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Removal Site Evaluation Report

Former Virginia-Carolina Chemical Corporation Site

Durham, Durham County, North Carolina

September 2010

ARCADIS

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Removal Site Evaluation Report

Former Virginia-Carolina Chemical Corporation Site, Durham, Durham County, North Carolina

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Table of Contents

1. Introduction **1**

1.1 Project Objectives 1

1.2 Site Description and Background 1

1.2.1 Site Location 1

1.2.2 Former Facility Description 2

1.2.3 Regional Geology and Hydrogeology 3

1.3 Report Organization 4

2. Data Collection Activities **6**

2.1 Introduction 6

2.2 Sampling Preparation Activities 6

2.3 Soil Sampling and Analysis Activities 6

2.4 Sediment Sample and Analysis Activities 7

2.5 Investigation-Derived Waste Sampling 7

2.6 Surveying 8

2.7 Data Validation 8

3. Summary of Results **9**

3.1 Soil and Sediment Standards 9

3.2 Soil Sample Results 9

3.3 Sediment Sample Results 10

3.4 Investigation-Derived Waste Disposal 10

4. Summary **11**

5. References **12**

Tables

Table 2-1 Summary of Sampling and Analytical Program

Table 3-1 Summary of Arsenic and Lead Concentrations in Soil Samples

Table 3-2 Summary of Arsenic and Lead Concentrations in Sediment Sample

Table 3-3 Summary of Solid Investigation-Derived Waste Sample Results

Table 3-4 Summary of Liquid Investigation-Derived Waste Sample Results

Figures

Figure 1-1 Site Location Map

Figure 1-2 Current and Historical Site Features

Figure 2-1 Soil and Sediment Sample Location Map

Figure 3-1 Sample Analytical Results

Appendices

Appendix A Visual Soil Classifications

Appendix B Manifest for Investigative-Derived Waste

LIST OF ACRONYMS AND ABBREVIATIONS

ARCADIS	ARCADIS G&M of North Carolina, Inc.
bgs	below ground surface
EDR	Environmental Data Resources
EMES	ExxonMobil Environmental Services Company
Haz-Mat	Haz-Mat Transportation and Disposal, Inc.
IDW	investigation-derived waste
mg/kg	milligrams per kilogram
NAD83	North American Datum of 1983
NCGS	North Carolina Geological Survey
PODS	Portable On Demand Storage
PWR	partially weathered rock
QC	quality control
RSE	Removal Site Evaluation
SCS	Soil Conservation Service
STATSGO	State Soil Geographic Database
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TestAmerica	TestAmerica, Inc. of Nashville, Tennessee
TWT	Taylor, Wiseman & Taylor
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
VCC	Virginia-Carolina Chemical Corporation
Work Plan	Removal Site Evaluation Work Plan
XRF	x-ray fluorescence

1. Introduction

This report presents the results of the June 2010 Removal Site Evaluation (RSE) data collection activities conducted at the former Virginia-Carolina Chemical Corporation (VCC) site located in Durham, Durham County, North Carolina (the Site). Figure 1-1 identifies the location of the Site on the United States Geological Survey (USGS) 7.5-minute quadrangle maps for Southwest, Southeast Durham, North Carolina.

Data collection activities were completed by ARCADIS G&M of North Carolina, Inc. (ARCADIS) on behalf of ExxonMobil Environmental Services Company (EMES). Activities were completed in accordance with the United States Environmental Protection Agency- (USEPA-) approved *Removal Site Evaluation Work Plan, Former Virginia-Carolina Chemical Corporation Site, Durham, North Carolina* (Work Plan) (ARCADIS, 2010). The Work Plan was approved by the USEPA on January 19, 2010.

1.1 Project Objectives

The objective of the RSE data collection activities was to determine the presence or absence of chemical constituents in soil and sediment that may be attributed to the activities conducted at the former fertilizer plant located at the Site. Based on experience at other former fertilizer sites, the related constituents are arsenic and lead. This report summarizes the RSE data collection activities and the generated data.

1.2 Site Description and Background

1.2.1 Site Location

The Site is located in Durham, Durham County, North Carolina (Figure 1-1). The current street address that most closely matches the former acid chamber location is 2700 Angier Avenue. The geographical location of the center of the Site is at 35.97714° North Latitude and 78.87089° West Longitude (North American Datum of 1983 [NAD83]).

Figure 1-2 depicts the approximate boundaries of the former Durham Site superimposed on a 2007 aerial photograph. Figure 1-2 also depicts the approximate locations of historical site features digitized from Sanborn maps and aerial photographs. The Site is currently occupied by vacant lots and commercial and industrial facilities including Magnetic Attractions and Portable On Demand Storage (PODS). The Magnetic Attractions facility and adjacent parking lot are located on the

central portion of the property along Angier Avenue and are fenced off from the road. The PODs warehouse and parking lot are located on the western portion of the site and are adjacent to the railroad tracks. Most of the area where the former VCC facility structures were located is currently paved as a parking lot or covered by the existing facility buildings.

Land use around the former Durham VCC Site includes commercial and industrial facilities, residential properties, a church, and undeveloped land (Figure 1-2). The nearest residential properties are approximately 100 feet to the north across the Norfolk Southern Railroad right-of-way. Additionally, Hoover Road Apartments are located approximately 200 feet to the northeast of the intersection of the railroad and Angier Avenue. Thomas Concrete of the Carolinas Inc. is adjacent to the vacant lots along Angier Avenue.

Currently, the former Durham site is occupied by three tax parcels. Property boundary and owner information was provided by the Durham County Public Records Database.

1.2.2 Former Facility Description

Virginia-Carolina Chemical Company purchased the Durham fertilizer plant in the 1890s and operated the plant until entering bankruptcy in 1924. At the conclusion of Virginia-Carolina Chemical Company's bankruptcy and reorganization proceedings in 1926, VCC of Richmond, Virginia emerged as a new company and continued to own the Durham fertilizer plant until 1970. VCC merged into Socony Mobil Oil Company, Inc. in 1963, and the company name changed in 1966 to Mobil Oil Corporation. Mobil Oil Corporation sold the Durham plant site in 1970 to Swift Agricultural Chemical Corporation. In 1999, Exxon Corporation merged with Mobil Corporation to form Exxon Mobil Corporation. Mobil Oil became ExxonMobil Oil Corporation, the corporate successor to VCC. Exxon Mobil Corporation is the parent company of ExxonMobil Oil Corporation.

A review of available historical Sanborn maps confirmed that the VCC Durham facility became a complete plant, with an acid chamber structure, that produced phosphate fertilizers between 1907 and 1913. Fertilizer manufacturing continued at this site until sometime between 1950 and 1979. Sanborn maps also indicated that the site operated as a dry mixing plan for a short time around 1907.

Structures associated with the former plant included a fertilizer building (mixing and storage), one acid chamber structure and associated burners, railroad sidings, a nitre

magazine, a motor room, a boiler room, a bag house, a 100,000-gallon reservoir, a locker house, and an office. VCC board meeting minutes indicate that in 1946 funds were allocated for the rehabilitation of the Durham acid plant. Figure 1-2 depicts the general locations of the former site features.

1.2.3 Regional Geology and Hydrogeology

The Site is located in the Piedmont Physiographic Province in North Carolina, which is characterized by generally rolling, well-rounded hills and ridges with a few hundred feet of elevation difference between the hills and valleys (LeGrand, 2004). Rocks of the Piedmont Physiographic Province have been altered by various physical and chemical processes, and generally consist of reddish soils at the surface, underlain by soft, weathered rock throughout the region. Specifically, the Site is underlain by the Upper Triassic sedimentary rocks of the Newark Group, which are characterized as red, brown, or purple shale, claystone, siltstone, sandstone, and conglomerate (NCGS, 1985). The Newark Group sedimentary deposits are generally compact, well-cemented, and occupy a northeastward-trending fault trough to depths of 8,000 to 10,000 feet below ground surface (bgs). Faults and diabase dikes are common throughout the Newark Group (Billingsley, et. al., 1957).

In the North Carolina Piedmont, bedrock is typically overlain by a layer of regolith, also known as overburden or weathered rock. Overburden varies in thickness and composition depending on the topography and geologic history of the area, but commonly consists of a variety of unconsolidated soil types including topsoil, alluvium, saprolite, and partially weathered rock (PWR). Saprolite, a major component of overburden, is the residual product of in-place chemical weathering of crystalline bedrock. PWR commonly exists in a transition zone between highly weathered saprolite and competent bedrock. Although the mineral composition of PWR differs from the parent bedrock due to weathering, PWR commonly retains many of the structural features of the parent bedrock including fractures, joints, and foliation. The contact between PWR and competent bedrock is often irregular and erratic, even over relatively short horizontal distances, due to variability in resistance to weathering controlled by structural features and natural variations in mineral composition (LeGrand, 2004).

The hydrogeology of the region is characterized by a two-part groundwater system, consisting of overburden and crystalline rock (bedrock) aquifers. Overburden is the primary storage reservoir for the underlying bedrock and has high porosity and low permeability. The water table typically exists within the overburden and the direction of

shallow groundwater flow generally mimics the slope of the land surface (LeGrand, 2004). Groundwater wells within the shallow overburden can produce sufficient yields in areas where the overburden is thick and permeable; however, yields generally decline over time as well pumping rates exceed shallow groundwater recharge rates from precipitation. Well yields within the deeper bedrock aquifers of the Piedmont Physiographic Province are generally low (i.e., less than 100 gallons per minute), due to the low permeability of the compact shale layers. Usable groundwater in bedrock is generally limited to fractures and along bedding planes; therefore, surface water is used as the primary water source for larger cities within the region (Billingsley, et. al., 1957).

Review of the State Soil Geographic Database (STATSGO) soil survey data compiled by United States Department of Agriculture (USDA) Soil Conservation Service (SCS) indicates that the underlying soils of the Site (Durham County) are classified as urban land and are variable in texture. Native shallow soils in the immediate Site vicinity are classified as silt loam, sandy clay loam, and silty clay loam (EDR, 2010).

Based on the limited data collected from shallow soil borings advanced at the Site, the subsurface generally consists of brown clayey to sandy silt, and gray to reddish brown silty clay and clay, with varying amounts of fine-grained to coarse sand. Rootlets were generally observed from the ground surface to 0.5 feet bgs, while varying amounts of gravel were encountered at depths varying from the ground surface to 4 feet bgs. Fill materials consisting of wood and brick fragments were observed at depths varying from the ground surface to 4 feet bgs in soil borings advanced in the vicinity of the former VCC facility structures. Additional limited fill materials, including plastic and general refuse, were observed from 0.5 to 2 feet bgs in soil boring DU-SB-35, advanced in the central portion of the Site. Magenta slag was not observed in any of the soil borings advanced at the Site. Groundwater was encountered at depths varying from 2 to 6 feet bgs in several of the soil borings advanced primarily in the central portion of the Site during the RSE field activities. Appendix A provides a detailed description of soils encountered during this investigation.

1.3 Report Organization

The introduction provided in this section is followed in Section 2 with a description of the data collection activities that were performed at the Site. Section 3 presents the results of the data collection activities and Section 4 summarizes the findings of this investigation. Section 5 lists the references cited in this report.

