



Final
**Remedial Action Construction Completion/
Remedial Action Completion Report**
Towers Road Disposal Areas
Harvey Point Defense Testing Activity
Hertford, North Carolina



Prepared for
Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic

March 2016

Final

**Remedial Action Construction Completion/
Remedial Action Completion Report
Towers Road Disposal Areas**

**Harvey Point Defense Testing Activity
Hertford, North Carolina**

Contract Task Order 0020

March 2016

Prepared for

**Department of the Navy
Naval Facilities Engineering Command
Mid-Atlantic**

Under the

**Navy Multimedia Contract
N62470-10-D-3009**

Prepared by

**CH2M HILL, Inc.
14120 Ballantyne Corporate Place, Suite 200
Charlotte, North Carolina
NC Engineering License #F-0699**



IHSB SITE NAME Towers Road Disposal Areas, Site ID NONCD0002893

DATE & NAME OF DOCUMENT March 2016 Remedial Action Construction Completion/Remedial Action Completion Report

TYPE OF SUBMITTAL (circle all that apply): Report Work plan, Work Phase Comp. Statement Schedule Change

REMEDIATING PARTY DOCUMENT CERTIFICATION STATEMENT (.0306(B)(2))

"I certify under penalty of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Harvey Point Defense Testing Activity
Name of Remediating Party

Brian Lee
Signature of Remediating Party

3/14/2016
Date

NOTARIZATION

North Carolina (Enter State)

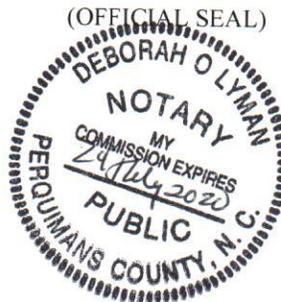
Perquimans COUNTY

I, Deborah Lyman, a Notary Public of said County and State, do hereby certify that Brian Lee did personally appear and sign before me this day, produced proper identification in the form of Drivers License, was duly sworn or affirmed, and declared that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 14 day of March, 2016.

Deborah O Lyman
Notary Public (signature)

My commission expires: 24 July 2020



REC PROGRAM DOCUMENT CERTIFICATION FORM - PAGE 2 OF 2

IHSB SITE NAME Towers Road Disposal Areas, Site ID NONCD0002893

DATE & NAME OF DOCUMENT March 2016 Remedial Action Construction Completion/Remedial Action Completion Report

TYPE OF SUBMITTAL (circle all that apply): Report, Work plan, Work Phase Comp. Statement, Schedule Change

REGISTERED SITE MANAGER CERTIFICATION OF SIGNATURES

As the Registered Environmental Consultant for the Site for which this filing is made, I certify that the signatures included herewith are genuine and authentic original handwritten signatures and/or true, accurate, and complete copies of the genuine and authentic original handwritten signatures of the persons who purport to sign for this filing. I further certify that I have collected through reliable means the originals and/or copies of said signatures from the persons authorized to sign for this filing who, in fact, signed the originals thereof. Those persons and I understand and agree that any copies of signatures have the same legally binding effect as original handwritten signatures, and I certify that any person for whom I am submitting a copy of their signature has provided me with their express consent to submit said copy. Additionally, I certify that I am authorized to attest to the genuineness and authenticity of the signatures, both originals and any copies, being submitted herewith and that by signing below, I do in fact attest to the genuineness and authenticity of all the signatures, both originals and copies, being submitted for this filing.

Kim Henderson

Name of Registered Site Manager

[Handwritten Signature]

Signature of Registered Site Manager

3.14.16

Date

REGISTERED SITE MANAGER DOCUMENT CERTIFICATION STATEMENT (.0306(b)(1))

"I certify under penalty of law that I am personally familiar with the information contained in this submittal, including any and all supporting documents accompanying this certification, and that the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete and complies with the Inactive Hazardous Sites Response Act N.C.G.S. 130A-310, et seq, and the remedial action program Rules 15A NCAC 13C .0300. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Kim Henderson

Name of Registered Site Manager

[Handwritten Signature]

Signature of Registered Site Manager

3.14.16

Date

NOTARIZATION

Virginia (Enter State)

Virginia Beach COUNTY

I, Rebecca Singleton, a Notary Public of said County and State, do hereby certify that Kim Henderson did personally appear and sign before me this day, produced proper identification in the form of Drivers License, was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant of the remediating party of the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certifications is true and accurate, and he or she then signed these Certifications in my presence.

WITNESS my hand and official seal this 14th day of MARCH, 2016

[Handwritten Signature]

Notary Public (signature)

(OFFICIAL SEAL)

My commission expires: 10/31/16



CONSTRUCTION COMPLETION CERTIFICATION
15A NCAC 13C.0306(b)(5)(D)

Media (check all that apply): All Media Soil Ground water Surface water Sediment

REC is in compliance with both 15A NCAC 13C .0305(b)(2) and .0305(b)(3): [check]

Site Name Towers Road Disposal Areas Street Address 2835 Harvey Point Road
County Perquimans Hertford, NC 27944
Site ID No. NONCD0002893

The construction of the final remedy, which is the subject of this certification has, to the best of my knowledge, been completed in compliance with the Inactive Hazardous Sites Response Act N.C.G.S. 130A-310, et seq. and the remedial action program Rules 15A NCAC 13C .0300. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information.



RSM Signature
Kim Henderson

RSM Name
CH2M HILL, Inc./Kim Henderson

REC Name
00006

REC No.

3-14-16

Date

5701 Cleveland Street, Suite 200

Mailing Address
Virginia Beach, VA 23462

City, State, ZIP

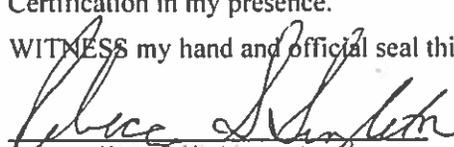
NOTARIZATION

Virginia (Enter State)

Virginia Beach COUNTY

I, Rebecca Singleton, a Notary Public of said County and State, do hereby certify that Kim Henderson did personally appear and sign before me this day, produced proper identification in the form of Drivers License, was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant of the remediating party of the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 14th day of MARCH, 2016



Notary Public (signature)

(OFFICIAL SEAL)

My commission expires: 12/31/16



REMEDIAL ACTION COMPLETION CERTIFICATION
15A NCAC 13C.0306(b)(5)(E)

Media (check all that apply): All Media Soil Ground water Surface water Sediment

REC is in compliance with both 15A NCAC 13C .0305(b)(2) and .0305(b)(3): [check]

Site Name Towers Road Disposal Areas Street Address 2835 Harvey Point Road
County Perquimans Hertford, NC 27944
Site ID No. NONCD0002893

The approved and certified site remedial action plan has been implemented, and to the best of my knowledge and belief, cleanup levels determined pursuant to Rule .0308 of this Section have been achieved, and no significant or otherwise unacceptable risk or harm to human health or the environment remains at the site.

The remedial action which is the subject of this certification has, to the best of my knowledge, been completed in compliance with the Inactive Hazardous Sites Response Act N.C.G.S. 130A-310, et seq. and the remedial action program Rules 15A NCAC 13C .0300. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information.


RSM Signature
Kim Henderson

3.14.16
Date

RSM Name
CH2M HILL, Inc /Kim Henderson
REC Name
00006
REC No.

5701 Cleveland Street, Suite 200
Mailing Address
Virginia Beach, VA 23462
City, State, ZIP

NOTARIZATION

Virginia _____ (Enter State)

Virginia Beach _____ COUNTY

I, Rebecca Singleton, a Notary Public of said County and State, do hereby certify that Kim Henderson did personally appear and sign before me this day, produced proper identification in the form of Drivers License, was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant of the remediating party of the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 14th day of MARCH, 2016


Notary Public (signature)

(OFFICIAL SEAL)

My commission expires: 3/31/16



Executive Summary

This Remedial Action Construction Completion/Remedial Action Completion Report summarizes the remedial action that was conducted at the Towers Road Disposal Areas (TRDA), Harvey Point Defense Testing Activity (HPDTA), Hertford, North Carolina. This document was prepared for Naval Facilities Engineering Command (NAVFAC) Atlantic under Contract Number N62470-10-D-3009, Contract Task Order 0020, for submittal to NAVFAC Atlantic, HPDTA, and the North Carolina Department of Environmental Quality (NCDEQ) Division of Waste Management Superfund Division Inactive Hazardous Sites Branch – Registered Environmental Consultant (REC) Program.

