – 8	NA	3.0	ND	SB20_4.0-4.5 4.0-4.5' bgs	4.0 – 5.0 Silty clay lens, very moist
					1.0 1.3 060	5.0 – 5.3 Silty clay with some black gravel
U						5.3 -8.0 Silty clay some sand and pebbles. Highly compacted
U						
	COMMENTS	:				

E-print.

BORING #:			SB21		ENVIRON
DATE:			6/16/20	08	BORING LOG
START TIME	Ξ:				PROJECT: Sun Chemical: Rosebank
LOGGED BY	' :		Abhinay A	charya	Staten Island, New York
DRILLING C	O:		TPI Environm	ental Inc.	CASE # 21-16443A
DRILLER:			Georg	e	
RIG:			Geoprobe Truc	c-Mounted	COMMENTS:
SAMPLING N	METHOD:		Direct-P	ush	Basement
BORING DIA	λ:		2-Incl	1	
BORING DEPTH			12 Fee	et	
ORGANIC VAPOR EQUIPMENT			PID (10.8	eV)	
DEPTH (fact)	BLOW	RECOVERY	ORGANIC VAPORS	SAMPLE(S)	DESCRIPTION

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
(feet) 0.5 - 4 4 - 8 8-12	NA NA	3.5 3.5 4.0	(ppm) ND ND		DESCRIPTION 0.5 – 1.2 Poorly graded gravels, very moist 1.2 – 2.0 Silty clay, very moist, pebbles. 2.0 – 2.9 Sandy silt, very moist and very soft, pebbly 2.9 – 4.0 Highly compacted, silty clay with many large pebbles. Some light brown staining on otherwise brown soil at 3.0' bgs 4.0 -8.0 Silty clay, slightly moist, red-brown color, some pebbles 8.0 – 11.0 Silty clay, moist, reddish brown with many pebbles. 3" of weathered rock between 9.7-10.0' bgs 11.0 – 12.0 Slightly compacted clay with some silt. Pebbles

[.]	BORING #:			SB22		ENVIRON BORING LOG		
	START TIME	E:						
	LOGGED BY			Abhinay A	charya		PROJECT: Sun Chemical: Rosebank Staten Island, New York	
F. 5.	DRILLING C	O:		TPI Environm	ental Inc		CASE # 21-16443A	
	DRILLER:			Georg	e			
No ment	RIG:			Geoprobe Truck	k-Mounted		COMMENTS:	
	SAMPLING N	METHOD:		Direct-P	ush		Basement	
	BORING DIA	۸:			h			
	BORING DEI	тн		8 Fee	t			
	ORGANIC V. EQUIPMENT			PID (10.8	eV)			
-	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION		DESCRIPTION	
100 mg	0.5 – 4	NA	3.0	ND	SB22_0.5-1.0 0.5-1.0' bgs		5 – 1.0 Concrete and poorly graded gravels, ix of grey and black color. Dry.	
A Appeldi						1.0	0 – 2.0 Wet sandy silt	
					SB22_2.0-2.5	2.0	0 – 2.6 Moist red-brown sandy silt, pebbles.	
with the					2.0-2.5' bgs	2.6	6 – 2.9 Dry well-graded gravels	
						2.9	.9 - 3.5 Wet dark brown silty sand.	
					3.		5 - 4.0 Red-brown highly compacted sand silt	
	4 – 8	NA	4.0	ND	SB22_4.0-4.5 4.0-4.5' bgs		0 – 5.7 Red-brown silty Clay, low plasticity, ghtly moist	
							7 – 8.0 Red-brown highly compacted sandy t with some large pebbles.	
*								
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1								
	COMMENTS	:						
E 3								

100 m

BORING #:	SB23	ENVIRON
DATE:	6/17/2008	BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Maintenance Shop
BORING DIA:	2-Inch	_
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	3.5	ND	SB23_0.5-1.0 0.5-1.0' bgs	0.5 - 1.0 Brown-green (not stained) well-graded gravels with some silt, dry
				SB23_2.0-2.5 2.0-2.5' bgs	1.0 – 5.4 Red-brown silty very fine sand, dry but slightly moist between 2.8 – 4.0' bgs. Pebbly at 5.0-5.4' bgs
4 – 8	NA	3.5	ND	SB23_4.0-4.5 4.0-4.5' bgs	5.4 – 8.0 Slightly compacted sandy silt, red- brown, dry. Medium to large pebbles