This report has two appendices. These appendices provide visual soil classifications (Appendix A) and the waste manifest detailing the disposal of investigative-derived waste (IDW) (Appendix B).

2. Data Collection Activities

2.1 Introduction

Samples were collected in accordance with the USEPA-approved Work Plan (ARCADIS, 2010) to determine the presence or absence of elevated concentrations of arsenic and lead in site soils and sediment. On June 3, 2010, ARCADIS conducted a preliminary site visit to evaluate access to the proposed sampling locations and to start staking some of the locations. During this preliminary site visit, ARCADIS personnel met with the property owner of Parcel ID 118830 to discuss historical filling and clearing activities at the site. Two additional borings (DU-SB-51 and DU-SB-52) were added based on a request from the property owner due to visual observations (i.e., surficial debris and an area of distressed vegetation) at the Site. In addition, several soil borings were extended to deeper initial depths (i.e. up to 8 feet bgs) based on the owner's request and his account of historical filling of portions of the parcel. Representatives of ARCADIS implemented the RSE field activities between June 7 and June 10, 2010. The field sampling activities are described below.

2.2 Sampling Preparation Activities

Prior to the start of field activities, ARCADIS contacted North Carolina One Call to submit public utility locate requests for the three parcels. A health and safety meeting for personnel was conducted on the morning of June 7, 2010. Representatives of Taylor, Wiseman & Taylor (TWT) of Cary, North Carolina (a private utility locating and surveying firm) were onsite to provide subsurface clearance services, which included identifying and marking the utilities proximate to the proposed sample locations.

2.3 Soil Sampling and Analysis Activities

Soil samples were collected on June 7 through June 10, 2010. Soil sampling included the collection of 177 soil samples from 52 soil boring locations (DU-SB-01 through DU-SB-52) as shown on Figure 2-1. In order to gain access to some of the sampling locations, limited clearing was performed on Parcel ID 118830 using a skid steer with a brush hog attachment. Additionally, a portion of the site on Parcel ID 118815 is covered with approximately 3 inches of asphalt. A Geoprobe was used to penetrate the asphalt at 8 of the soil boring locations on this parcel. Soil samples were collected from 0 to 0.5, 0.5 to 2, and 2 to 4 feet bgs at all soil boring locations using a properly decontaminated stainless steel hand auger. As part of this investigation, ARCADIS used a portable Niton XLT 898D XRF unit to screen soil samples for arsenic and lead

concentrations. If arsenic and/or lead concentrations were detected above the soil screening levels from the 2 to 4 ft sample interval, additional soil samples were collected in 2-foot intervals up to a depth of 10 feet bgs. As discussed above, deeper samples were also collected from select borings on Parcel 118830, in areas which were identified by the property owner as being historically filled. These deeper samples were collected in acetate liners advanced using a Geoprobe.

Samples were submitted to TestAmerica, Inc. of Nashville, Tennessee (TestAmerica) for arsenic, lead, and pH analyses in accordance with the methods specified in the Work Plan. A summary of the samples collected and the analyses performed is presented in Table 2-1. Physical descriptions of the soil samples collected are presented in Appendix A.

2.4 Sediment Sample and Analysis Activities

On June 8, 2010, one sediment sample (DU-SD-1) was collected from 0 to 0.5 feet bgs from a dry drainage ditch located within the vacant lot east of Angier Avenue as shown on Figure 2-1. Water was observed in the drainage ditch on June 3, 2010 during the preliminary site visit. Heavy rain on June 1, 2010 is believed to have contributed to the standing water and the ditch remained dry during the entire RSE sampling event. The sediment sample was submitted to TestAmerica for arsenic, lead and pH analyses. A summary of the sediment sample collected and the analyses performed is presented in Table 2-1.

2.5 Investigation-Derived Waste Sampling

Four 55-gallon steel drums (one containing decontamination water, two containing soil, and one containing personal protective equipment [PPE]) of IDW were generated during the sampling activities at the Site. All drums were staged at the Site, pending analytical results, for later transport and off-site disposal.

A composite soil sample was collected from the soil drums and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals. A composite sample from the drum containing decontamination water was collected and analyzed for target analyte list (TAL) metals and pH. These data were used to adequately characterize IDW materials for proper transport and off-site disposal. A summary of the IDW sampling program is presented in Table 2-1.

2.6 Surveying

Soil sample locations were surveyed by TWT using a combination of conventional survey techniques and Global Positioning System (GPS) survey with a Trimble R8 unit.

2.7 Data Validation

Laboratory analytical data were validated by ARCADIS to evaluate data quality and accuracy. Data validation entails a review of the quality control (QC) data and the raw data to verify that the laboratory was operating within required limits, the analytical results are correctly transcribed from the instrument read outs, and which, if any, environmental samples are related to any deficient QC samples. The objective of the data validation is to identify any questionable or invalid laboratory measurements and to determine if the quality is sufficient to meet the data quality objectives. A summary of the field quality control sampling program is presented in Table 2-1.

3. Summary of Results

Samples were collected and analyzed as described in Section 2 from the locations shown on Figure 2-1. This section of the report describes the results of the field screening and laboratory analytical analyses.

3.1 Soil and Sediment Standards

The site-specific screening levels for soil and sediment samples are 27 mg/kg for arsenic and 895 mg/kg for lead. The screening levels are USEPA-determined values which have been used as a remediation endpoint at similar former VCC fertilizer sites in USEPA Region 4.

3.2 Soil Sample Results

A total of 177 soil samples were collected from the locations shown on Figure 2-1 and screened in the field for arsenic and lead using the XRF unit. Arsenic and lead concentrations were recorded for each sample depth. The soil samples were then submitted to, and analyzed by, TestAmerica for arsenic, lead, and pH.

Laboratory analytical results for soil samples were compared to the screening levels. Arsenic was detected in 10 soil samples from 6 soil boring locations at concentrations exceeding the USEPA screening level of 27 mg/kg. Lead was detected in 12 soil samples from 8 soil boring locations at concentrations exceeding the USEPA screening level of 895 mg/kg.

The maximum arsenic concentration of 339 mg/kg was collected from soil boring DU-SB-28 at a depth of 0 to 0.5 feet bgs. The maximum lead concentration of 7,100 mg/kg was collected from soil boring DU-SB-43 at a depth of 0 to 0.5 feet bgs. The pH of the soil samples varied between 3.2 and 8.0 standard units.

Ten of the 52 boring locations sampled had arsenic and/or lead concentrations that exceeded the screening levels. Soil boring locations with arsenic and/or lead concentrations greater than the screening levels are presented on Figure 3-1. A summary of the soil sample analytical results is presented in Table 3-1.

3.3 Sediment Sample Results

One sediment sample (DU-SD-1) was collected from 0 to 0.5 feet bgs from a dry drainage ditch located within the vacant lot east of Angier Avenue as shown on Figure 2-1. The sediment sample was submitted to TestAmerica for arsenic, lead and pH analyses.

Laboratory analytical results for the sediment sample were compared to the USEPA screening levels listed at the beginning of this section. Arsenic was detected in the sediment sample at a concentration of 40.9 mg/kg, which exceeds the USEPA screening levels of 27 mg/kg. Lead was detected in the sediment sample at a concentration of 89.5 mg/kg, which is below the USEPA screening levels. A summary of the sediment sample analytical results is presented in Table 3-2.

3.4 Investigation-Derived Waste Disposal

Four (4) drums (one containing decontamination water, two containing soil, and one containing PPE) of IDW were generated during the sampling activities at the Site. Based on the laboratory analytical results, the liquid and soil IDW samples were characterized as non-hazardous. Haz-Mat Transportation and Disposal, Inc. (Haz-Mat) transported and disposed of the liquid IDW drum at their Charlotte, North Carolina facility. Haz-Mat transported the soil and PPE drums for disposal at the Republic CMS Landfill in Concord, North Carolina. Analytical results of the IDW drums are presented in Tables 3-3 and 3-4. A copy of the waste manifest is provided in Appendix B.

4. Summary

Ten of the 52 boring locations sampled had arsenic and/or lead concentrations that exceeded the screening levels. Arsenic was detected in 10 soil samples from 6 soil boring locations at concentrations exceeding the USEPA screening level of 27 mg/kg. Lead was detected in 12 soil samples from 8 soil boring locations at concentrations exceeding the USEPA screening level of 895 mg/kg. The maximum arsenic concentration of 339 mg/kg was collected from soil boring DU-SB-28 at a depth of 0 to 0.5 feet bgs. The maximum lead concentration of 7,100 mg/kg was collected from soil boring DU-SB-43 at a depth of 0 to 0.5 feet bgs. The pH of the soil samples varied between 3.2 and 8 standard units.

Arsenic was detected in the sediment sample at a concentration of 40.9 mg/kg, which exceeds the USEPA screening levels of 27 mg/kg. Lead was detected in the sediment sample at a concentration of 89.5 mg/kg, which is below the USEPA screening levels.

5. References

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Tables

Table 2-1
Summary of Sampling and Analytical Program
Removal Site Evaluation Report
VCC Durham, North Carolina

Sample Name	Depth (feet)	Sample Date	Arsenic and Lead Field Measurement	Laboratory Measurement: Arsenic and Lead	Laboratory Measurement: pH	Laboratory Measurement: TAL Metals	Laboratory Measurement: TCLP Metals	Comments
Soil								
DU-SB-01_0_0.5	0-0.5	6/7/2010	X	X	X			MS/MSD
DU-SB-01_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-01_2_4	2_4	6/7/2010	X	X	X			
DU-SB-02_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-02_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-02_2_4	2_4	6/7/2010	X	X	X			
DU-SB-03_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-03_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-03_2_4	2_4	6/7/2010	X	X	X			
DU-SB-04_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-04_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-04_2_4	2_4	6/7/2010	X	X	X			
DU-SB-05_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-05_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-05_2_4	2_4	6/7/2010	X	X	X			
DU-SB-06_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-06_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-06_2_4	2_4	6/7/2010	X	X	X			MS/MSD
DU-SB-07_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-07_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-07_2_4	2_4	6/8/2010	X	X	X			
DU-SB-07_4_6	4_6	6/8/2010	X	X	X			
DU-SB-08_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-QAQC_DUP_08	0_0.5	6/9/2010	X	X	X			Field duplicate of DU-QAQC_DUP_08
DU-SB-08_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-08_2_4	2_4	6/9/2010	X	X	X			
DU-SB-09_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-09_0.5_2	0.5_2	6/9/2010	X	X	X			MS/MSD
DU-SB-09_2_4	2_4	6/9/2010	X	X	X			
DU-SB-10_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-10_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-10_2_4	2_4	6/8/2010	X	X	X			
DU-SB-11_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-11_0.5_2	0.5_2	6/8/2010	X	X	X			MS/MSD
DU-SB-11_2_2.5	2_2.5	6/8/2010	X	X	X			
DU-SB-12_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-12_0.5_2	0.5_2	6/9/2010	X	X	X			

Table 2-1
Summary of Sampling and Analytical Program
Removal Site Evaluation Report
VCC Durham, North Carolina