The TRDA consists of the 2nd Street Disposal Area and 5th Street Disposal Area, both located in the northern portion of HPDTA. The 2nd Street Disposal Area is primarily a grassy field. The 5th Street Disposal Area is a grassy field and contains a concrete pad. The ground surface at both areas is relatively flat.

The TRDA initially was reported to NCDEQ in 2011 and established as Site Identification Number NONCD0002893 under the REC Program. An Administrative Agreement for REC-directed voluntary assessment and remedial action was signed in April 2013, specifying that HPDTA (the remediating party) is responsible for assessing and remediating the areas contaminated through previous disposal practices. HPDTA selected CH2M HILL, Inc. (CH2M) as the REC for the TRDA.

The Phase I Remedial Investigation (RI) field activities were completed in 2014 and identified waste in-place; volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls, and metals at concentrations above regulatory criteria in soil; and VOCs, SVOCs, and metals at concentrations above regulatory criteria in groundwater. The Phase II RI was initiated in May 2014 and is in progress. The remedial action was initiated before completing the RI to expedite the site remediation and closure process by removing the waste, which is the presumed source of contamination to other site media.

The remedial action was conducted to address waste and impacted soil within the 2nd Street Disposal Area and 5th Street Disposal Area. The remedial action objectives are as follows:

- Limit direct exposure to waste and impacted soil
- Reduce the potential for contaminant migration from soil to groundwater and from the waste to soil and groundwater

Approximately 8,875 tons of waste (oversized construction debris, tires, scrap metal, material documented as safe, and compressed gas cylinders) and impacted soil were transported and disposed or recycled offsite. Confirmation of removal of waste and impacted soil was achieved through post-excavation visual inspection, digital geophysical mapping, and soil confirmation sampling to verify the horizontal and vertical extents of the excavations were sufficient. General fill and topsoil were spread within the excavated areas to restore the site to the pre-excavation elevations, to the extent practicable. For the restoration, 6,302 cubic yards of general fill and topsoil were imported. Following completion of backfilling activities and confirmation of the site elevations being consistent with the pre-excavation elevations, seed and straw were applied to the disturbed areas to stabilize vegetation.

The remedial action was completed for approximately \$1.5 million. The work was performed in accordance with applicable federal, state, and local regulations, codes, and standards. HPDTA representatives performed a final inspection of the site. The work was determined to be satisfactory and completed in accordance with the approved work planning documents, and the project objectives for the TRDA remedial action outlined in the work planning documents were achieved.

Contents

Executive Summary	v
Acronyms and Abbreviations	ix
1 Introduction	1-1
1.1 Background	1-1
1.2 Objectives and Scope.....	1-2
2 Remedial Action Construction Activities	2-1
2.1 Mobilization and Site Setup	2-1
2.2 Waste Characterization Sampling.....	2-1
2.3 Site Preparation	2-2
2.3.1 Utility Location.....	2-2
2.3.2 Erosion and Sediment Controls	2-2
2.3.3 Vegetation Clearance.....	2-2
2.3.4 Materials Handling Area	2-2
2.4 Excavation and Screening	2-3
2.4.1 Support Activities.....	2-4
2.4.2 Post-Excavation Confirmation	2-4
2.4.3 Post-Excavation Topographic Survey.....	2-6
2.5 Transportation and Disposal.....	2-6
2.6 Backfill and Site Restoration	2-7
2.7 Demobilization.....	2-8
3 Quality Assurance/Quality Control	3-1
4 Remedial Action Completion Summary	4-1
5 References	5-1

Attachments

A Topographic Surveys	
A1 2 nd Street Disposal Area Pre-Excavation Topographic Survey	
A2 5 th Street Disposal Area Pre-Excavation Topographic Survey	
A3 2 nd Street Disposal Area Post-Excavation Topographic Survey	
A4 5 th Street Disposal Area Post-Excavation Topographic Survey	
B Analytical Data	
B1 Phase II RI Surface Soil Data – 2 nd Street Disposal Area	
B2 Phase II RI Subsurface Soil Data – 2 nd Street Disposal Area	
B3 Phase II RI Surface Soil Data – 5 th Street Disposal Area	
B4 Phase II RI Subsurface Soil Data – 5 th Street Disposal Area	
B5 Waste Characterization Raw Analytical Results	
B6 PCB Delineation Raw Analytical Results	
B7 Confirmation Sampling Data – 2 nd Street Disposal Area	
B8 Confirmation Sampling Data – 5 th Street Disposal Area	
B9 General Fill Data	
B10 Topsoil Data	
B11 Reprocessed VOC Confirmation Sampling Data – 5 th Street Disposal Area	

- C Transportation and Disposal Documentation
 - C1 Impacted Soil (Clearfield MMG)
 - C2 Impacted Soil (Atlantic Waste Disposal)
 - C3 Oversized Debris
 - C4 PCB Soil
 - C5 MDAS
 - C6 Compressed Gas Cylinders
 - C7 Tires
- D Well Abandonment Records
- E DGM Reports
 - E1 2nd Street Disposal Area DGM Report
 - E2 5th Street Disposal Area DGM Report
- F Backfill Material Delivery Documentation
- G Laboratory Reports
 - G1 Phase II RI Soil Delineation Sampling
 - G2 Waste and Impacted Soil Characterization Sampling
 - G3 PCB Soil Delineation Sampling
 - G4 Soil Confirmation Sampling
 - G5 General Fill
 - G6 Topsoil
 - G7 Re-processed 5th Street Disposal Area Soil Confirmation Sampling
- H UXO QC Forms

Tables

- 1 Crosswalk to Required Information
- 2 Summary of Transportation and Disposal Quantities
- 3 Demonstration of Attainment of the RAOs

Figures

- 1 HPDTA Location
- 2 Site Location
- 3 2nd Street Disposal Area Phase II RI Soil Delineation Analytical Results – Exceedances Only
- 4 5th Street Disposal Area Phase II RI Soil Delineation Analytical Results – Exceedances Only
- 5 TRDA REC Program Milestones Timeline
- 6 5th Street Disposal Area PCB Delineation Analytical Results
- 7 2nd Street Disposal Area EM31 In-phase Results
- 8 5th Street Disposal Area EM31 In-phase Results
- 9 2nd Street Disposal Area Soil Confirmation Sampling Analytical Results – Exceedances Only
- 10 5th Street Disposal Area Soil Confirmation Sampling Analytical Results – Exceedances Only

Acronyms and Abbreviations

bgs	below ground surface
CH2M	CH2M HILL, Inc.
cy	cubic yard
DDESB	Department of Defense Explosives Safety Board
DFOW	definable feature of work
DGM	digital geophysical mapping
DoD	Department of Defense
DPT	direct-push technology
EM31	Geonics, Ltd. EM31-MK2
ESCP	Erosion and Sediment Control Plan
ESS	Explosives Safety Submission
ESS DR	Explosives Safety Submission Determination Request
FQM	Field Quality Manager
HPDTA	Harvey Point Defense Testing Activity
IRAP	Interim Remedial Action Plan
MDAS	material documented as safe
MEC	munitions and explosives of concern
mg/kg	milligram per kilogram
MPPEH	material potentially presenting an explosive hazard
NAEVA	NAEVA Geophysics
NAVFAC	Naval Facilities Engineering Command
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NCDEQ	North Carolina Department of Environmental Quality
NOSSA	Naval Ordnance Safety and Security Activity
PCB	polychlorinated biphenyl
PSRG	preliminary soil remediation goal
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RA	remedial action
RAO	remedial action objective
RAP	Remedial Action Plan
REC	Registered Environmental Consultant
RI	Remedial Investigation
SVOC	semivolatile organic compound
TCLP	toxicity characteristic leaching procedure
TRDA	Towers Road Disposal Areas
UXO	unexploded ordnance
UXOQCS	Unexploded Ordnance Quality Control Specialist
VOC	volatile organic compound

Introduction

This report summarizes the remedial action (RA) that was conducted at the Towers Road Disposal Areas (TRDA), Harvey Point Defense Testing Activity (HPDTA), Hertford, North Carolina (**Figure 1**). RA activities were initiated in May 2014 and completed in November 2015 to address potential human health risks associated with exposure to waste and constituents in site soil. The RA was conducted in accordance with the following plans:

- *Interim Remedial Action Plan and Preconstruction Report, Towers Road Disposal Areas – Waste and Soil* (CH2M HILL, Inc. [CH2M], 2014b), herein referred to as the Remedial Action Plan (RAP)¹
- Remedial Action Plan and Preconstruction Report Addendum (CH2M, 2015b), herein referred to as the RAP Addendum
- *Explosives Safety Submission Determination Request for Towers Road Disposal Areas 5th Street Disposal Area* (CH2M, 2014c), herein referred to as the Explosives Safety Submission Determination Request (ESS DR)
- *Explosives Safety Submission for Towers Road Disposal Areas 2nd Street Disposal Area* (CH2M, 2015a), herein referred to as the Explosives Safety Submission (ESS)

This report was prepared for submittal to Naval Facilities Engineering Command (NAVFAC) Atlantic, HPDTA, and the North Carolina Department of Environmental Quality (NCDEQ) Division of Waste Management Superfund Division, Inactive Hazardous Sites Branch – Registered Environmental Consultant (REC) Program.