district.	BORING #:			SB24			ENVIRON	
934	DATE:			6/17/2008			BORING LOG	
	START TIME	3:				_	PROJECT: Sun Chemical: Rosebank	
新	LOGGED BY	:		Abhinay Ac	charya		Staten Island, New York	
	DRILLING C	O:		TPI Environme	ental Inc.	\perp	CASE # 21-16443A	
1	DRILLER:			Georg	e	\dashv		
	RIG:			Geoprobe Truck	c-Mounted	_	COMMENTS:	
3000	SAMPLING N	METHOD:		Direct-P	ush		Maintenance Shop	
	BORING DIA	λ:		2-Inch	<u> </u>			
	BORING DE							
	ORGANIC VA			PID (10.8	eV)			
Ale sale	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION		DESCRIPTION	
a manufacture	0.5 – 4	NA	3.0	ND	SB24_0.5-1.0 0.5-1.0' bgs		5 – 1.0 Grey-black poorly graded gravel xed with dry red-brown silt	
	4 – 8	NA	4.0	ND	SB24_2.0-2.5 2-2.5' bgs SB24_4.0-4.5	1.5 1.8 wi fra 3.0 sm	0 – 1.8 Dark brown sandy silt with 20-30% nitish well-graded gravels 5 – 1.8 Whitish, paste-like mixture, very moist 8 – 3.0 Silty red-brown coarse sand mixed th white paste-like material and brick agments 0 – 4.0 Slightly moist compacted, clayey silt, nall pebbles 0 – 5.0 Red-brown silty clay, slightly moist.	
Control of the Personal Property of the Person					4.0-4.5' bgs	5.0 so:	ome black gravel pieces between 4.0-4.6' bgs 0 - 5.5 Red-brown sandy silt, slightly moist, fit 5 - 8.0 Compact moist red-brown silty clay	
A like Only	COMMENTS	:						

BORING #:	SB25	<u>CNVIBON</u>
DATE:	6/17/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE# 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
RIG: SAMPLING METHOD:	Geoprobe Truck-Mounted Direct-Push	COMMENTS: Storage Building
		1
SAMPLING METHOD:	Direct-Push	1
SAMPLING METHOD: BORING DIA:	Direct-Push 2-Inch	1

DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
					DESCRIPTION 0.5 – 0.8 Poorly sorted gravel and cement mix 0.8 – 1.5 Black poorly sorted gravel and red silt 1.5 – 2.0 Dry red and yellow sandy silt with some black staining 2.0 – 3.0 Red silty clay, very moist, soft 30 – 5.0 Highly compacted brown then red sandy silt with pocket of black poorly sorted gravel. 5.0 – 5.3 Black and gray poorly sorted gravel 5.3 - 7.5 Red-brown soft sandy silt with traces of clay 7.5 – 8.0 Red-brown silt and traces of sand
		·			

	BORING #:			SB26	1		<u>CNVIBON</u>
	DATE:			6/17/20	08		ENVIRON BORING LOG
No.	START TIME	3:				PROJ	ECT: Sun Chemical: Rosebank
381	LOGGED BY	:		Abhinay Ao	charya		Staten Island, New York
***	DRILLING C	O:		TPI Environme	ental Inc.	CASE	E# 21-16443A
	DRILLER:			Georg	e		
	RIG:			Geoprobe Truck	c-Mounted	4	COMMENTS:
纏	SAMPLING N	METHOD:		Direct-P	ush		Red Wing
	BORING DIA	\:		2-Inch	<u> </u>		
	BORING DEI	PTH		8 Fee	t		
	ORGANIC V. EQUIPMENT			PID (10.8	eV)		
No.	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	•	DESCRIPTION
	0.5 – 4	NA	3.2	ND		0.5 – 1.5 \$	Some concrete then black poorly
_					SB26_0.5-1.0 0.5-1.0' bgs		avels, very moist.
1.0					SB26_2.0-2.5		Red-brown sandy silt with large roughout, moist
41					2.0-2.5' bgs		-
							Very moist compacted clayey silt. dryer at 4' bgs
No.	4 – 8	NA	4.0	ND	SB26_4.0-4.5 4.0-4.5' bgs		Very moist silty clay. Some coarse yel between 4.0-4.5' bgs and coarse
*1							Moist compacted sandy silt with some
						,	
de la							
ţ							
	COMMENTS	:					

BORING #: DATE:	SB27 6/17/2008	ENVIRON BORING LOG
START TIME:		PROJECT: Sun Chemical: Rosebank
LOGGED BY:	Abhinay Acharya	Staten Island, New York
DRILLING CO:	TPI Environmental Inc.	CASE # 21-16443A
DRILLER:	George	
RIG:	Geoprobe Truck-Mounted	COMMENTS:
SAMPLING METHOD:	Direct-Push	Red Wing
BORING DIA:	2-Inch	
BORING DEPTH	8 Feet	
ORGANIC VAPOR EQUIPMENT	PID (10.8 eV)	
	ORGANIC	