Sample Name	Depth (feet)	Sample Date	Arsenic and Lead Field Measurement	Laboratory Measurement: Arsenic and Lead	Laboratory Measurement: pH	Laboratory Measurement: TAL Metals	Laboratory Measurement: TCLP Metals	Comments
DU-SB-12_2_3	2_3	6/9/2010	X	X	X			
DU-SB-13_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-13_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-13_2_4	2_4	6/9/2010	X	X	X			
DU-SB-13_4_6	4_6	6/9/2010	X	X	X			
DU-SB-13_6_8	6_8	6/9/2010	X	X	X			
DU-SB-13_8_10	8_10	6/10/2010	X	X	X			
DU-SB-14_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-14_0.5_2	0.5_2	6/9/2010	X	X	X			MS/MSD
DU-SB-14_2_4	2_4	6/9/2010	X	X	X			
DU-QAQC_DUP_07	2_4	6/9/2010	X	X	X			Field duplicate of DU-SB-14_2_4
DU-SB-14_4_6	4_6	6/10/2010	X	X	X			
DU-SB-15_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-15_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-15_2_4	2_4	6/9/2010	X	X	X			
DU-SB-15_4_6	4_6	6/10/2010	X	X	X			
DU-QAQC_DUP_10	4_6	6/10/2010	X	X	X			Field duplicate of DU-SB-15_4_6
DU-SB-15_6_8	6_8	6/10/2010	X	X	X			
DU-SB-16_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-16_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-16_2_4	2_4	6/9/2010	X	X	X			
DU-SB-17_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-17_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-17_2_4	2_4	6/7/2010	X	X	X			
DU-QAQC_DUP_01	2_4	6/7/2010	X	X	X			Field duplicate of DU-SB-17_2_4
DU-SB-18_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-18_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-QAQC_DUP_02	2_4	6/7/2010	X	X	X			Field duplicate of DU-SB-18_0.5_2
DU-SB-18_2_4	2_4	6/7/2010	X	X	X			
DU-SB-19_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-19_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-19_2_4	2_4	6/7/2010	X	X	X			
DU-SB-20_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-20_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-20_2_4	2_4	6/7/2010	X	X	X			

Table 2-1
Summary of Sampling and Analytical Program
Removal Site Evaluation Report
VCC Durham, North Carolina

Sample Name	Depth (feet)	Sample Date	Arsenic and Lead Field Measurement	Laboratory Measurement: Arsenic and Lead	Laboratory Measurement: pH	Laboratory Measurement: TAL Metals	Laboratory Measurement: TCLP Metals	Comments
DU-SB-20_4_6	4_6	6/8/2010	X	X	X			
DU-SB-21_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-21_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-21_2_4	2_4	6/9/2010	X	X	X			
DU-SB-21_4_6	4_6	6/10/2010	X	X	X			
DU-SB-22_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-22_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-22_2_4	2_4	6/9/2010	X	X	X			
DU-SB-22_4_6	4_6	6/10/2010	X	X	X			
DU-SB-22_6_8	6_8	6/10/2010	X	X	X			
DU-SB-22_8_10	8_10	6/10/2010	X	X	X			
DU-SB-23_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-23_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-23_2_4	2_4	6/9/2010	X	X	X			
DU-SB-23_4_6	4_6	6/9/2010	X	X	X			
DU-SB-23_6_8	6_8	6/9/2010	X	X	X			
DU-SB-24_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-24_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-24_2_4	2_4	6/9/2010	X	X	X			
DU-SB-24_4_6	4_6	6/10/2010	X	X	X			
DU-SB-24_6_8	6_8	6/10/2010	X	X	X			
DU-SB-25_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-25_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-25_2_4	2_4	6/9/2010	X	X	X			
DU-SB-26_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-26_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-26_2_4	2_4	6/9/2010	X	X	X			
DU-SB-26_4_6	4_6	6/9/2010	X	X	X			
DU-SB-26_6_8	6_8	6/9/2010	X	X	X			
DU-SB-27_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-27_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-27_2_4	2_4	6/9/2010	X	X	X			
DU-SB-27_4_6	4_6	6/10/2010	X	X	X			
DU-SB-27_6_8	6_8	6/10/2010	X	X	X			
DU-SB-27_8_9.5	8_9.5	6/10/2010	X	X	X			
DU-SB-28_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-28_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-28_2_4	2_4	6/9/2010	X	X	X			
DU-SB-29_0_0.5	0_0.5	6/7/2010	X	X	X			

Table 2-1
Summary of Sampling and Analytical Program
Removal Site Evaluation Report
VCC Durham, North Carolina

Sample Name	Depth (feet)	Sample Date	Arsenic and Lead Field Measurement	Laboratory Measurement: Arsenic and Lead	Laboratory Measurement: pH	Laboratory Measurement: TAL Metals	Laboratory Measurement: TCLP Metals	Comments
DU-SB-29_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-29_2_4	2_4	6/7/2010	X	X	X			
DU-SB-30_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-30_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-30_2_4	2_4	6/7/2010	X	X	X			
DU-SB-31_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-31_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-31_2_4	2_4	6/7/2010	X	X	X			
DU-SB-32_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-32_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-32_2_4	2_4	6/7/2010	X	X	X			MS/MSD
DU-SB-33_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-33_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-33_2_2.5	2_2.5	6/7/2010	X	X	X			
DU-SB-34_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-34_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-34_2_4	2_4	6/8/2010	X	X	X			
DU-SB-35_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-35_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-35_2_4	2_4	6/8/2010	X	X	X			
DU-QAQC_DUP_06	2_4	6/8/2010	X	X	X			Field duplicate of DU-SB-35_2_4
DU-SB-35_4_6	4_6	6/9/2010	X	X	X			
DU-SB-36_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-36_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-36_2_4	2_4	6/8/2010	X	X	X			
DU-SB-37_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-37_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-37_2_4	2_4	6/8/2010	X	X	X			
DU-SB-38_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-38_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-38_2_4	2_4	6/8/2010	X	X	X			
DU-SB-39_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-39_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-39_2_4	2_4	6/8/2010	X	X	X			
DU-SB-40_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-40_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-40_2_4	2_4	6/8/2010	X	X	X			
DU-SB-41_0_0.5	0_0.5	6/7/2010	X	X	X			

Table 2-1
Summary of Sampling and Analytical Program
Removal Site Evaluation Report
VCC Durham, North Carolina

Sample Name	Depth (feet)	Sample Date	Arsenic and Lead Field Measurement	Laboratory Measurement: Arsenic and Lead	Laboratory Measurement: pH	Laboratory Measurement: TAL Metals	Laboratory Measurement: TCLP Metals	Comments
DU-QAQC_DUP_03	0_0.5	6/7/2010	X	X	X			Field duplicate of DU-SB-41_0_0.5
DU-SB-41_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-42_0_0.5	0_0.5	6/7/2010	X	X	X			
DU-SB-42_0.5_2	0.5_2	6/7/2010	X	X	X			
DU-SB-42_2_4	2_4	6/7/2010	X	X	X			
DU-SB-43_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-43_0.5_2	0.5_2	6/8/2010	X	X	X			
DU-SB-43_2_4	2_4	6/8/2010	X	X	X			
DU-SB-44_0_0.5	0_0.5	6/10/2010	X	X	X			
DU-SB-44_0.5_2	0.5_2	6/10/2010	X	X	X			
DU-SB-44_2_4	2_4	6/10/2010	X	X	X			MS/MSD
DU-SB-45_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-45_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-45_2_4	2_4	6/9/2010	X	X	X			
DU-SB-46_0_0.5	0_0.5	6/10/2010	X	X	X			
DU-SB-46_0.5_2	0.5_2	6/10/2010	X	X	X			
DU-SB-46_2_4	2_4	6/10/2010	X	X	X			
DU-SB-47_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-47_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-47_2_4	2_4	6/9/2010	X	X	X			
DU-SB-48_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-48_0.5_2	0.5_2	6/9/2010	X	X	X			MS/MSD
DU-SB-48_2_4	2_4	6/9/2010	X	X	X			
DU-QAQC_DUP_09	2_4	6/9/2010	X	X	X			Field duplicate of DU-SB-48_2_4
DU-SB-49_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-SB-49_0.5_2	0.5_2	6/8/2010	X	X	X			MS/MSD
DU-SB-49_2_4	2_4	6/8/2010	X	X	X			
DU-QAQC_DUP_04	2_4	6/8/2010	X	X	X			Field duplicate of DU-SB-49_2_4
DU-SB-50_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-50_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-50_2_4	2_4	6/9/2010	X	X	X			
DU-SB-51_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-51_0.5_2	0.5_2	6/9/2010	X	X	X			
DU-SB-51_2_4	2_4	6/9/2010	X	X	X			
DU-SB-52_0_0.5	0_0.5	6/9/2010	X	X	X			
DU-SB-52_0.5_2	0.5_2	6/9/2010	X	X	X			

Table 2-1
Summary of Sampling and Analytical Program
Removal Site Evaluation Report
VCC Durham, North Carolina

Sample Name	Depth (feet)	Sample Date	Arsenic and Lead Field Measurement	Laboratory Measurement: Arsenic and Lead	Laboratory Measurement: pH	Laboratory Measurement: TAL Metals	Laboratory Measurement: TCLP Metals	Comments
DU-SB-52_2_4	2_4	6/9/2010	X	X	X			
Sediment Samples								
DU-SD-1_0_0.5	0_0.5	6/8/2010	X	X	X			
DU-QAQC_DUP_05	0_0.5	6/8/2010	X	X	X			Field duplicate of DU-SD-1_0_0.5
Field Quality Control								
DU-QAQC_EB_01	NA	6/7/2010		X				Field Equipment Blank
DU-QAQC_EB_02	NA	6/8/2010		X				Field Equipment Blank
DU-QAQC_EB_03	NA	6/9/2010		X				Field Equipment Blank
DU-QAQC_EB_04	NA	6/10/2010		X				Field Equipment Blank
Investigation Derived Waste								
DU-IDW_SO_01	NA	6/10/2010					X	Investigation Derived Waste - Soil
DU-IDW_WA_01	NA	6/10/2010			X	X		Investigation Derived Waste - Water

Notes:
1. Samples depths are measured in feet below ground surface.
2. Laboratory measurements were performed by TestAmerica, Inc. of Nashville, Tennessee.
3. Sample locations are shown on Figures 2-1 and 3-1.
4. MS/MSD - matrix spike/matrix spike duplicate.