1.1 Background

The TRDA consists of the 2nd Street Disposal Area and 5th Street Disposal Area, both located in the northern portion of HPDTA (**Figure 2**). The 2nd Street Disposal Area is in the northeastern quadrant of the intersection of 2nd Street and Flat Run Road and is primarily a grassy field. The 5th Street Disposal Area is north of Flat Run Road approximately 1,000 feet east of the 2nd Street Disposal Area and contains a concrete pad. The ground surface at both areas is relatively flat, based on a topographic survey completed on June 4, 2013, showing the existing site conditions before starting excavation activities (**Attachments A1 and A2**).

The TRDA initially was reported to NCDEQ in 2011 and established as Site Identification Number NONCD0002893 under the REC Program. An Administrative Agreement for REC-directed voluntary assessment and RA was signed in April 2013 (North Carolina Department of Environment and Natural Resources [NCDENR], 2013a), specifying that HPDTA (the remediating party) is responsible for assessing and remediating the areas contaminated through previous disposal practices. HPDTA selected CH2M as the REC for the TRDA.

The Phase I Remedial Investigation (RI) field activities were completed in 2014 and identified waste in-place; volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals at concentrations above regulatory criteria in soil; and VOCs, SVOCs, and metals at concentrations above regulatory criteria in groundwater (CH2M, 2014a). The REC Phase II RI was initiated in May 2014 and is in progress. The Phase II RI included soil sampling to determine the horizontal and vertical extents of soil contamination. At both disposal areas, surface soil and subsurface

¹ The Interim Remedial Action Plan (IRAP) and Preconstruction Report document was submitted to the REC Program in April 2014. Following submittal, because the remedy was designed to remove waste and meet the remedial goals for soil, the IRAP subsequently was changed to remove “interim” and is now considered the RA for waste and soil.

soil samples were collected along the perimeter of the estimated extent of waste and impacted soil (**Figures 3 and 4**).

Site-specific chemical of potential concern surface soil and subsurface soil data were compared against established site-specific preliminary soil remediation goals (PSRGs) (**Attachments B1 through B4**). The minimum horizontal and vertical estimated extents of waste and impacted soil were increased, based on the Phase II RI soil sampling results, in areas where exceedances of PSRGs occurred. The groundwater portion of the Phase II RI is currently in progress. The RA was initiated before completing the RI to expedite the site remediation and closure process by removing the waste, which is the presumed source of contamination to other site media.

A crosswalk table (**Table 1**) provides the location in this report of information required by the REC Program Implementation Guidance (NCDEQ, 2015). **Figure 5** shows a timeline of site activities, reporting, and key milestones within the REC Program.

TABLE 1
Crosswalk to Required Information

REC Program Rules	Required Information	Location in this Report
15A NCAC 13C.0306(n)(1)	As-built plans and specifications	Attachment A
15A NCAC 13C.0306(n)(2)	Variations from final design plans	Not Applicable
15A NCAC 13C.0306(n)(3)	Problems encountered during construction	Section 3
15A NCAC 13C.0306(o)(1)	Operation and maintenance results	Section 2
15A NCAC 13C.0306(o)(2)	Performance evaluation results	Sections 2 and 4
15A NCAC 13C.0306(o)(3)	Quality assurance/quality control	Section 3
15A NCAC 13C.0306(o)(4)	Analytical results	Attachment B
15A NCAC 13C.0306(o)(5)	Sampling maps	Figures 3, 4, 6, 7, 8, 9, and 10
15A NCAC 13C.0306(p)(2)	Remedial action summary	Section 4
15A NCAC 13C.0306(p)(3)	Remedial action completion	Section 4
15A NCAC 13C.0306(p)(4)	Project Costs	Section 4
15A NCAC 13C.0306(q)	RA-derived wastes	Section 2

NCAC = North Carolina Administrative Code

1.2 Objectives and Scope

The scope of the RA was to address waste and impacted soil within the 2nd Street Disposal Area and 5th Street Disposal Area. The remedial action objectives (RAOs) for the waste and impacted soil are:

- Limit direct exposure to waste and impacted soil
- Reduce the potential for contaminant migration from soil to groundwater and from the waste to soil and groundwater

The selected alternative identified in the RAP (CH2M, 2014b) was full excavation and disposal consisting of the excavation and offsite disposal of waste and impacted soil and support activities such as erosion and sediment control installation, vegetation clearing, geophysical and topographic surveying, confirmation sampling, and site restoration.

Remedial Action Construction Activities

The RA was initiated in May 2014 and completed in November 2015. It included the following tasks, which are described in detail in the following subsections:

- Mobilization and site setup
- Waste characterization sampling
- Site preparation
- Excavation and screening
- Transportation and disposal
- Backfill and site restoration
- Demobilization

2.1 Mobilization and Site Setup

Construction personnel, equipment, and materials mobilized to the site throughout the RA:

- The first mobilization began in May 2014 to complete the pre-excavation waste characterization sampling.
- The second mobilization began in July 2014 to complete the excavation and offsite disposal of waste and impacted soil. However, during excavation activities at the 2nd Street Disposal Area, material potentially presenting an explosive hazard (MPPEH) was identified in August 2014, and all onsite activities were stopped to assess and plan for the associated hazards, as discussed in Section 2.4.
- The third mobilization began in October 2015 to complete the remaining excavation and offsite disposal of waste and impacted soil as discussed in Section 2.4.

In general, mobilization and site setup activities consisted of the following:

- Establishing security clearance and base access for project personnel
- Setting up support areas to include sanitation facilities, a fuel and oil storage area, and material storage areas
- Establishing traffic control areas and exclusion zones
- Establishing haul truck routes
- Delivering of heavy equipment: excavators, skid steer, loader, dozer, off-road dump
- Delivering and setup of mechanical screener
- Delivering and setting up of the munitions and explosives of concern (MEC)/MPPEH storage container

2.2 Waste Characterization Sampling

Pre-excavation waste characterization sampling was completed to ensure proper handling and final disposition of waste and impacted soil. Waste characterization samples were collected at a rate of approximately one sample per 500 cubic yards (cy) of waste and impacted soil. A Department of Defense (DoD) Environmental Laboratory Accreditation Program-accredited laboratory analyzed the samples for VOCs, SVOCs, metals, herbicides, and pesticides using the toxicity characteristic leaching procedure (TCLP), ignitibility, corrosivity, and reactivity (**Attachment B5**). The waste characterization analytical results and waste profile were forwarded to the NAVFAC and HPDTA representatives for review and approval for the offsite transportation and disposal of excavated material.

The analytical results indicated the material was acceptable for disposal at a nonhazardous (Subtitle D) landfill. However, during Phase II RI soil sampling, surface soil (collected from 0 to 6 inches below ground surface [bgs]) from sample TR-5TH-SS07 had total PCB concentrations (72 milligrams per kilogram [mg/kg]) exceeding 50 mg/kg (**Figure 4**). As a result, the soil was excavated, segregated, and managed in accordance with the Toxic Substances Control Act and the PCB regulations found at 40 Code of Federal Regulations 761. Subsurface soil deeper than 1 foot bgs had been previously sampled during the Phase II RI and did not have any detections of total PCBs exceeding 50 mg/kg.