EQUI MEM					
DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION	DESCRIPTION
0.5 – 4	NA	3.5	24, 0.0, 0.2, 0.0, 0.0, 6.2, 1.3, 4.4	SB27_0.5-1.0 0.5-1.0' bgs	0.5 – 1.0 Concrete and gravel mixture 1.0 – 4.0 Red-brown sandy silt with pebbles, slightly moist. Black staining from 3.0-4.0' bgs
4 – 8	NA	4.0	21, 38.6, 17.4, 46.2, 0.0, 15.0, 87.0, 12.0		 4.0 – 4.5 Red-brown sandy silt, pebbly and dry 4.5 – 5.5 Red-brown sandy silt with concrete pieces, dry 5.5 – 6.5 Sandy silt, gravelly, dry, brown-green (not stained) weathered rock. 6.5 – 7.0 Dark brown silty clay, slightly moist
8 - 12	NA	3.5	21, 22, 0.0, 0.0, 6, 0.0, 0.0	SB27_7.5-8.0 7.5-8.0' bgs	7.0– 8.0 Dark brown sandy silt with black-green (not stained) gravel 8.0 – 9.5 Dry sandy silt with trace gravel and pebbles 9.5 – 10.0 Compacted sandy silt, moist 10.0 – 10.5 Green (not stained) well sorted gravels, dry 10.5 – 12.0 Very compacted silty clay with small pebbles

_							
	BORING #: DATE: START TIME LOGGED BY DRILLING C DRILLER: RIG: SAMPLING N	ć: O:		Abhinay Ac TPI Environme George Geoprobe Truck	charya ental Inc. e	4	ENVIRON BORING LOG PROJECT: Sun Chemical: Rosebank Staten Island, New York CASE # 21-16443A COMMENTS:
	BORING DIA BORING DEI ORGANIC V. EQUIPMENT	a: PTH APOR		2-Inch 8 Feet PID (10.8			Red Wing
	DEPTH (feet)	BLOW COUNTS	RECOVERY (feet)	ORGANIC VAPORS (ppm)	SAMPLE(S) DESIGNATION		DESCRIPTION
A Sept.	0.5 – 4	NA	3.5	52, 43, 35, 0.0, 0.0, 0.0, 0.0, 0.0	SB28_0.5-1.0 0.5-1.0' bgs SB28_2.0-2.5 2.0-2.5' bgs	1.0 blac thro	- 1.0 concrete and gravel mix - 2.4 Red-brown sandy silt coated with fine ck powdery material. Medium sized pebbles oughout, compacted - 4.0 Red-brown sandy silt with trace black ting. Some large pebbles at core. Increasing y content 3.5-4.0' bgs
· · · · · · · · · · · · · · · · · · ·	4 – 8	NA	4.0	ND	SB28_4.0-4.5 4.0-4.5' bgs	with peb	 7.0 Dry compacted red-brown sandy silt in trace gravel throughout. Small to medium bles throughout. 8.0 Moist, silty clay, red-brown
	COMMENTS	:					

ATTACHMENT A

Soil Cleanup Objectives from NYCRR Subpart 375.6

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	ojectives		
			Protection of Public Health	Public Health			
Contaminant	CAS	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
			Metals				
Arsenic	7440-38-2	16 ^f	16	16	16 [‡]	13	16 ^f
Barium	7440-39-3	350 ^f	400	400	10,000 ^d	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5	4.3	9.3	09	4	7.5
Chromium, hexavalent ^h	18540-29-9	22	110	400	800	€	19
Chromium, trivalent ^h	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 ^d	50	1,720
Total Cyanide h		27	27	27	10,000 ^d	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63	450
Manganese	7439-96-5	2,000 ^f	2,000 ^f	10,000 ^d	10,000 ^d	1600 ^f	2,000 ^f
Total Mercury		0.81 ^j	0.81	2.8	5.7 ⁱ	0.18 ^f	0.73
Nickel	7440-02-0	140	310	310	10,000 ^d	30	130

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	ojectives		
			Protection of Public Health	Public Health			
Contaminant	CAS Number	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
Selenium	7782-49-2	36	180	1,500	6,800	3.9	4,
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 ^d	10,000 ^d	10,000 ^d	109 ^f	2,480
		Δ.	PCBs/Pesticides				
2,4,5-TP Acid (Silvex)	93-72-1	58	100ª	500 ^b	1,000°	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 °	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 °	136
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 °	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.049	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	9.0	60.0
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9
delta-BHC	319-86-8	100ª	100ª	500°	1,000°	0.049	0.25
			}				