Table 3-1
Summary of Arsenic and Lead Concentrations in Soil Samples
Removal Site Evaluation Report
VCC - Durham, North Carolina

Location ID:	Depth (ft bgs)	Date Collected	Arsenic (mg/kg)	Lead (mg/kg)	pH (SU)
USEPA Screening Level			27	895	- -
DU-SB-1	0 - 0.5	6/7/2010	7.38	30.0 J	6.7 J
	0.5 - 2	6/7/2010	4.49	10.1 J	5.5 J
	2 - 4	6/7/2010	7.38	11.3 J	4.6 J
DU-SB-2	0 - 0.5	6/7/2010	2.44	58.0 J	5.0
	0.5 - 2	6/7/2010	13.4	232 J	6.9
	2 - 4	6/7/2010	3.25	120 J	6.7
DU-SB-3	0 - 0.5	6/7/2010	2.10	15.9 J	5.4
	0.5 - 2	6/7/2010	5.65	129 J	5.2
	2 - 4	6/7/2010	3.45	197 J	4.5
DU-SB-4	0 - 0.5	6/7/2010	4.69	36.5	5.6
	0.5 - 2	6/7/2010	6.09	36.8	6.0
	2 - 4	6/7/2010	2.14	19.9	5.4
DU-SB-5	0 - 0.5	6/7/2010	7.56	27.2	5.8
	0.5 - 2	6/7/2010	3.90	94.0	5.8
	2 - 4	6/7/2010	1.83	16.3	4.8
DU-SB-6	0 - 0.5	6/7/2010	3.05	37.2	6.8
	0.5 - 2	6/7/2010	3.65	49.6	4.6
	2 - 4	6/7/2010	2.26	16.4	4.1
DU-SB-7	0 - 0.5	6/8/2010	9.96	618	5.3 J
	0.5 - 2	6/8/2010	9.61	638	5.3 J
	2 - 4	6/8/2010	21.2	884	5.3 J
	4 - 6	6/8/2010	2.19	22.3	5.6 J
DU-SB-8	0 - 0.5	6/9/2010	4.35 [3.93]	375 [370]	7.1 [6.5]
	0.5 - 2	6/9/2010	28.9	922	7.0
	2 - 4	6/9/2010	2.63	61.6	5.2
DU-SB-9	0 - 0.5	6/9/2010	2.92	92.3	6.9
	0.5 - 2	6/9/2010	2.41	20.9	6.9
	2 - 4	6/9/2010	5.25	25.8	6.9
DU-SB-10	0 - 0.5	6/8/2010	2.00	15.0	6.5
	0.5 - 2	6/8/2010	2.35	16.0	7.4
	2 - 4	6/8/2010	3.12	15.0	7.6
DU-SB-11	0 - 0.5	6/8/2010	2.47	16.9	6.9
	0.5 - 2	6/8/2010	1.81	13.0	7.7
	2 - 2.5	6/8/2010	1.52	12.3	7.7
DU-SB-12	0 - 0.5	6/9/2010	5.14	15.8	5.9
	0.5 - 2	6/9/2010	5.75	12.2	6.6
	2 - 4	6/9/2010	4.58	33.3	6.8
DU-SB-13	0 - 0.5	6/9/2010	3.42	40.6	6.1
	0.5 - 2	6/9/2010	3.17	471	5.4
	2 - 4	6/9/2010	3.77	190	4.7
	4 - 6	6/9/2010	2.88	130	4.8 J
	6 - 8	6/9/2010	4.13	296	4.9 J
	8 - 10	6/10/2010	4.16	66.3	6.8

Table 3-1
Summary of Arsenic and Lead Concentrations in Soil Samples
Removal Site Evaluation Report
VCC - Durham, North Carolina

Location ID:	Depth (ft bgs)	Date Collected	Arsenic (mg/kg)	Lead (mg/kg)	pH (SU)
USEPA Screening Level			27	895	- -
DU-SB-14	0 - 0.5	6/9/2010	4.64	60.6 J	6.1
	0.5 - 2	6/9/2010	2.89	10.4 J	6.8
	2 - 4	6/9/2010	16.9 [16.8]	606 J [178 J]	6.7 [4.9]
	4 - 6	6/10/2010	5.81	93.3	6.8
DU-SB-15	0 - 0.5	6/9/2010	4.40	376 J	6.6
	0.5 - 2	6/9/2010	4.91	1,240 J	6.1
	2 - 4	6/9/2010	6.50	5,560 J	6.3
	4 - 6	6/10/2010	19.8 [24.9]	989 [1,030]	6.1 [5.6]
	6 - 8	6/10/2010	4.38	22.6	5.7
DU-SB-16	0 - 0.5	6/9/2010	4.25	88.3	5.1
	0.5 - 2	6/9/2010	5.66	23.3	4.9
	2 - 4	6/9/2010	4.41	24.4	5.4
DU-SB-17	0 - 0.5	6/7/2010	3.24	55.1	5.0
	0.5 - 2	6/7/2010	4.56	123	5.1
	2 - 4	6/7/2010	2.19 [2.46]	12.9 [8.46]	4.6 [4.3]
DU-SB-18	0 - 0.5	6/7/2010	1.85	78.1 J	5.3
	0.5 - 2	6/7/2010	4.82 [4.27]	141 J [113 J]	4.6 [4.9]
	2 - 4	6/7/2010	5.65	193 J	4.6
DU-SB-19	0 - 0.5	6/7/2010	10.3	132 J	5.0 J
	0.5 - 2	6/7/2010	5.58	250 J	3.9 J
	2 - 4	6/7/2010	5.15	14.8 J	3.9 J
DU-SB-20	0 - 0.5	6/7/2010	0.835 J	10.6	5.3
	0.5 - 2	6/7/2010	14.0	424	5.4
	2 - 4	6/7/2010	52.6	1,140	6.5
	4 - 6	6/8/2010	6.10	10.3	4.3 J
DU-SB-21	0 - 0.5	6/9/2010	3.73	446	5.5
	0.5 - 2	6/9/2010	7.09	278	5.8
	2 - 4	6/9/2010	32.7	402	5.5
	4 - 6	6/10/2010	7.66	41.9 J	3.9
DU-SB-22	0 - 0.5	6/9/2010	3.25	60.5	6.5
	0.5 - 2	6/9/2010	14.4	6,070	5.0
	2 - 4	6/9/2010	4.47	612	4.2
	4 - 6	6/10/2010	10.0	1,540	3.5
	6 - 8	6/10/2010	28.8	80.6	3.2
	8 - 10	6/10/2010	3.67	10.6 J	3.7
DU-SB-23	0 - 0.5	6/9/2010	3.76	27.0	6.8
	0.5 - 2	6/9/2010	3.64	17.6	6.9
	2 - 4	6/9/2010	5.77	16.0	6.1
	4 - 6	6/9/2010	7.24	19.7	4.5 J
	6 - 8	6/9/2010	5.05	166	5.7 J
DU-SB-24	0 - 0.5	6/9/2010	3.03	14.5	6.5
	0.5 - 2	6/9/2010	3.64	18.2	6.8
	2 - 4	6/9/2010	3.92	16.1	6.9
	4 - 6	6/10/2010	7.37	16.0	7.5
	6 - 8	6/10/2010	2.88	36.6	7.4

Table 3-1
Summary of Arsenic and Lead Concentrations in Soil Samples
Removal Site Evaluation Report
VCC - Durham, North Carolina

Location ID:	Depth (ft bgs)	Date Collected	Arsenic (mg/kg)	Lead (mg/kg)	pH (SU)
USEPA Screening Level			27	895	- -
DU-SB-25	0 - 0.5	6/9/2010	2.83	10.8 J	7.1
	0.5 - 2	6/9/2010	3.04	13.7 J	7.6
	2 - 4	6/9/2010	4.52	13.1 J	7.6
DU-SB-26	0 - 0.5	6/9/2010	4.24	12.6 J	7.0
	0.5 - 2	6/9/2010	3.02	55.4 J	7.1
	2 - 4	6/9/2010	4.62	13.8 J	6.1
	4 - 6	6/9/2010	2.30	18.9	5.6 J
	6 - 8	6/9/2010	1.01 J	12.7	5.8 J
DU-SB-27	0 - 0.5	6/9/2010	91.0	1,340 J	4.1
	0.5 - 2	6/9/2010	49.7	596	6.6
	2 - 4	6/9/2010	17.7	845	6.1
	4 - 6	6/10/2010	130	41.0	3.5
	6 - 8	6/10/2010	64.6	15.1	3.4
	8 - 9.5	6/10/2010	11.0	4.73 J	3.5
DU-SB-28	0 - 0.5	6/9/2010	339	13.0 J	5.5
	0.5 - 2	6/9/2010	131	18.3 J	4.4
	2 - 4	6/9/2010	3.50	8.80 J	4.1
DU-SB-29	0 - 0.5	6/7/2010	1.20 U	32.0	5.1
	0.5 - 2	6/7/2010	1.40 U	28.7 J	4.3
	2 - 4	6/7/2010	1.41 U	23.9 J	3.9
DU-SB-30	0 - 0.5	6/7/2010	8.24	51.6 J	5.3 J
	0.5 - 2	6/7/2010	8.52	60.2 J	5.0 J
	2 - 4	6/7/2010	5.30	179 J	6.5 J
DU-SB-31	0 - 0.5	6/7/2010	2.09	28.5 J	4.1
	0.5 - 2	6/7/2010	0.938 J	25.3 J	3.6
	2 - 4	6/7/2010	3.50	24.9 J	3.4
DU-SB-32	0 - 0.5	6/7/2010	1.29	15.9 J	6.6
	0.5 - 2	6/7/2010	2.14	55.7 J	4.4
	2 - 4	6/7/2010	1.87	23.6 J	4.3
DU-SB-33	0 - 0.5	6/7/2010	4.48	63.1 J	6.5 J
	0.5 - 2	6/7/2010	3.07	1,950 J	6.4 J
	2 - 2.5	6/7/2010	6.37	4,110 J	6.6 J
DU-SB-34	0 - 0.5	6/8/2010	1.14 U	9.71	3.4 J
	0.5 - 2	6/8/2010	1.23 U	8.14	3.3 J
	2 - 4	6/8/2010	1.54	11.3	3.3 J
DU-SB-35	0 - 0.5	6/8/2010	4.13	91.4	6.6
	0.5 - 2	6/8/2010	6.80	461	5.5
	2 - 4	6/8/2010	5.86 [8.28]	1,100 [1,520]	4 [3.8]
	4 - 6	6/9/2010	1.95	94.0	4.4 J
DU-SB-36	0 - 0.5	6/8/2010	3.21	18.1	6.4
	0.5 - 2	6/8/2010	4.52	14.7	8.0
	2 - 4	6/8/2010	1.58	12.8	7.6
DU-SB-37	0 - 0.5	6/8/2010	2.74	13.8	6.9
	0.5 - 2	6/8/2010	2.65	31.6	7.5
	2 - 4	6/8/2010	2.59	6.89	7.0

Table 3-1
Summary of Arsenic and Lead Concentrations in Soil Samples
Removal Site Evaluation Report
VCC - Durham, North Carolina