In order to refine the horizontal and vertical extents of surface soil with total PCB concentrations exceeding 50 mg/kg near sample TR-5TH-SS07 (**Figure 6**), soil delineation samples were collected (**Attachment B6**). Delineation samples were collected from two vertical depths (0 to 6 inches bgs and 6 to 12 inches bgs) from sample locations to the north, east, and west of surface soil sample TR-5TH-SS07 at 2.5-foot distance intervals, up to 7.5 feet. In addition, a sample was collected at TR-5TH-SS07 within the 6- to 12-inch bgs interval. All samples were shipped to an offsite laboratory. Initially, only the 6- to 12-inch bgs sample from TR-5TH-SS07 (TR-5TH-SS07-0.5-01) and the 0- to 6-inch bgs samples from to the closest north (TR-5TH-SS07-N1), east (TR-5TH-SS07-E1), and west (TR-5TH-SS07-W1) of sample TR-5TH-SS07 locations were analyzed while the remaining samples were held pending the results of the initial samples. The analytical results from the initial samples indicated the area with total PCB concentrations exceeding 50 mg/kg had been delineated, and the laboratory did not analyze additional samples.

2.3 Site Preparation

2.3.1 Utility Location

Before conducting intrusive work, subsurface utility locations were completed in May 2014 and October 2015 to locate and mark out any underground utilities within and near the estimated boundaries of the 2nd Street Disposal Area and 5th Street Disposal Area. Utilities were identified using non-intrusive subsurface detection equipment (magnetometers, ground penetrating radar, or similar devices), as well as opening manhole covers to verify pipe direction, and were marked on the ground with survey marking paint.

2.3.2 Erosion and Sediment Controls

Erosion and sediment controls were established, inspected, and maintained in accordance with the approved Erosion and Sediment Control Plan (ESCP) (CH2M, 2014b) and in accordance with the *North Carolina Erosion and Sediment Control Planning and Design Manual* (NCDENR et al., 2013b) and North Carolina Sedimentation Pollution Control Act of 1973. Erosion and sediment controls were installed in May 2013 during mobilization for Phase I RI activities and were inspected and reinstalled, as necessary, during the RA site preparation activities in July 2014 and October 2015. Inspections of the erosion and sediment control measures were performed after each runoff-producing rain event or at least once weekly during RA activities.

2.3.3 Vegetation Clearance

Vegetation clearing consisted of select removal of brush and trees to within 6 inches of the ground surface within the extent of waste and impacted soil. The branches, trees less than 6 inches in diameter, and bushes that were removed were mulched and left in place. The trees over 6 inches in diameter and stumps that were removed were disposed of offsite.

2.3.4 Materials Handling Area

A materials handling area was constructed to stage excavated material prior to offsite disposal. The materials handling area was constructed as detailed in the approved ESCP (CH2M, 2014b); however, it was located on the concrete pad on the northern side of Flat Run Road at the 5th Street Disposal Area.

2.4 Excavation and Screening

The excavation consisted of removing waste and impacted soil using the RI soil sample results, visual inspections, digital geophysical mapping (DGM), and post-excavation confirmation sampling (discussed in following sections) to confirm the horizontal and vertical extents of the excavation area. For the sample locations shown on **Figures 3 and 4** with exceedances of the PSRGs, excavation continued to 1 foot beyond the horizontal limit and until no visible waste was encountered. Where practicable, the additional excavation occurred from the midpoint of the horizontal distance between the failed wall sample and the next passing wall sample on either side (**Figures 9 and 10**).

The excavation within the 2nd Street Disposal Area was initiated in July 2014 and completed in November 2015. Initially, waste and impacted soil within the 2nd Street Disposal were excavated in accordance with the RAP (CH2M, 2014b). The excavated material was either stockpiled within the excavation area or direct loaded into haul trucks. Following identification of MPPEH at the 2nd Street Disposal Area in August 2014, an ESS (CH2M, 2015a) was developed to ensure applicable DoD regulations and standards were applied and health and safety procedures were identified and implemented during the remainder of the RA at the 2nd Street Disposal Area. Additionally, the excavation approach was revised to incorporate processes to separate MEC/MPPEH from other waste streams for proper management² (CH2M, 2015b). Following NOSSA approval and Department of Defense Explosives Safety Board (DDESB) endorsement of the ESS (CH2M, 2015a), the excavations were resumed.

Material was excavated in lifts no greater than 12 inches thick to allow for visible inspection by UXO technicians, and the material was mechanically screened near the excavation activities. The mechanical screen was equipped with rotary magnets at its outfall for smaller metal recovery and was sized to retain items larger than 2 inches. UXO technicians inspected the material retained (e.g., greater than 2 inches) for the presence of MEC/MPPEH. Equipment used during the excavation and screening activities was sized to maintain the required minimum separation distance and armored to protect the operator from hazardous fragments if an MEC/MPPEH item detonated during the excavation and screening. The excavation and screening operations consisted of the following:

- Conducting a visual surface sweep of the ground surface and stockpiled material from the excavation activities completed in 2014 to locate and remove any MEC/MPPEH
- Removing the waste and impacted soil in bucket-loads using an excavator
- Placing the removed waste and impacted soil into the mechanical screen
- Following completion of the initial mechanical screening of excavated material, spreading remaining material greater than 2 inches in any dimension in 6-inch lifts, inspecting the material, and removing any munitions-related items (inspection and removal conducted by UXO-qualified technicians)
- Stockpiling the excavated material into two separate lots, one for soil and debris which passed through the 2-inch screen during mechanical screening and one for material greater than 2 inches in any dimension, which was required to be inspected by the UXO-qualified technicians

The excavation within the 5th Street Disposal Area was initiated in July 2014 and completed in October 2015. Initially, the excavated material was either staged in the materials handling area for offsite disposal or direct loaded into haul trucks. Following the discovery of MPPEH at the 2nd Street Disposal Area in August 2014, an ESS DR (CH2M, 2014c) was developed to assess the munitions safety aspects of the project and clarify what RA activities could be conducted without an ESS since MEC/MPPEH had not

²Following identification of MPPEH at the 2nd Street Disposal Area in August 2014, an ESS was developed for processing of the TRDA material stockpiled at the Clearfield MMG., Inc. Suffolk Plant. Following NOSSA approval and DDESB endorsement of the ESS, material processing was initiated November 2014 and completed in January 2015.

been identified at the 5th Street Disposal Area. Following a Naval Ordnance Safety and Security Activity (NOSSA) determination that an ESS was not required to continue work at the 5th Street Disposal Area, as a conservative measure, material from the 5th Street Disposal Area was excavated in lifts no greater than 12 inches thick, visibly inspected by an unexploded ordnance (UXO) technician, and placed in a material handling area for offsite disposal.

At the 5th Street Disposal Area, three intact compressed gas cylinders of unknown contents were encountered. The compressed gas cylinders were evaluated to ensure proper characterization, transportation, and offsite disposal. The three cylinders were determined to be empty non-regulated cylinders, rendered unserviceable, and disposed offsite (**Attachment C7** and Section 2.5).

Approximately 8,875 tons of material (3,905 tons from the 2nd Street Disposal Area and 4,970 tons from the 5th Street Disposal Area) were excavated from the TRDA. The excavated material consisted of impacted soil, oversized construction debris, tires, scrap metal, MPPEH that was inspected and documented as material documented as safe (MDAS), and compressed gas cylinders as detailed in Section 2.5. The 2nd Street Disposal Area excavation extent was approximately 0.7 acre and ranged in depth from surficial to approximately 10 feet bgs. The 5th Street Disposal Area excavation extent was approximately 0.9 acre and ranged in depth from surficial to approximately 8 feet bgs. The boundaries of the excavation extents are presented on **Figures 7 and 8**.

2.4.1 Support Activities

2.4.1.1 Excavation Dewatering and Dust Controls

To the extent possible, excavation activities occurred in a manner to allow the site to serve as its own retention basin, and nuisance water encountered during excavation activities was handled within the excavation. The primary mechanisms for draining nuisance water were infiltration through the sidewalls and bottom of the excavation, and creating berms and diversions within the excavation area to direct water.