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	jectives		
			Protection of Public Health	Public Health			
Contaminant	CAS	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
Dibenzofuran	132-64-9	14	59	350	1,000°	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8	24 ⁱ	200 ⁱ	920 ⁱ	NS	102
Endosulfan II	33213-65-9	4.8	24	200 ⁱ	920 ⁱ	SN	102
Endosulfan sulfate	1031-07-8	4.8	24'	200 ⁱ	920 ⁱ	SN	1,000°
Endrin	72-20-8	2.2	11	89	410	0.014	90.0
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	9	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
			Semivolatiles				
Acenaphthene	83-32-9	100 ^a	100ª	500 ^b	1,000°	20	86
Acenapthylene	208-96-8	100ª	100ª	500 ^b	1,000°	NS	107
Anthracene	120-12-7	100ª	100ª	500 ^b	1,000°	NS	1,000°

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	ojectives		
			Protection of Public Health	Public Health			
Contaminant	CAS Number	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
Benz(a)anthracene	56-55-3	16	1.	5.6	11	SN	16
Benzo(a)pyrene	50-32-8	16	1.	<u></u>	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	1.	7	5.6	11	SN	1.7
Benzo(g,h,i)perylene	191-24-2	100ª	100ª	500 ^b	1,000°	SN	1,000°
Benzo(k)fluoranthene	207-08-9	7-	3.9	56	110	SN	1.7
Chrysene	218-01-9	ار	3.9	56	110	NS	-
Dibenz(a,h)anthracene	53-70-3	0.33	0.33	0.56	1.1	SN	1,000°
Fluoranthene	206-44-0	100ª	100 ^a	500 ^b	1,000°	NS	1,000°
Fluorene	86-73-7	100ª	100ª	500 ^b	1,000°	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	0.5	5.6	11	SN	8.2
m-Cresol	108-39-4	100 ^a	100 ^a	500 ^b	1,000°	NS	0.33
Naphthalene	91-20-3	100 ^a	100ª	500 ^b	1,000°	SN	12
o-Cresol	95-48-7	100ª	100ª	500 ^b	1,000°	NS	0.33

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	jectives		
			Protection of Public Health	Public Health			
Contaminant	CAS Number	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
p-Cresol	106-44-5	34	100ª	500°	1,000°	SN	0.33 ^e
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8	0.8°
Phenanthrene	85-01-8	100ª	100ª	500 ^b	1,000°	NS	1,000°
Phenol	108-95-2	100ª	100ª	500 ^b	1,000°	30	0.33°
Pyrene	129-00-0	100ª	100ª	500 ^b	1,000°	NS	1,000°
			Volatiles				
1,1,1-Trichloroethane	71-55-6	100ª	100ª	500 ^b	1,000°	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	SN	0.27
1,1-Dichloroethene	75-35-4	100ª	100ª	500 ^b	1,000°	NS	0.33
1,2-Dichlorobenzene	95-50-1	100ª	100ª	500 ^b	1,000°	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	09	10	0.02
cis-1,2-Dichloroethene	156-59-2	59	100ª	500 ^b	1,000°	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100ª	100ª	500 ^b	1,000°	SN	0.19

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	ojectives		
			Protection of Public Health	Public Health			
Contaminant	CAS	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1	0.1 ^e
Acetone	67-64-1	100ª	100 ^b	500b	1,000°	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	20	90.0
Butylbenzene	104-51-8	100ª	100 ^a	500 ^b	1,000°	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100 ^a	100ª	500 ^b	1,000°	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33	1.2	9	12	NS	3.2
Methyl ethyl ketone	78-93-3	100 ^a	100ª	500 ^b	1,000°	100 ^a	0.12
Methyl tert-butyl ether	1634-04-4	62	100ª	500 ^b	1,000°	NS	0.93

	Table 375	-6.8(b): Restr	icted Use So	Table 375-6.8(b): Restricted Use Soil Cleanup Objectives	jectives		
			Protection of Public Health	Public Health			
Contaminant	CAS	Residential	Restricted- Residential	Commercial	Industrial	Protection of Ecological Resources	Protection of Ground- water
Methylene chloride	75-09-2	51	100ª	500 ^b	1,000°	12	0.05
n-Propylbenzene	103-65-1	100ª	100ª	500 ^b	1,000°	NS	3.9
sec-Butylbenzene	135-98-8	100ª	100ª	500 ^b	1,000°	NS	11
tert-Butylbenzene	9-90-86	100ª	100ª	500 ^b	1,000°	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100ª	100ª	500°	1,000°	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5- Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	6.0	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100ª	100ª	500°	1,000°	0.26	1.6

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD). Footnotes

^a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

^b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

^c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

^d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO [†] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the value for this use of the site.

⁹ This SCO is derived from data on mixed isomers of BHC.

^h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

¹ This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

¹ This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.