Location ID:	Depth (ft bgs)	Date Collected	Arsenic (mg/kg)	Lead (mg/kg)	pH (SU)
USEPA Screening Level			27	895	- -
DU-SB-38	0 - 0.5	6/8/2010	1.76	9.47	5.2 J
	0.5 - 2	6/8/2010	1.91	9.92	4.6 J
	2 - 4	6/8/2010	1.24	12.4	3.9 J
DU-SB-39	0 - 0.5	6/8/2010	0.790 J	15.0	4.5
	0.5 - 2	6/8/2010	1.75	9.64	4.0
	2 - 4	6/8/2010	1.88	9.88	4.5
DU-SB-40	0 - 0.5	6/8/2010	3.53	85.6	5.5
	0.5 - 2	6/8/2010	5.53	123	5.9
	2 - 4	6/8/2010	3.37	73.5	6.3
DU-SB-41	0 - 0.5	6/7/2010	2.41 [1.21]	65.7 J [46.4 J]	5.8 J [6.1 J]
	0.5 - 2	6/7/2010	11.8	75.3 J	5.9 J
DU-SB-42	0 - 0.5	6/7/2010	4.23	19.6 J	3.6 J
	0.5 - 2	6/7/2010	5.68	95.3 J	3.3 J
	2 - 4	6/7/2010	6.00	42.3 J	3.3 J
DU-SB-43	0 - 0.5	6/8/2010	2.04	7,100	4.6 J
	0.5 - 2	6/8/2010	2.10	14.2	4.2 J
	2 - 4	6/8/2010	1.39	6.87	4.5
DU-SB-44	0 - 0.5	6/10/2010	5.27	125	7.0
	0.5 - 2	6/10/2010	1.71	12.9	5.3
	2 - 4	6/10/2010	1.53	13.6	4.6
DU-SB-45	0 - 0.5	6/9/2010	2.01	34.0	4.2 J
	0.5 - 2	6/9/2010	2.32	18.6	4.0 J
	2 - 4	6/9/2010	1.36	13.2	4.3 J
DU-SB-46	0 - 0.5	6/10/2010	2.71	11.5	4.3
	0.5 - 2	6/10/2010	4.14	12.5	4.1
	2 - 4	6/10/2010	2.59	11.7	4.3
DU-SB-47	0 - 0.5	6/9/2010	2.21	14.2	4.8 J
	0.5 - 2	6/9/2010	2.34	23.8	4.7 J
	2 - 4	6/9/2010	1.59	10.5	4.5 J
DU-SB-48	0 - 0.5	6/9/2010	2.60	27.0	4.3
	0.5 - 2	6/9/2010	2.68	13.7	4.2
	2 - 4	6/9/2010	2.16 [1.52]	20.7 [13.5]	4.6 J [4.6 J]
DU-SB-49	0 - 0.5	6/8/2010	5.14	284	4.7 J
	0.5 - 2	6/8/2010	2.79	56.2	4.9 J
	2 - 4	6/8/2010	2.94 [3.42]	20.7 [24.3]	6.0 J [5.0 J]
DU-SB-50	0 - 0.5	6/9/2010	12.9	16.9	5.1 J
	0.5 - 2	6/9/2010	5.35	13.0	4.7 J
	2 - 4	6/9/2010	8.11	25.8	4.8 J
DU-SB-51	0 - 0.5	6/9/2010	11.4	47.7	3.3
	0.5 - 2	6/9/2010	3.75	11.7	3.3
	2 - 4	6/9/2010	20.7	5.66	3.5
DU-SB-52	0 - 0.5	6/9/2010	15.6	298	3.6
	0.5 - 2	6/9/2010	2.95	17.3	3.7
	2 - 4	6/9/2010	1.31	15.5	3.3

Table 3-1
Summary of Arsenic and Lead Concentrations in Soil Samples
Removal Site Evaluation Report
VCC - Durham, North Carolina

Notes:
mg/kg - milligrams per kilogram
ft bgs - feet below ground surface
SU - standard units
J - estimated value
U - not detected
Duplicate sample concentrations are in brackets
USEPA screening levels of 27 mg/kg for arsenic and 895 mg/kg for lead are based on soil screening values for Industrial properties.
Exceeds USEPA screening levels.

Table 3-2
Summary of Arsenic and Lead Concentrations in Sediment Samples
Removal Site Evaluation Report
VCC - Durham, North Carolina

Analyte	Screening Level	Units	Concentration in Sample: DU-SD-1 0 - 0.5 ft bgs 6/8/2010
Inorganics			
Arsenic	27	mg/kg	40.9 J [18.7 J]
Lead	895	mg/kg	89.5 J [55.9 J]
Miscellaneous			
pH	- -	SU	5 [6.3]

Notes:
mg/kg - milligrams per kilogram
ft bgs - feet below ground surface
J - estimated value
SU - standard units
Duplicate sample concentrations are in brackets
USEPA screening levels of 27 mg/kg for arsenic and 895 mg/kg for lead are based on soil screening values for Industrial properties.
Exceeds USEPA screening levels.

Table 3-3
Summary of Solid Investigation-Derived Waste Sample Results
Removal Site Evaluation Report
VCC - Durham, North Carolina

Analyte	Regulatory Standard	Units	Concentration in Sample: DU-IDW_SO_01 6/10/2010
TCLP Metals			
Arsenic	5	mg/L	0.1 U
Barium	100	mg/L	0.198
Cadmium	1	mg/L	0.01 U
Chromium	5	mg/L	0.05 U
Lead	5	mg/L	0.03 J
Mercury	0.2	mg/L	0.01 U
Selenium	1	mg/L	0.1 U
Silver	5	mg/L	0.05 U

Notes:
mg/L - milligrams per liter
U - not detected
J - estimated value
TCLP - toxicity characteristic leaching procedure

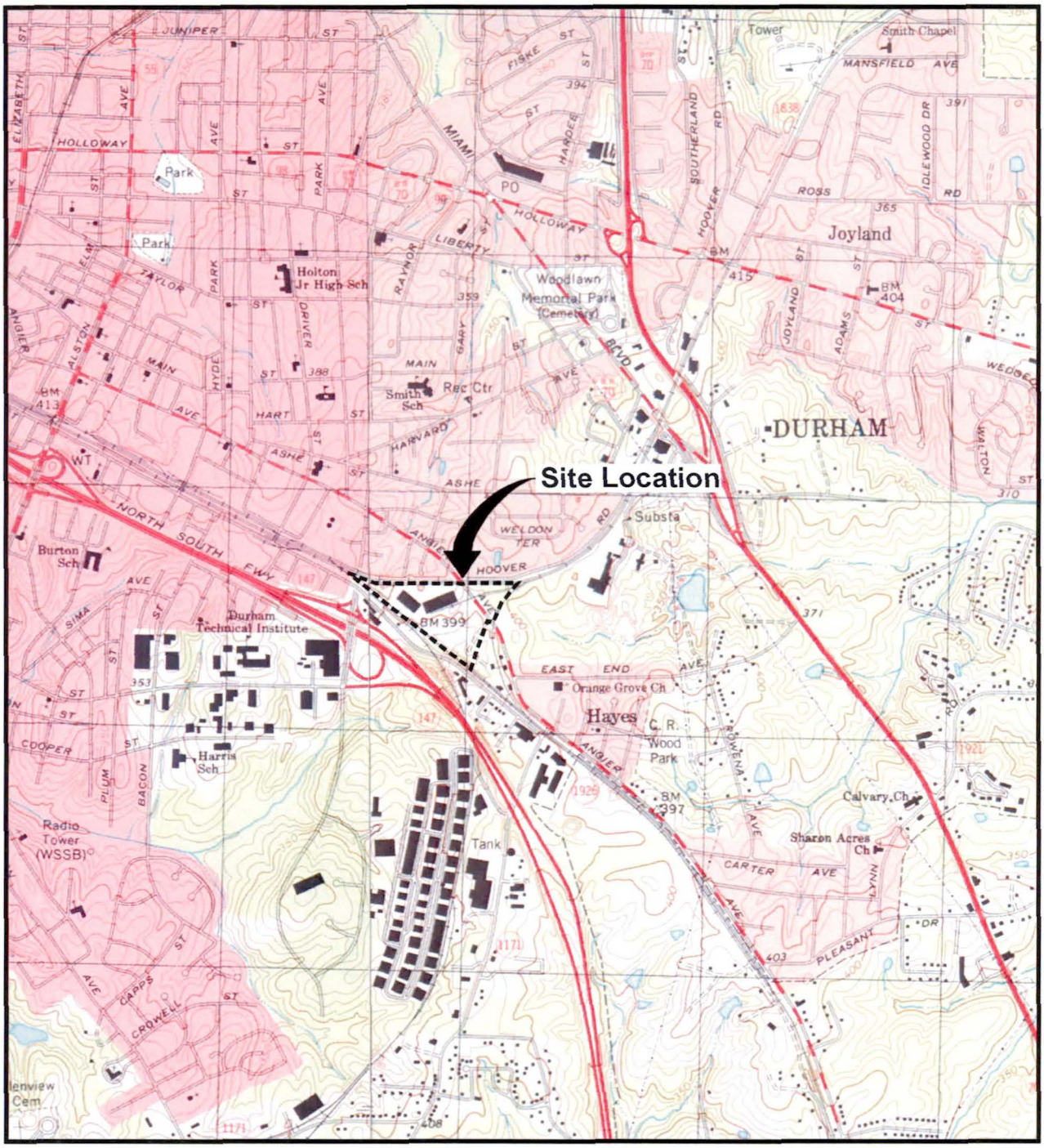
Table 3-4
Summary of Liquid Investigation-Derived Waste Sample Results
Removal Site Evaluation Report
VCC-Durham, North Carolina

Analyte	Regulatory Standard	Units	Concentration in Sample: DU-IDW_WA_01 6/10/2010
TAL Metals			
Aluminum	--	mg/L	15.6
Antimony	--	mg/L	0.01 U
Arsenic	5	mg/L	0.0275
Barium	100	mg/L	0.0637
Beryllium	--	mg/L	0.002 J
Cadmium	1	mg/L	0.0017
Calcium	--	mg/L	58.2
Chromium	5	mg/L	0.0706
Cobalt	--	mg/L	0.0212
Copper	--	mg/L	0.221
Iron	--	mg/L	26.7
Lead	5	mg/L	0.692
Magnesium	--	mg/L	3.78
Manganese	--	mg/L	0.89
Mercury	0.2	mg/L	0.00122
Nickel	--	mg/L	0.0942
Potassium	--	mg/L	4.6
Selenium	1	mg/L	0.01 U
Silver	5	mg/L	0.005 U
Sodium	--	mg/L	670
Thallium	--	mg/L	0.01 U
Vanadium	--	mg/L	0.0455
Zinc	--	mg/L	1.16
Miscellaneous			
pH	≤ 2; ≥ 12.5	SU	6.8 J

Notes:
mg/L - milligrams per liter
U - not detected
J - estimated value
TAL - target analyte list
SU - standard units

ARCADIS

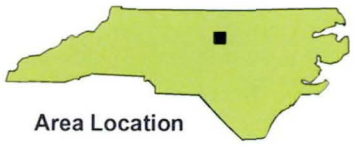
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., SOUTHWEST, SOUTHEAST DURHAM, N.C.,1993/2002.