Dewatering was not necessary, as the water content of the excavated material was not significant enough to require dewatering. When the site was experiencing dry conditions, dust control measures were implemented (street sweeping, wetting the site) to minimize dust emissions from the site.

2.4.1.2 Monitoring Well Abandonment

Monitoring wells TR-2ND-MW01, TR-2ND-MW02, and TR-5TH-MW01, located within the excavation areas, were abandoned in place in accordance with North Carolina requirements (15A NCAC 02C.0100 or 02C.0200) in July 2014 (**Attachment D**). As part of the abandonment process, the monitoring wells were filled with cement grout, delivered as slurry, and pumped via a tremie pipe from the bottom of the monitoring well. The well casings and concrete pad casings were removed during excavation activities and disposed of as construction debris with the excavated waste and impacted soil.

2.4.2 Post-Excavation Confirmation

2.4.2.1 Visual Inspection

At both disposal areas, for areas where waste extended beyond the horizontal limits defined based on the Phase I RI and Phase II RI soil sample results, excavation continued until visible waste was removed.

2.4.2.2 Digital Geophysical Mapping

After removing the waste to visible limits, NAEVA Geophysics (NAEVA) completed DGM using a Geonics, Ltd. EM31-MK2 (EM31) across the excavation floor in an attempt to assess whether buried debris remained below the excavation floor. The EM31 was used during pre-excavation delineation and characterization efforts at the 2nd Street Disposal Area and 5th Street Disposal Area.

Details of the DGM approach, equipment, survey execution, and quality control (QC) measures are provided in the NAEVA reports (**Attachment E**). Because of the steep terrain within and near the

trenches (**Figures 7 and 8**), these portions of the excavation areas were not surveyed. Additionally, localized data gaps in the DGM coverage exist where large trees (greater than 6 inches in diameter) limited access with the EM31.

NAEVA identified 13 geophysical anomalies of interest (11 from the 2nd Street Disposal Area and 2 from the 5th Street Disposal Area) in the EM31 in-phase data (**Figures 7 and 8**). These anomalies were selected because of the size of their footprint and because they exhibited peak responses outside the interpreted background response range for each disposal area. In addition, CH2M identified 12 anomalies of interest at the 5th Street Disposal Area for follow-up excavation for the same reasons (**Figure 8**). The entire suite of EM31 results are presented in **Attachment E**, but the in-phase results are included as **Figures 7 and 8** because they were specifically used for determining follow-up excavation locations.

Excavation was completed at each geophysical anomaly identified on **Figures 7 and 8** to identify the anomaly source. The excavations completed adjacent to Flat Run Road at both disposal areas identified an 8-inch-diameter cast iron pipe as the likely source of the anomalies. Wastes encountered in the excavation of the remaining geophysical anomalies included scrap metal, debris (car parts, empty metal paint cans, and a crushed drum carcass), and MPPEH. Waste encountered during the excavation was removed and disposed offsite as discussed in Section 2.5.

2.4.2.3 Confirmation Sampling

Following completion of the DGM and follow-up excavation, confirmation sampling was completed to verify the horizontal and vertical extents of the excavations were sufficient. The confirmation sampling consisted of wall samples collected approximately every 75 linear feet along the excavation perimeter and floor samples collected from 50-x-50-foot grids (**Figures 9 and 10**). However, for areas where the excavation floor was at or below the water table and the soil was saturated (see trenches on **Figures 9 and 10**), floor confirmation samples were not collected in that grid.

The analytical results were screened against the PSRGs and background values (**Attachments B7 and B8**). The RAP (CH2M, 2014b) discussed screening the analytical results against the adjusted residential health based soil remediation goals; however, as a result of VOC data quality concerns identified for the RI soil samples (CH2M, 2015b) the analytical results were screened against the more conservative PSRGs³. At the 2nd Street Disposal Area, only arsenic and cobalt exceeded both the background values and one or both of the PSRGs:

- For arsenic, several samples exceeded the human health risk-based PSRG (0.68 mg/kg) but were below the protection of groundwater PSRG (5.8 mg/kg). All arsenic results (maximum detection 5.49 mg/kg) were similar in magnitude to the background value (3.74 mg/kg) and detected at similar concentrations across the site (minimum 3.35 mg/kg; maximum 5.49 mg/kg).
- For cobalt, several samples exceeded the protection of groundwater PSRG (0.9 mg/kg) but were below the human health risk-based PSRG (4.6 mg/kg). One cobalt sample (4.78 mg/kg) slightly exceeded the human health risk-based PSRG (4.6 mg/kg) but was similar in magnitude to the maximum background value (4.64 mg/kg). In accordance with Appendix E, Section E.3 of the REC Program Implementation Guidance (NCDEQ, 2015), cobalt data collected from those wall confirmation samples located within the 10,000-square-foot (0.23-acre) area surrounding CSW05 (CSW06 and CSW07) were averaged to demonstrate attainment of the human health risk-based PSRG for cobalt. Nondetects were included at the value of the reporting limit. The average concentration (4.38 mg/kg) was below the human health risk-based PSRG.

³ Confirmation sampling at the 5th Street Disposal Area was completed in 2014. Environmental Conservation Laboratories Inc. performed data quality concerns associated with VOCs analysis. As a result, there is uncertainty with the detected constituents and reported concentrations of VOCs in soil at the TRDA. To address the uncertainty with the soil VOCs at the 5th Street Disposal Area, the data were reprocessed and target compound list VOCs were reported (**Attachments B11 and G7**). In accordance with the RAP Addendum (CH2M, 2015b), the 2nd Street Disposal Area confirmation samples were analyzed for target compound list VOCs (**Attachments B7 and G4**).

At the 5th Street Disposal Area, only benzo(a)pyrene and arsenic exceeded both the background values and the PSRGs:

- For benzo(a)pyrene, only 2 of 15 wall samples (CSW02 at 0.033 J mg/kg and CSW11 at 0.018 J mg/kg) were similar to or slightly exceeded the human health risk-based PSRG (0.016 mg/kg). The highest concentrations of benzo(a)pyrene detected during the Phase II RI delineation sampling (**Figure 4**; minimum 0.021 J mg/kg; maximum 0.57 mg/kg) have been removed (**Figure 10**).
- For arsenic, several samples exceeded the human health risk-based PSRG (0.68 mg/kg) but were below the protection of groundwater PSRG (5.8 mg/kg). All arsenic results (maximum detection of 5.10 mg/kg) were similar in magnitude to the background value (3.74 mg/kg) and detected at similar concentrations across the site (minimum 0.486 J mg/kg; maximum 5.49 mg/kg).

The results of the confirmation sampling indicate the exceedances of the PSRGs (**Figures 9 and 10**) are not indicative of a release and therefore do not require additional excavation to address impacted soil.

2.4.3 Post-Excavation Topographic Survey

Following completion of the excavation activities, a North Carolina-licensed land surveyor (LDSI, Inc.) completed a topographic survey of the site to capture the lateral and vertical extents of the excavation area. The post-excavation topographic surveys were completed in October 2015 at the 5th Street Disposal Area and in November 2015 at the 2nd Street Disposal Area (**Attachments A3 and A4**).

2.5 Transportation and Disposal

The haul trucks were inspected upon arrival to the site for verification that the vehicles were in suitable condition (e.g., secure tailgates and working tarps) to haul manifested loads to the disposal facility. Each hauling truck was filled below the top of the haul truck bed sidewalls to avoid spillage on site and public roads. Proper shipping papers were completed for each load, and the appropriate copies accompanied each load to the disposal facility (**Attachment C**).

Approximately 8,875 tons of waste and impacted soil were transported and disposed of offsite. **Table 2** summarizes the quantity of impacted soil and debris, oversized debris (including trees over 6 inches in diameter and tree stumps), PCB-contaminated soil, tires, MDAS, scrap metal, and compressed gas cylinders transported offsite for disposal or recycling during implementation of this RA. **Attachment C** contains a complete summary of the transportation and disposal activities documentation.

The processing of approximately 2,345 tons of waste and impacted soil from the 2nd Street Disposal Area, following the August 1, 2014 discovery of MPPEH⁴, resulted in recovering 607 MPPEH items. The MPPEH was inspected and documented as MDAS and recycled offsite as detailed in the After Action Report (CH2M, 2016). Before the offsite transport of MDAS to the recycling facility, six items (one Projectile, 81-mm practice [expended]; four Projectile, 60-mm, practice [expended with no fuze]; and one Rocket, 2.36-inch, M7A1, [Practice rocket motor expended]) were demilitarized onsite via explosive venting on November 6, 2015. A UXO technician transported the MDAS to the recycling facility to witness the destruction of all MDAS and demilitarization of the items that maintained the appearance of munitions (**Attachment C5**).

The MPPEH consisted of:

- 420 - Rocket, 3.5-inch, M29, Practice (rocket motors expended other components wholly inert)

⁴ On August 1, 2014, a Puryear haul truck traveling from HPDTA was in an accident on Harvey Point Road involving an oncoming vehicle. Local fire and EMS responded to the accident, both drivers were taken from the scene by ambulance, and were released, reportedly with minor injuries. The dump truck turned on its side, spilling its load (waste and soil from the 2nd Street Disposal Area portion of the site) and diesel spilled from the vehicles. Puryear's environmental response contractor (Eastern Environmental Management) responded to the accident, reported the spill to North Carolina (the Incident # given by the NC state EOC is 81141712), applied sorbent pads and boom to a ditch where diesel spilled and installed a boom downstream, and excavated the spilled material and diesel-impacted soil into haul trucks.

- 1 – Rocket, Unknown, Motor (expended)
- 1 – Rocket, 2.36-inch, M7A1, Practice, rocket motor expended
- 26 – Rocket, 5-inch FFAR (fins only)
- 1 – Rocket, 2.75-inch (venturi only)
- 1 – Fuze, Point Detonating, M48 (functioned as designed)
- 4 – Signal, Illumination, M127 (expended tail sections)
- 1 – Grenade, Hand, MK2 (practice, expended, no fuze)
- 1 – Nose Cone, 3-inch, Unknown (wholly inert)
- 6 – Bomblet, Unknown (sand-filled with folding fins [9 inches long with 1.5-inch diameter)
- 1 – Grenade, Container, MK 1 Mod 2
- 2 – Mine, Land, M8, M8A1 practice expended
- 1 – Shape Charge Body, Unknown (wholly inert)
- 74 – Cartridge Case, 40-mm (expended)
- 1 – Rocket, 2.75-inch (partial piece of rocket body, expended)
- 2 – Cartridge Case, 3-inch (expended)
- 2 – Cartridge Case, 20-mm (expended)
- 1 – Cartridge Case, 25-mm (expended)
- 17 – Cartridge Case, 75-mm, Recoilless (expended)
- 1 – Booster cup (remnant remaining from the functioned as designed fuze)
- 4 – Projectile, 60-mm practice (expended with no fuze)
- 7 – Projectile, 81-mm practice (expended)
- 32 – Grenade, Hand, Smoke (expended functioned as designed)

TABLE 2
Summary of Transportation and Disposal Quantities

Material Type	Quantity	Unit	Disposal Facility
Impacted Soil and Debris	6,402	tons	Clearfield MMG in Chesapeake, Virginia
Impacted Soil and Debris	2,183	tons	Atlantic Waste Disposal in Waverly, Virginia
Oversized Debris	152	tons	Republic/East Carolina Landfill in Aulander, North Carolina
PCB Soil	0.16	tons	ECOFLO in Greensboro, North Carolina
MDAS	0.87	tons	Elizabeth River Recycling in Chesapeake, Virginia
Scrap Metal	5*	tons	To-be-determined
Compressed Gas Cylinders	0.48	tons	Southeastern Public Service Authority in Chesapeake, Virginia
Tires	133	tons	Perquimans Chowan Gates Landfill in Belvidere, North Carolina

*Scrap metal tonnage is estimated based on approximately 11 cy of scrap metal being transported to the HPDTA Recycling Center for offsite disposal and an estimated conversion rate of 910 pounds per 1 cy (California Integrated Waste Management Board, 2007).

2.6 Backfill and Site Restoration

Before use, onsite general fill and offsite topsoil (Whitehurst Sand in Hertford, North Carolina) sources were sampled and analyzed for VOCs, SVOCs, pesticides, PCBs, and metals. Backfill material was certified as clean through the analytical testing and comparison to the PSRGs, both health-based and protection of groundwater, and background soil values (**Attachments B9 and B10**). For the general fill, five metals (arsenic, cobalt, iron, manganese, and vanadium) exceeded one of the PSRGs; however, the concentrations of all five metals were below their respective background values. For topsoil, three metals (arsenic, iron, and vanadium) exceeded one of the PSRGs; however, the concentrations of all

three metals were below their respective background values. The topsoil pH of 5.9 was below the recommended range for topsoil in the *North Carolina Erosion and Sediment Control Planning and Design Manual* (NCDENR et al., 2013b) of 6 to 7.5 pH; however, the topsoil was amended with lime to increase the pH to an acceptable range.

After the final excavation extent and depth were surveyed to document the RA, CH2M received approval from NAVFAC and HPDTA representatives to begin backfilling operations. Backfilling operations began in October 2015 at the 5th Street Disposal Area and in November 2015 at the 2nd Street Disposal Area. General fill and topsoil material was spread within the excavated areas to restore the site to pre-excavation elevations, to the extent practicable. The approved backfill was placed using a dump truck and tracked dozer; the backfill was dumped at the edge of the excavation and spread using the tracked dozer. The backfill was compacted using the weight of the tracked dozer. General fill was placed in loose lifts and compacted with a minimum of three passes of the placing equipment and until there were no visible signs of rutting, pumping, or displacement of soil because of soft areas. Topsoil was placed in loose lifts, and its compaction was incidental to its placement and spreading across the excavation area. A total of 6,302 cy (454 loads) of general fill were imported by dump trucks from the HPDTA soil stockpile, and a total of 1,035 cy (69 loads) of topsoil were imported by dump trucks from Whitehurst Sand in Hertford, North Carolina. **Attachment F** contains a complete summary of the backfill delivery activities documentation.

Following completion of backfilling activities and approval by HPDTA representatives of the site grade, seed and straw were applied to the disturbed areas to stabilize vegetation.

2.7 Demobilization

During waste characterization sampling, nondisposable sampling equipment (e.g., stainless steel spoons and pans, as well as direct-push technology [DPT] rods) were decontaminated between sample locations via washing with an Alconox/distilled water solution for the stainless steel spoons and pans and steam cleaning for the DPT rods. Decontamination fluids were contained in 55-gallon drums, along with decontamination fluids from the Phase II RI delineation sampling, for sampling and offsite disposal. The disposal documentation for the waste characterization sampling investigation-derived waste will be included in the Phase II RI report. Before leaving the site, heavy equipment used during the RA was decontaminated using dry decontamination procedures. Upon completion of decontamination, equipment was inspected for acceptable cleanliness and released for demobilization. During demobilization, support equipment, staging areas, waste materials, and heavy equipment were removed from the site.

CH2M and HPDTA representatives held a post-construction inspection in November 2015 at TRDA to ensure all tasks had been conducted to the satisfaction of HPDTA and in accordance with the scope identified in the work planning documents (CH2M, 2014b and 2015b). All work was deemed satisfactory. Upon HPDTA approval of establishment of vegetation across the sites, the existing erosion and sediment controls were removed and disposed offsite in February 2016.