2000' 0 2000'

Approximate Scale: 1" = 2000'



Area Location

EXXONMOBIL
VCC - DURHAM, NORTH CAROLINA

REMOVAL SITE EVALUATION REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1-1

07/01/2010 CARY, NC-ENV/CAD-LELLIS
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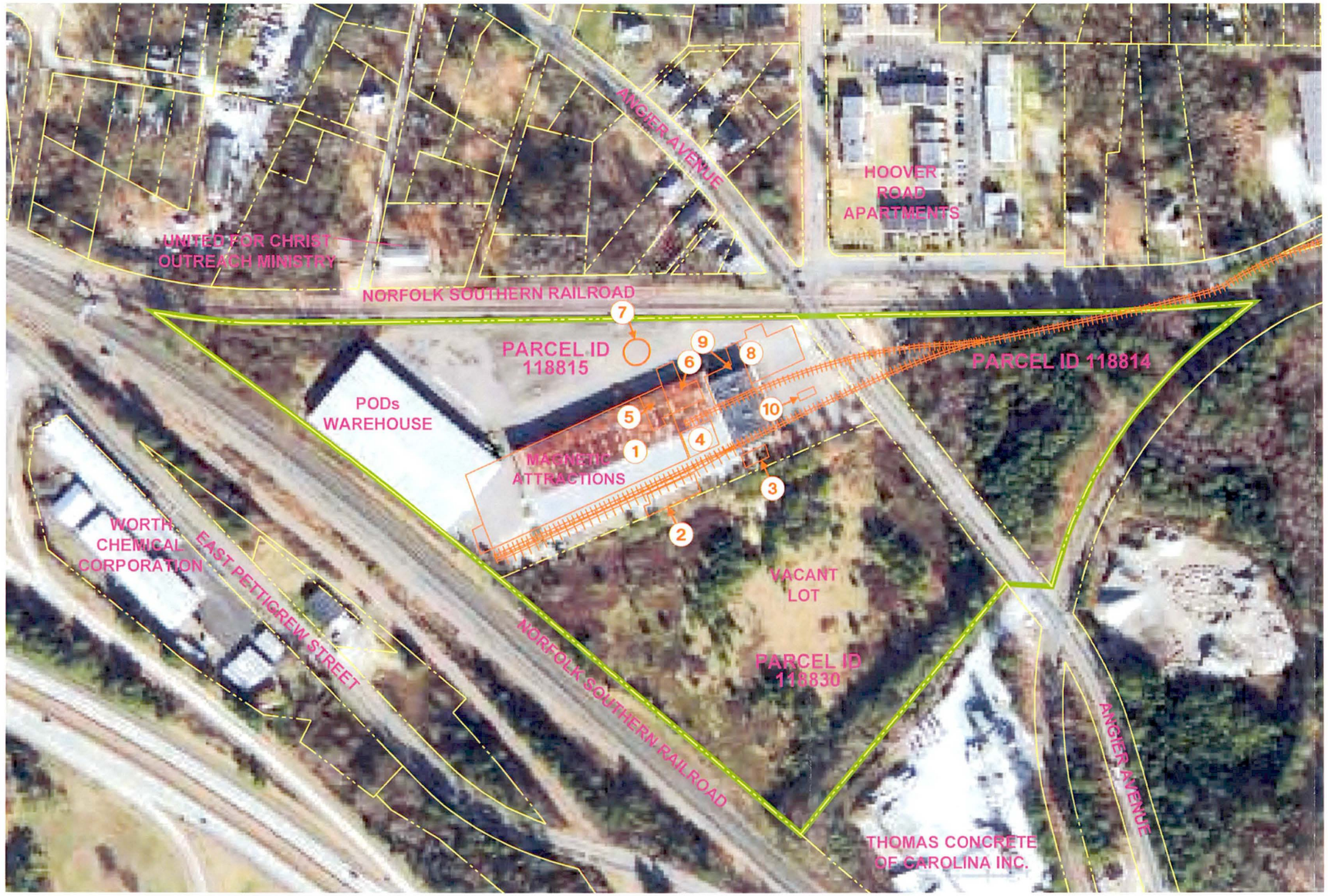

HISTORICAL BUILDING KEY:

1. FERTILIZER BUILDING
2. BAG HOUSE
3. LOCKER HOUSE
4. NITRE MAGAZINE
5. MILL
6. MOTOR ROOM
7. 104,000 GALLON RESERVOIR
8. ACID CHAMBER
9. BURNER ROOM
10. OFFICE

NOTES:

1. HISTORICAL SITE FEATURES DIGITIZED FROM 1937 SANBORN MAP.
2. PARCEL BOUNDARIES PROVIDED BY DURHAM COUNTY GIS. THEY ARE CURRENT AS OF MAY 2010.
3. 2009 AERIAL PHOTOGRAPH OF DURHAM, NORTH CAROLINA PROVIDED BY DIGITAL GLOBE.
4. ALL LOCATIONS ARE APPROXIMATE.

0 200' 400'
GRAPHIC SCALE

LEGEND:

- APPROXIMATE BOUNDARY OF THE FORMER FACILITY
- APPROXIMATE LOCATION OF HISTORICAL FERTILIZER PLANT FEATURES
- CURRENT TAX PARCEL BOUNDARIES
- HISTORICAL SPUR OF NORFOLK SOUTHERN RAILROAD

EXXONMOBIL
VCC-DURHAM, NORTH CAROLINA
REMOVAL SITE EVALUATION REPORT

CURRENT AND HISTORICAL SITE FEATURES

ARCADIS

FIGURE
1-2

CITY:CARY DIV/GROUP:41 DB:LELLIS (A.Schilling) LD:(Opt) PIC:(Opt) PM:(Reed) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Cary\ACT\B0085794\0011\02008\NONE\85570B01R.dwg LAYOUT: 1-2 SAVED: 8/20/2010 11:15 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/3/2010 9:32 AM BY: ELLIS, LEKOREY
XREFS: 85794X01 IMAGES: DigitalGlobe2009.jpg PROJECTNAME: ----

HISTORICAL BUILDING KEY:

1. FERTILIZER BUILDING
2. BAG HOUSE
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6. MOTOR ROOM
7. 104,000 GALLON RESERVOIR
8. ACID CHAMBER
9. BURNER ROOM
10. OFFICE

NOTES:

1. HISTORICAL SITE FEATURES DIGITIZED FROM 1937 SANBORN MAP.
2. PARCEL BOUNDARIES PROVIDED BY DURHAM COUNTY GIS. THEY ARE CURRENT AS OF MAY 2010.
3. 2009 AERIAL PHOTOGRAPH OF DURHAM, NORTH CAROLINA PROVIDED BY DIGITAL GLOBE.
4. SOIL BORING AND SEDIMENT LOCATIONS WERE IDENTIFIED USING CONVENTIONAL AND/OR GPS-BASED SURVEYING METHODS. DATA WAS PROVIDED BY TAYLOR, WISEMAN, & TAYLOR OF CARY, NC IN JUNE 2010.
5. SOIL BORINGS/SEDIMENT LOCATIONS BEGIN WITH THE PREFIX "DU-".

0 200' 400'
GRAPHIC SCALE

LEGEND:

- APPROXIMATE BOUNDARY OF THE FORMER FACILITY
- APPROXIMATE LOCATION OF HISTORICAL FERTILIZER PLANT FEATURES
- CURRENT TAX PARCEL BOUNDARIES
- EXISTING RAILROAD TRACKS
- SOIL BORING LOCATION
- SEDIMENT SAMPLE LOCATION
- DRAINAGE DITCH (NEAR SD-1)

EXXONMOBIL
VCC-DURHAM, NORTH CAROLINA
REMOVAL SITE EVALUATION REPORT

SOIL AND SEDIMENT SAMPLE LOCATION MAP

ARCADIS

FIGURE
2-1

CITY:CARY DIV/GROUP:41 DB:LELLIS (A.Schilling) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Cary\ACT\B0085794\0011\02008\NONE\85794B01.dwg LAYOUT: 2-1 SAVED: 8/20/2010 11:17 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/3/2010 9:33 AM BY: ELLIS, LEKOREY
XREFS: 85794X01 IMAGES: DigitalGlobe2009.jpg PROJECTNAME: ----

NOTES:

1. PARCEL BOUNDARIES PROVIDED BY DURHAM COUNTY GIS. THEY ARE CURRENT AS OF MAY 2010.
2. 2009 AERIAL PHOTOGRAPH OF DURHAM, NORTH CAROLINA PROVIDED BY DIGITAL GLOBE.
4. SOIL BORING AND SEDIMENT LOCATIONS WERE IDENTIFIED USING CONVENTIONAL AND/OR GPS–BASED SURVEYING METHODS. DATA WAS PROVIDED BY TAYLOR, WISEMAN, & TAYLOR OF CARY, NC IN JUNE 2010.
5. SOIL BORINGS/SEDIMENT LOCATIONS BEGIN WITH THE PREFIX "DU–".
6. mg/kg – MILLIGRAMS PER KILOGRAM.
7. USEPA – UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

0 200' 400'
GRAPHIC SCALE

LEGEND:

- APPROXIMATE BOUNDARY OF THE FORMER FACILITY
- APPROXIMATE LOCATION OF HISTORICAL FERTILIZER PLANT FEATURES
- CURRENT TAX PARCEL BOUNDARIES
- EXISTING RAILROAD TRACKS
- DRAINAGE DITCH (NEAR SD–1)
- SEDIMENT SAMPLE LOCATION WITH As AND/OR Pb ABOVE USEPA SCREENING LEVELS
- SOIL BORING LOCATION BELOW SCREENING LEVELS
- SOIL BORING LOCATION WITH As AND/OR Pb ABOVE USEPA SCREENING LEVELS

USEPA SCREENING LEVELS	
ARSENIC (As)	27 mg/kg
LEAD (Pb)	895 mg/kg

EXXONMOBIL
VCC-DURHAM, NORTH CAROLINA
REMOVAL SITE EVALUATION REPORT

SAMPLE ANALYTICAL RESULTS

ARCADIS

FIGURE
3-1

CITY:CARY DIV/GROUP:41 DB:LELLIS (A.Schilling) LD:(Opt) PIC:(Opt) PM:(Reed) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF* PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/3/2010 10:15 AM BY: ELLIS, LEKOREY
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XREFS: 85794X01 IMAGES: DigitalGlobe2009.jpg PROJECTNAME: ----

ARCADIS

Appendix A

Visual Soil Classifications

Appendix A
Visual Soil Classifications
Removal Site Evaluation Report
VCC Durham, North Carolina

Soil Boring Identification	Depth Interval (ft bgs)	Visual USCS Classification	Soil Lithology/Characteristics
DU-SB-01	0_0.5	ML	Sandy SILT, brown, fine, soft, some Rootlets, moist.
DU-SB-01	0.5_2	CL	Silty CLAY, orange brown, stiff, moist.
DU-SB-01	2_4	CL	Silty CLAY, orange brown, stiff, moist.
DU-SB-02	0_0.5	CL	Silty CLAY, brown, trace fine Gravel and Rootlets, cohesive, moist.
DU-SB-02	0.5_2	CL	Silty CLAY, dark brown, some Brick fragments, trace fine Gravel, cohesive, stiff, moist.
DU-SB-02	2_4	CL	Silty CLAY, dark brown, some Wood pieces throughout, cohesive, moist.
DU-SB-03	0_0.5	SP	SAND, brown, firm, some fine Gravel, loose, moist.
DU-SB-03	0.5_2	ML	Clayey SILT, brown, some fine Gravel, cohesive, moist.
DU-SB-03	2_4	ML	Sandy SILT, brown, trace fine Gravel, moist.
DU-SB-04	0_0.5	ML	Sandy SILT, brown, fine, some Rootlets, dry.
DU-SB-04	0.5_2	ML	Clayey SILT, brown, slightly cohesive, some fine Gravel, dry.
DU-SB-04	2_4	ML	Sandy SILT, light brown, very fine, moist.
DU-SB-05	0_0.5	CL	Silty CLAY, brown, cohesive, trace fine Gravel, moist.
DU-SB-05	0.5_2	CL	Silty CLAY, reddish brown, cohesive, moist.
DU-SB-05	2_4	ML	Sandy SILT, light brown, very fine, moist.
DU-SB-06	0_0.5	ML	Sandy SILT, brown, loose, trace fine Gravel, dry.
DU-SB-06	0.5_2	ML	Sandy SILT, light brown, fine, dry.
DU-SB-06	2_4	ML	Sandy SILT, light brown, very fine, loose, dry.
DU-SB-07	0_0.5	ML	Clayey SILT, brown, loose, some Rootlets and fine Sand, moist.
DU-SB-07	0.5_2	ML	Clayey SILT, brown, some Rootlets, trace fine Gravel, moist.
DU-SB-07	2_4	ML	Sandy SILT, dark brown, loose, some fine Gravel and small Brick fragments, moist.
DU-SB-07	4_6	CL	Silty CLAY, yellowish brown, stiff, cohesive, moist.
DU-SB-08	0_0.5	CL	Silty CLAY, dark brown, soft, some Wood and Brick fragments, moist.
DU-SB-08	0.5_2	SC	Sandy CLAY, brown, soft, some fine Gravel, moist.
DU-SB-08	2_4	SM	Silty SAND, grayish brown, loose, wet at 4.0'.
DU-SB-09	0_0.5	ML	Clayey SILT, brown, some fine Gravel and Rootlets, moist.
DU-SB-09	0.5_2	CL	Clayey SILT, brown, some fine Gravel and Rootlets, moist.
DU-SB-09	2_4	ML/CL	Clayey SILT with Clay, brown, soft, moist.
DU-SB-10	0_0.5	ML	Sandy SILT, brown, loose, with fine to medium Gravel, moist.
DU-SB-10	0.5_2	ML	Sandy SILT, dark brown, loose, moist.
DU-SB-10	2_4	ML	Sandy SILT, dark brown, loose, moist.