SECTION 3

Quality Assurance/Quality Control

Quality assurance (QA) and QC samples were collected in accordance with the RAP Quality Assurance Project Plan (QAPP) (CH2M, 2014b), Department of the Navy, and CH2M protocols. Field QA/QC samples were collected at the following frequency:

- Trip blank – one per cooler with VOC samples to document contamination attributable to shipping and field handling procedures
- Duplicate samples – 1 per 10 samples to assess precision of the field sampling process
- Equipment blank – one per day, when equipment was decontaminated to monitor the effectiveness of the decontamination process
- Temperature blank – one per cooler containing samples requiring preservation at approximately 4 degrees Celsius to verify the temperature of the samples contained in the cooler

Laboratory QA/QC was performed in accordance with the RAP QAPP (CH2M, 2014b) and the laboratories Quality Control Plan. **Attachment G** contains the Laboratory reports. Examples of laboratory QA/QC samples include the following:

- Method blank – 1 per 20 samples (or for each analytical batch, whichever was more frequent) to monitor laboratory performance and check for contamination introduced during the preparation and analytical procedures
- Laboratory control samples – one per preparation and analytical batch to evaluate precision and accuracy of the analytical method
- Interference check samples – for inductively coupled plasma analysis only to verify background and inter-element correction factors
- Internal standards – added after preparation or extraction of a sample to assess precision and accuracy of the analytical method
- Dilution test (for metals analysis) – used to determine if a chemical or physical interference effect (i.e., a matrix interferant) is suspected
- Post-spike (for metals analysis) – used to determine if a matrix effect is suspected
- Surrogates – surrogate spike recoveries are used to assess accuracy of laboratory methods and matrix interferences

The Field Quality Manager (FQM) conducted and documented inspections to ensure compliance. In addition to ensuring all components of the RA were performed in accordance with the project plans, applicable subcontractor scopes of work, and applicable regulations, the FQM reviewed and approved submittals, inspected material and equipment as they arrived onsite to ensure compliance with project plans and specifications, ensured testing was performed in accordance with the QAPP, inspected accumulation/stockpile/material storage areas, and documented quantities of material transported onsite and offsite. Detailed records of subcontractor activities were maintained in the field logbooks and other supporting forms of documentation as the work dictated. Changes encountered during the initial mobilizations in 2014 resulted in developing additional work planning documents (e.g., RAP Addendum, ESS, and ESS DR); therefore, no major variances or problems were encountered during field implementation of the RA that required a deviation from the work planning documents (CH2M, 2014b and 2015b).

In accordance with the ESS (CH2M, 2015a), all intrusive and MEC/MPPEH-related site activities conducted at the 2nd Street Disposal Area were overseen by UXO technicians providing construction support. The Unexploded Ordnance Quality Control Specialist (UXOQCS) was onsite to oversee the munitions-related QC operations at the site. The UXOQCS ensured the objectives of the munitions-related portions of the RA and QC elements of the ESS were achieved and the results of QC checks were documented. The UXOQCS performed QC inspections of the primary Definable Features of Work (DFOWs) in the ESS on a daily basis. The UXOQCS used the three-phase inspection system, consisting of preparatory, initial, and follow-up inspections for the applicable DFOWs. The UXOQCS ensured the QC inspection process for mechanically screened soil (i.e., verification screening per “lot” and blind seed process) were completed in accordance with the ESS. The QC process consisted of the following:

- The UXOQCS inspected the mechanically screened soil using an all-metals detector on 25 percent of each lot of screened material after it passed through the mechanical screen.
- Before it was loaded into the mechanical screen, the UXOQCS placed QC seeds (2-inch steel cube) in the excavated soil and ensured the QC seed did not come out of the less than 2-inch mechanical screen output; the QC seeds were labeled and tracked.
- The UXOQCS performed a QC check of each lot of excavated material (**Attachment H**); the QC check consisted of metal detection-aided sweeps of a minimum of 25 percent of the material from the less than 2-inch power-screen output and 100 percent inspection of the material greater than 2 inches in any dimension.
- Daily functional tests were performed on the metals detector to ensure it was working properly.

Detailed records of UXO-related activities were maintained in field logbooks and other supporting forms of documentation as the work dictated.

UXO-qualified personnel from NAVFAC Atlantic performed QA. A QA audit was conducted in October 2015 to confirm that activities complied with the ESS (CH2M, 2015a) and the contract’s scope of work, and to observe the UXOQCS QC lot inspection process. A NOSSA audit was conducted in October 2015 to inspect the onsite practices and facilities to determine if the work practices at the 2nd Street Disposal Area conformed to the work planning documents and that standard explosive safety measures were being followed. The project was found to be in compliance.

SECTION 4

Remedial Action Completion Summary

The RA, consisting of the excavation and offsite disposal of waste and impacted soil, was completed for approximately \$1.5 million. Demonstration of attainment of the RAOs is provided in **Table 3** as a comparison of the RAOs to the results of the RA. Based on the activities documented in this report, the project objectives for the TRDA RA outlined in the work planning documents (CH2M, 2014b and 2015b) were achieved.

The work was performed in accordance with applicable federal, state, and local regulations, codes, and standards. HPDTA representatives performed a final inspection of the area. The work was determined to be satisfactory and completed in accordance with the approved work planning documents (CH2M, 2014b and 2015b).

TABLE 3
Demonstration of Attainment of the RAOs

RAOs	RA Results
Limit direct exposure to waste and impacted soil.	<p>The RA resulted in the removal of waste and impacted soil from the site, thereby eliminating exposure.</p> <p>Waste removal was confirmed via visual inspection during excavation activities, DGM, and additional excavation to confirm the results of the DGM.</p> <p>Post-excavation confirmation samples were collected to confirm the extent of the excavation area had adequately addressed impacted soil. The results of the post-excavation confirmation sampling indicate the remaining exceedances of the PSRGs in soil (Figures 9 and 10) are not indicative of a release and therefore do not require additional excavation.</p>
Reduce the potential for contaminant migration from soil to groundwater and from the waste to soil and groundwater.	<p>The RA resulted in removing waste and impacted soil from the site, thereby eliminating the potential contaminant migration transport pathways from soil to groundwater and from the waste to soil and groundwater.</p>

SECTION 5

References

CH2M. 2014a. *Final Phase I Remedial Investigation Report, Towers Road Disposal Area, Harvey Point Defense Testing Activity, Hertford, North Carolina*. March.

CH2M. 2014b. *Final Interim Remedial Action Plan and Preconstruction Report, Towers Road Disposal Areas – Waste and Soil, Harvey Point Defense Testing Activity, Hertford, North Carolina*. April.

CH2M. 2014c. *Explosives Safety Submission Determination Request for Towers Road Disposal Areas 5th Street Disposal Area, Harvey Point Defense Training Activity, Hertford, North Carolina*. November.

CH2M. 2015a. *Explosives Safety Submission for Towers Road Disposal Areas 2nd Street Disposal Area, Harvey Point Defense Training Activity, Hertford, North Carolina*. September.

CH2M. 2015b. *Remedial Action Plan and Preconstruction Report Addendum, Towers Road Disposal Areas, Harvey Point Defense Testing Activity, Hertford, North Carolina*. October.

CH2M. 2016. *After Action Report for Tower Road Disposal Areas 2nd Street Disposal Area, Harvey Point Defense Testing Activity, Hertford, North Carolina*. February.