Appendix A
Visual Soil Classifications
Removal Site Evaluation Report
VCC Durham, North Carolina

Soil Boring Identification	Depth Interval (ft bgs)	Visual USCS Classification	Soil Lithology/Characteristics
DU-SB-11	0_0.5	ML	Sandy SILT, brown, loose, moist.
DU-SB-11	0.5_2	ML	Sandy SILT, brown, loose, with fine to medium Gravel, moist.
DU-SB-11	2_2.5	ML	Sandy SILT, brown, loose, with large piece of Siltstone, moist. Refusal encountered @ 2.5'.
DU-SB-12	0_0.5	ML	Clayey SILT, brown, loose, with fine Gravel, dry.
DU-SB-12	0.5_2	ML	Sandy SILT, brown to dark brown, loose, with Rootlets, dry to moist.
DU-SB-12	2_4	ML	Clayey SILT, brown, trace fine Gravel, moist.
DU-SB-13	0_0.5	ML	Clayey SILT, brown, soft, trace fine Sand, moist.
DU-SB-13	0.5_2	ML	Clayey SILT, brown, soft, with fine to medium Gravel, trace fine Sand, moist.
DU-SB-13	2_4	ML/CL	Clayey SILT, brown to light brown, some fine Gravel, dry.
DU-SB-13	4_6	CL	Silty CLAY, brown, medium stiff, moist.
DU-SB-13	6_8	CL	Silty CLAY, brown, medium stiff, moist.
DU-SB-13	8_10	ML	SILT, brown, loose, some fine to medium Sand, wet.
DU-SB-14	0_0.5	CL	Silty CLAY, brown, medium stiff, with Rootlets, moist.
DU-SB-14	0.5_2	CL	Silty CLAY, brown, medium stiff, with Rootlets, trace fine to medium Sand, moist.
DU-SB-14	2_4	ML	Sandy SILT, dark brown, with Brick fragments and Wood throughout, moist.
DU-SB-14	4_6	ML	Sandy SILT, brown to reddish brown, soft, loose, moist.
DU-SB-15	0_0.5	ML	Clayey SILT, brown, loose, trace fine Gravel, moist.
DU-SB-15	0.5_2	ML	Clayey SILT, brown, loose, trace fine Gravel, moist.
DU-SB-15	2_4	SM	Silty SAND, dark brown to black, loose, slightly cohesive, some pieces of black Gravel, moist.
DU-SB-15	4_6	ML	Sandy SILT, black, with pieces of Wood and fine Gravel, moist.
DU-SB-15	6_8	CL	Silty CLAY, light brown, very stiff, moist.
DU-SB-16	0_0.5	ML	Clayey SILT, reddish brown, dry.
DU-SB-16	0.5_2	CL	Silty CLAY, brown, soft, moist.
DU-SB-16	2_4	CL	Silty CLAY, brown and black, soft, moist.
DU-SB-17	0_0.5	ML	Sandy SILT, brown, fine, with Rootlets, dry.
DU-SB-17	0.5_2	ML	Sandy SILT, brown, fine, slightly cohesive, moist.
DU-SB-17	2_4	CL	Silty CLAY, brown, cohesive, moist.
DU-SB-18	0_0.5	ML	Sandy SILT, brown, loose, trace fine Gravel, dry.
DU-SB-18	0.5_2	ML	Clayey SILT, brown, cohesive, trace fine Gravel, moist.
DU-SB-18	2_4	ML	Sandy SILT, brown, loose, trace fine Gravel, moist.

Appendix A
Visual Soil Classifications
Removal Site Evaluation Report
VCC Durham, North Carolina

Soil Boring Identification	Depth Interval (ft bgs)	Visual USCS Classification	Soil Lithology/Characteristics
DU-SB-19	0_0.5	CL	Silty CLAY, brown, stiff, some fine Gravel, moist.
DU-SB-19	0.5_2	CL	Silty CLAY, brown, stiff, some fine Gravel, moist.
DU-SB-19	2_4	ML	Clayey SILT, orange brown to brown, trace fine Gravel, moist.
DU-SB-20	0_0.5	ML	Sandy SILT, brown, trace fine Gravel, dry.
DU-SB-20	0.5_2	SC	Sandy CLAY, dark brown, some Wood and Brick fragments, moist.
DU-SB-20	2_4	SM	Silty SAND, dark brown, loose, moist.
DU-SB-20	4_6	CL	Silty CLAY, brown, very stiff, some fine Sand, moist.
DU-SB-21	0_0.5	ML	Sandy SILT, brown, some fine Gravel and Rootlets, moist.
DU-SB-21	0.5_2	ML	Clayey SILT, brown, slightly cohesive, with fine Gravel, moist.
DU-SB-21	2_4	ML	Sandy SILT, brown, loose, some stiff Clay, moist.
DU-SB-21	4_6	CL	Silty CLAY, brown to orange brown, stiff, cohesive, moist.
DU-SB-22	0_0.5	ML	Sandy SILT, brown, cohesive, some fine Gravel, moist.
DU-SB-22	0.5_2	ML	Sandy SILT, brown, loose, with fine to medium Gravel and Coal, moist.
DU-SB-22	2_4	ML	Sandy SILT, light brown, soft, wet @ 3.0'.
DU-SB-22	4_6	ML	Sandy SILT, brown, soft, with fine Gravel, wet.
DU-SB-22	6_8	ML	Sandy SILT, light brown, moist.
DU-SB-22	8_10	ML	Sandy SILT, reddish brown, very dense, moist. Refusal encountered @ 10'
DU-SB-23	0_0.5	ML	Clayey SILT, brown, soft, loose, with Rootlets, moist.
DU-SB-23	0.5_2	ML	Clayey SILT, brown, soft, loose, with Rootlets, moist.
DU-SB-23	2_4	ML	Clayey SILT, brown, soft, loose, with Rootlets and some fine Gravel, moist.
DU-SB-23	4_6	CL	CLAY, brown, moist.
DU-SB-23	6_8	CL	CLAY, brown, wet.
DU-SB-24	0_0.5	ML	Clayey SILT, brown, trace fine Gravel, dry.
DU-SB-24	0.5_2	ML	Clayey SILT, brown, trace fine Gravel, moist
DU-SB-24	2_4	ML/CL	Clayey SILT, brown, some Clay, medium stiff, moist.
DU-SB-24	4_6	ML	Clayey SILT, reddish brown, trace fine Gravel, moist.
DU-SB-24	6_8	CL	Silty CLAY, reddish brown, soft, moist.
DU-SB-25	0_0.5	ML	Sandy SILT, brown, loose, with Rootlets, moist.
DU-SB-25	0.5_2	ML	Sandy SILT, brown, loose, with Rootlets, trace fine Gravel, moist.
DU-SB-25	2_4	CL	Silty CLAY, brown to reddish brown, cohesive, medium stiff, moist.

Appendix A
Visual Soil Classifications
Removal Site Evaluation Report
VCC Durham, North Carolina

Soil Boring Identification	Depth Interval (ft bgs)	Visual USCS Classification	Soil Lithology/Characteristics
DU-SB-26	0_0.5	CL	Silty CLAY, brown, medium stiff, cohesive, moist.
DU-SB-26	0.5_2	SM	Silty SAND, brown to yellow brown, loose, trace fine Gravel, moist.
DU-SB-26	2_4	ML	Clayey SILT, brown, loose, slightly cohesive, some fine Sand, moist.
DU-SB-26	4_6	CL	Silty CLAY, brown, moist.
DU-SB-26	6_8	ML	SILT, brown, mottled, dense, dry.
DU-SB-27	0_0.5	ML	Sandy SILT, brown, with Rootlets, trace fine Gravel, moist.
DU-SB-27	0.5_2	SC	Sandy CLAY, dark brown and black, soft, with fine to medium Gravel, wet.
DU-SB-27	2_4	SC	Sandy CLAY, yellowish brown, soft, some small Brick fragments, wet.
DU-SB-27	4_6	ML	Sandy SILT, light brown to brown, soft, moist.
DU-SB-27	6_8	ML	Sandy SILT, reddish brown, moist.
DU-SB-27	8_9.5	ML	Sandy SILT, reddish brown, very stiff, dense, moist. Refusal encountered @ 9.5'
DU-SB-28	0_0.5	ML	Sandy SILT, brown to yellowish brown, loose, moist.
DU-SB-28	0.5_2	SM	Silty SAND, yellowish brown, loose, some Clay, moist.
DU-SB-28	2_4	CL	CLAY, yellowish brown, stiff, cohesive, moist.
DU-SB-29	0_0.5	CL	Silty CLAY, reddish brown, stiff, moist.
DU-SB-29	0.5_2	CL	Silty CLAY, reddish brown, stiff, moist.
DU-SB-29	2_4	ML	Clayey SILT, reddish brown, moist.
DU-SB-30	0_0.5	CL	Silty CLAY, brown, medium stiff, some fine Gravel, moist.
DU-SB-30	0.5_2	CL	Silty CLAY, brown, soft, trace fine Gravel, wet.
DU-SB-30	2_4	CL	Silty CLAY, brown, soft, trace fine Gravel, wet.
DU-SB-31	0_0.5	CL	Silty CLAY, reddish brown to brown, stiff, trace fine Gravel, moist.
DU-SB-31	0.5_2	ML	Clayey SILT, brown, loose, some fine Sand, moist.
DU-SB-31	2_4	ML	Clayey SILT, brown, loose, some fine Sand, moist.
DU-SB-32	0_0.5	SM	Silty SAND, brown, loose, some fine Gravel, moist.
DU-SB-32	0.5_2	ML	Sandy SILT, brown to reddish brown, trace fine Gravel, moist.
DU-SB-32	2_4	ML	Sandy SILT, brown to reddish brown, trace fine Gravel, moist.
DU-SB-33	0_0.5	ML	Sandy SILT, dark brown, fine to medium, some Mulch, Wood, and fine Gravel, moist.
DU-SB-33	0.5_2	ML	Clayey SILT, brown, some Brick fragments and fine Gravel, moist.
DU-SB-33	2_2.5	ML	Clayey SILT, orange brown, cohesive, with fine Gravel, moist. Refusal encountered @ 2.5'.
DU-SB-34	0_0.5	CL	Silty CLAY, orange brown and gray, very stiff, moist.
DU-SB-34	0.5_2	CL	Silty CLAY, orange brown and gray, very stiff, moist.
DU-SB-34	2_4	CL	Silty CLAY, gray, very stiff, moist.

Appendix A
Visual Soil Classifications
Removal Site Evaluation Report
VCC Durham, North Carolina

Soil Boring Identification	Depth Interval (ft bgs)	Visual USCS Classification	Soil Lithology/Characteristics
DU-SB-35	0_0.5	ML	Sandy SILT, brown, loose, with fine Gravel, moist.
DU-SB-35	0.5_2	ML	Sandy SILT, brown, loose, some plastic/general trash, moist.
DU-SB-35	2_4	CL	Silty CLAY, orange brown, medium stiff, moist to wet, wet @ 4.0'.
DU-SB-35	4_6	CL	Silty CLAY, gray, medium stiff, dry.
DU-SB-36	0_0.5	ML	Sandy SILT, brown, loose, with Rootlets and trace fine Gravel, moist.
DU-SB-36	0.5_2	ML	Sandy SILT, brown, loose, trace fine Gravel, moist.
DU-SB-36	2_4	SM	Silty SAND, yellowish brown, loose, moist.
DU-SB-37	0_0.5	ML	Sandy SILT, dark brown, loose, with Rootlets, moist.
DU-SB-37	0.5_2	ML	Sandy SILT, dark brown, loose, with Rootlets, trace fine Gravel, moist.
DU-SB-37	2_4	ML	Sandy SILT, dark brown, soft, some Clay, trace fine Gravel, moist.
DU-SB-38	0_0.5	ML	Clayey SILT, brown, loose, Rootlets throughout, moist.
DU-SB-38	0.5_2	SM	Silty SAND, brown, loose, moist.
DU-SB-38	2_4	SM	Silty SAND, brown, loose, some white fine to medium Sand, moist.
DU-SB-39	0_0.5	SM	Silty SAND, brown, loose, moist.
DU-SB-39	0.5_2	SC	Sandy CLAY, brown to yellowish brown, soft, moist.
DU-SB-39	2_4	CL	Silty CLAY, yellowish brown, medium stiff, moist.
DU-SB-40	0_0.5	SM	Silty SAND, brown, loose, with Rootlets, moist.
DU-SB-40	0.5_2	SM	Silty SAND, brown, loose, trace fine to medium Gravel, moist.
DU-SB-40	2_4	ML	Sandy SILT, brown, loose, some Clay and fine Gravel, moist.
DU-SB-41	0_0.5	ML	Sandy SILT, brown, loose, trace fine Gravel, moist.
DU-SB-41	0.5_2	ML	Clayey SILT, orange brown, slightly cohesive, trace fine Gravel, wet @ 2.0'.
DU-SB-42	0_0.5	ML	Clayey SILT, brown, soft, slightly cohesive, dry to moist.
DU-SB-42	0.5_2	CL	Silty CLAY, brown, trace coarse Sand and fine Gravel, moist.
DU-SB-42	2_4	CL	Silty CLAY, brown to reddish brown, trace coarse Sand, moist.
DU-SB-43	0_0.5	ML	Sandy SILT, brown, loose, with fine Gravel, moist.
DU-SB-43	0.5_2	ML	Sandy SILT, brown, very fine, loose, micaceous, moist.
DU-SB-43	2_4	ML	SILT, light brown, loose, micaceous, moist.
DU-SB-44	0_0.5	ML	Sandy SILT, brown, loose, trace fine Gravel, dry.
DU-SB-44	0.5_2	ML	SILT, brown to light brown, loose, dry.
DU-SB-44	2_4	ML	SILT, reddish brown, loose, dry.

Appendix A
Visual Soil Classifications
Removal Site Evaluation Report
VCC Durham, North Carolina

Soil Boring Identification	Depth Interval (ft bgs)	Visual USCS Classification	Soil Lithology/Characteristics
DU-SB-45	0_0.5	ML	Sandy SILT, brown, loose, with Rootlets, moist.
DU-SB-45	0.5_2	ML	Sandy SILT, brown, loose, with Rootlets, moist.
DU-SB-45	2_4	ML	Sandy SILT, brown, loose, with Rootlets, moist.
DU-SB-46	0_0.5	ML	SILT, light brown, loose, with Rootlets, dry.
DU-SB-46	0.5_2	CL	Silty CLAY, brown to reddish brown, medium stiff, moist.
DU-SB-46	2_4	ML	SILT, reddish brown, loose, dry.
DU-SB-47	0_0.5	SM	Silty SAND, brown, loose, with Rootlets, moist.
DU-SB-47	0.5_2	CL	Silty CLAY, brown, soft, moist.
DU-SB-47	2_4	ML	Clayey SILT, brown, soft, moist.
DU-SB-48	0_0.5	SC	Sandy CLAY, brown, soft, with Rootlets, moist.
DU-SB-48	0.5_2	SC	Clayey SAND, brown, loose, dry.
DU-SB-48	2_4	ML	Sandy SILT, brown, loose, dry.
DU-SB-49	0_0.5	ML	Clayey SILT, brown, cohesive, moist to wet.
DU-SB-49	0.5_2	ML	Clayey SILT, brown, loose, moist.
DU-SB-49	2_4	ML	Clayey SILT, brown, loose, moist.
DU-SB-50	0_0.5	ML	Clayey SILT, dark brown, soft, some Rootlets, dry.
DU-SB-50	0.5_2	CL	Silty CLAY, dark brown to brown, soft to medium stiff, some Rootlets, moist.
DU-SB-50	2_4	ML	Clayey SILT, brown, loose, dry.
DU-SB-51	0_0.5	ML	Sandy SILT, light brown, fine, loose, moist.
DU-SB-51	0.5_2	SC	Sandy CLAY, brown to yellowish brown, soft, trace fine gravel, moist.
DU-SB-51	2_4	SM	Silty SAND, light brown, loose, soft, wet.
DU-SB-52	0_0.5	CL	Silty CLAY, brown, soft, moist.
DU-SB-52	0.5_2	SC	Sandy CLAY, brown, soft, moist.
DU-SB-52	2_4	CL	Silty CLAY, brown to reddish brown, stiff, moist.

Notes:
ft bgs - feet below ground surface
USCS - Unified Soil Classification System

ARCADIS

Appendix B

Manifest for Investigative-Derived Waste

HAZ~MAT

ENVIRONMENTAL SERVICES
P.O. BOX 37392 • CHARLOTTE, N.C. 28237
(704) 332-5600
FAX (704) 375-7183

Manifest No. 47024

P.O. No.

Job No.

NON-HAZARDOUS SPECIAL WASTE

Section I. GENERATOR (Generator complete all of Section I)

GENERATOR LOCATION

NAME: EXXONMOBIL OIL CORP

ORIGINATING ADDRESS: 2700 ANGIER AVENUE

MAILING ADDRESS:

CITY: DURHAM STATE: NC ZIP:

PHONE NO.: 703-846-1005

CONTACT NAME: STEVEN SCHMIDT

WORK CONTRACTED BY
Bill To (If different from information at left)

NAME: ARCADIS

ADDRESS: 11000 REGENCY PKWY W. TOWER 205

CITY: CARY STATE: NC ZIP: 27518

PHONE NO.: ~~919-415-2308~~ 469-1952

CONTACT NAME: BRIAN WILSON

DES. OF WASTE: ~~NON-DOT REGULATED MATERIAL~~

No.	Type	Units	Quantity

Section II. INVOICE INFORMATION

DESCRIPTION	QUANTITY GALLONS	QUANTITY DRUMS	LINE TOTAL GALLONS	LINE TOTAL DRUMS
1. PETROLEUM CONTACT WATER PUMPED FROM TANKS, DRUMS OR AFVR				
2. OFF-SPEC LIGHT OIL, DIESEL OR GAS PUMPED FROM TANKS OR DRUMS				
3. SOLUBLE OILS OR COOLANTS PUMPED FROM STORAGE				
4. SEDIMENT OR SOLIDS VACUUMED FROM CONTAINMENT AREA				
5. 55-GALLON DRUM REMOVED - SOLID OR EMPTY ~~SOIL CUTTINGS/PPE~~		3		
6. 55-GALLON DRUM REMOVED - LIQUID DECON WATER		1		
7.				
8.				
9.				
10. ARRIVAL TIME: DEPARTURE TIME:				

GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if the waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions, I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR Part 268 and is no longer a hazardous waste as defined by 040 CFR Part 261.

Brian Wilson "on behalf of ExxonMobil"
Generator Authorized Agent Name

Signature

Shipment Date: 0 6 2 4 1 0

Section III. TRANSPORTER TRANSPORTER (Generator complete a-d; Transporter I complete e-g; Transporter II complete h-n)

HAZ~MAT
ENVIRONMENTAL SERVICES
P.O. BOX 37392 • CHARLOTTE, N.C. 28237

a. Driver Name/Title: Joshua McGriff

b. Phone No.: 704-332-5600 c. Truck No.: ST-5

Hazardous Waste Transporter Permits
EPA NC# 000003186
EPA NC0048461370

Driver Signature

Shipment Date: 0 6 2 4 1 0

TRANSPORTER II

e. Name

f. Address

g. Driver Name / Title

h. Phone No. i. Truck No.

j. Transporter II Permit Nos.

Driver Signature

Shipment Date

Section IV. FACILITY INFORMATION AND CERTIFICATE OF DISPOSAL

Site Name: Haz-Mat Environmental Services

Physical Address: 210 Dalton Avenue, Charlotte, N.C. 28206

a. Phone No. 704-332-5600

b. Mailing Address: P.O. Box 37392, Charlotte, N.C. 28237

Discrepancy Indication Space

This is to certify that all non-hazardous material removed from above location has been received and will be disposed of in accordance with applicable local, state and federal regulations in the following manner: (1) Petroleum products are blended into a beneficial reusable fuel for use in large industrial burners. (2) Waste waters are to be treated with polymers, pH adjusters, and a flocculant, then flows through a dissolved air flotation system for pretreatment separation, then into the CMUD sanitation sewer system under permit IUP#5012. (3) Sludges from treatment systems are hauled to E.P.A. approved facilities for proper disposal. Manifest and certificate of disposal are on file. (4) Our treatment system operates on a first in, first out basis and product should be processed within seven days.

SIGNATURE OF FACILITY AGENT	DATE	MONTH	DAY	YEAR
Mike Hinds		6	24	10

ORIGINAL - FINAL T.S.D. • YELLOW - DISPOSER • PINK - 1ST T.S.D. • GOLD - GENERATOR