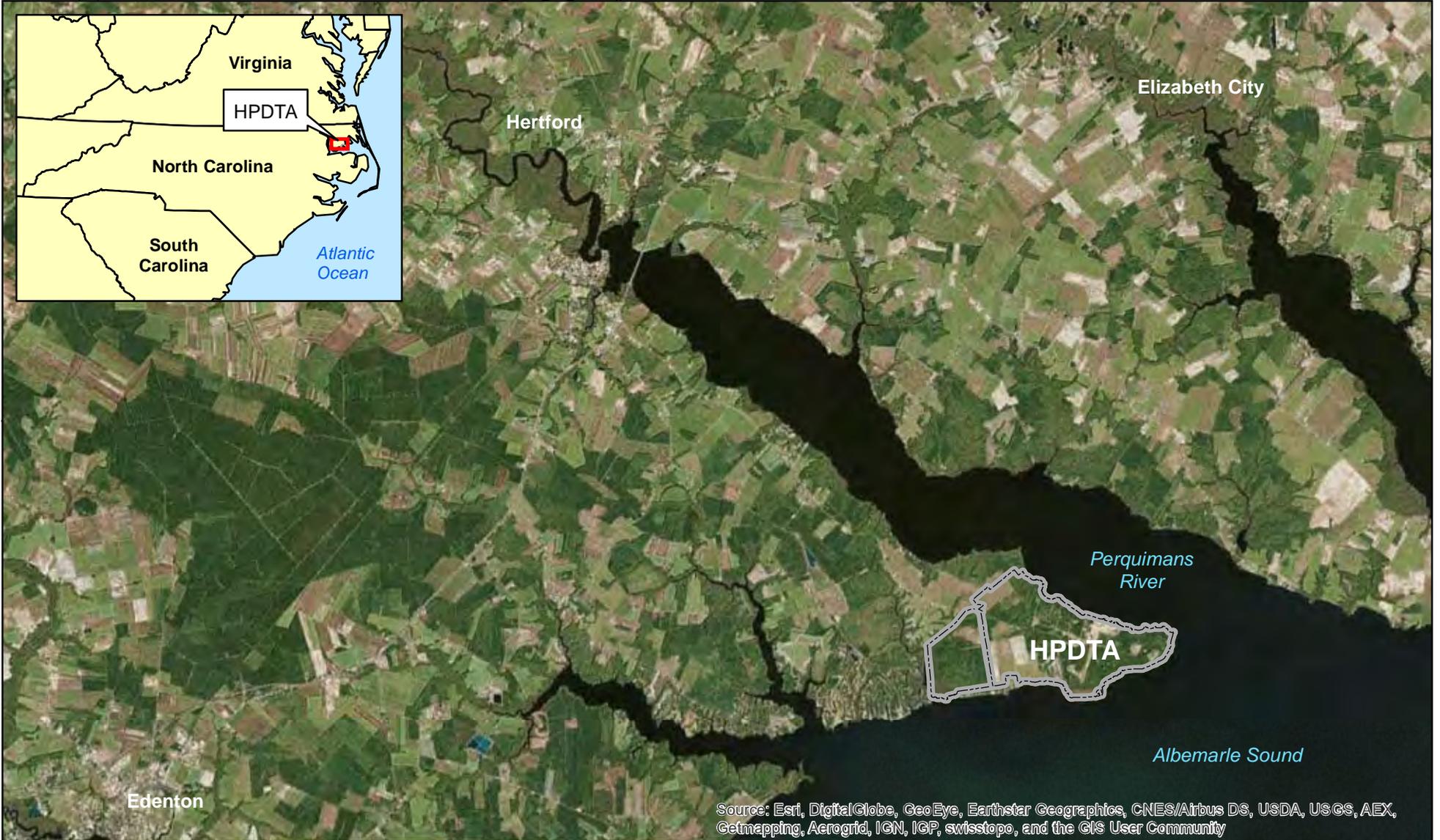
California Integrated Waste Management Board. 2007. *Converting from Volume to Weight*. http://dpw.lacounty.gov/epd/CD/cd_attachments/Volume_to_Weight.pdf. Accessed January 27, 2016.

NCDENR. 2013a. *Executed REC Administrative Agreement, Towers Road Disposal Area*. April.

NCDENR, NC Sedimentation Control Commission and NC Agricultural Extension Service. 2013b. *North Carolina Erosion and Sediment Control Planning and Design Manual*. May

NCDEQ. 2015. *Registered Environmental Consultant Program Implementation Guidance*. October.

Figures



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend
--- HPDTA Boundary



0 6,000 12,000
Feet

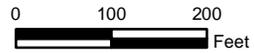
1 inch = 12,000 feet

Figure 1
HPDTA Location
TRDA RA Construction Completion/RA Completion Report
Harvey Point Defense Testing Activity
Hertford, North Carolina





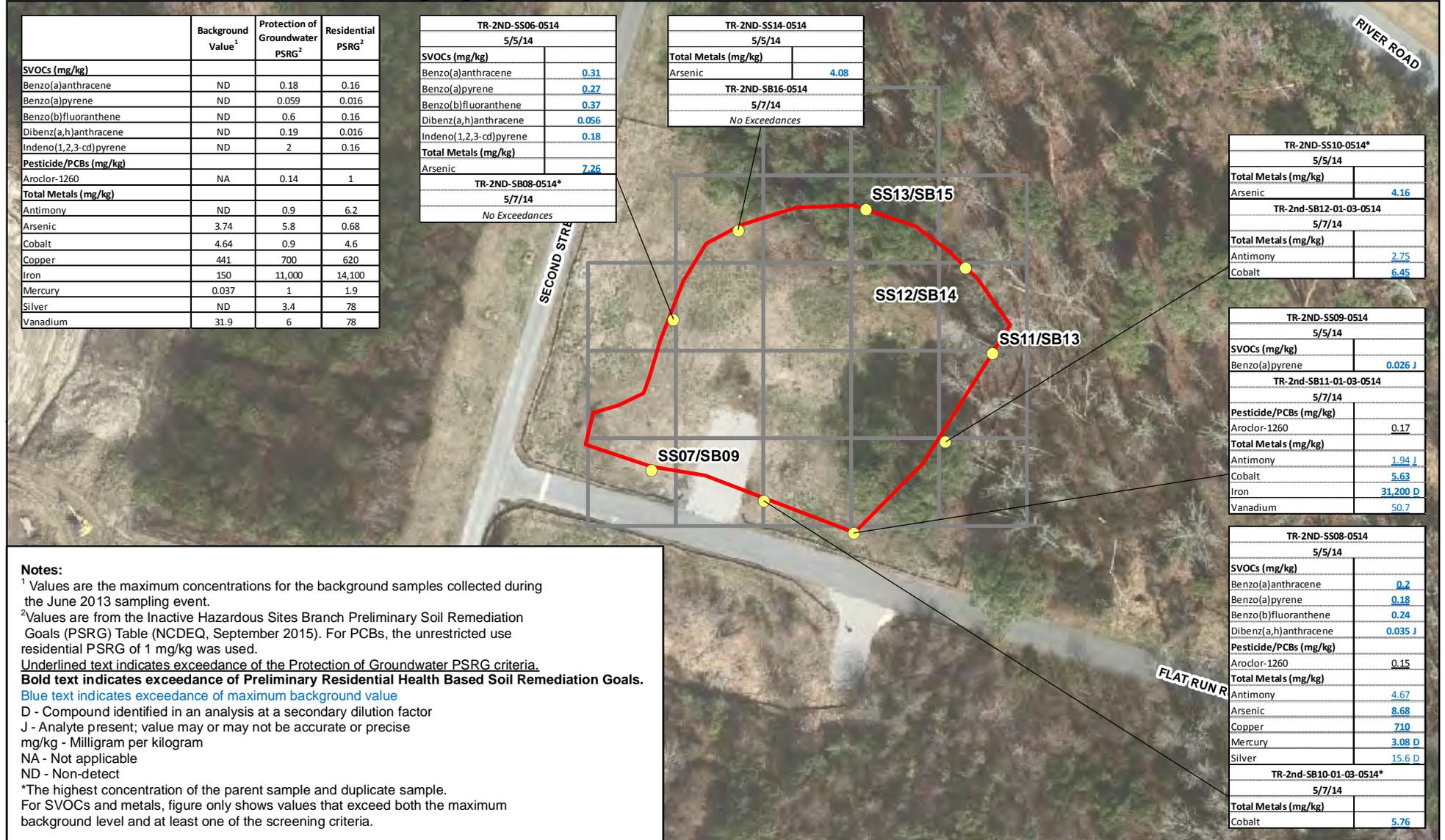
Legend
□ Investigation Area



1 inch = 200 feet

Figure 2
Site Location
TRDA RA Construction Completion/RA Completion Report
Harvey Point Defense Testing Activity
Hertford, North Carolina





Notes:
¹ Values are the maximum concentrations for the background samples collected during the June 2013 sampling event.
² Values are from the Inactive Hazardous Sites Branch Preliminary Soil Remediation Goals (PSRG) Table (NCDEQ, September 2015). For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used.
Underlined text indicates exceedance of the Protection of Groundwater PSRG criteria.
Bold text indicates exceedance of Preliminary Residential Health Based Soil Remediation Goals.
Blue text indicates exceedance of maximum background value
D - Compound identified in an analysis at a secondary dilution factor
J - Analyte present; value may or may not be accurate or precise
mg/kg - Milligram per kilogram
NA - Not applicable
ND - Non-detect
*The highest concentration of the parent sample and duplicate sample.
For SVOCs and metals, figure only shows values that exceed both the maximum background level and at least one of the screening criteria.

- Legend**
- Surface/Subsurface Soil Sample Locations
 - 50' Grid
 - ▭ Estimated Extent of Waste and Impacted Soil (Phase I RI)

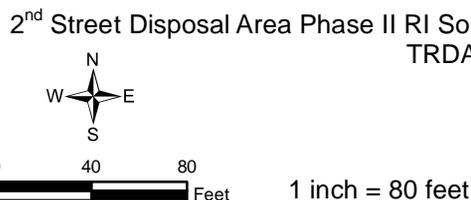
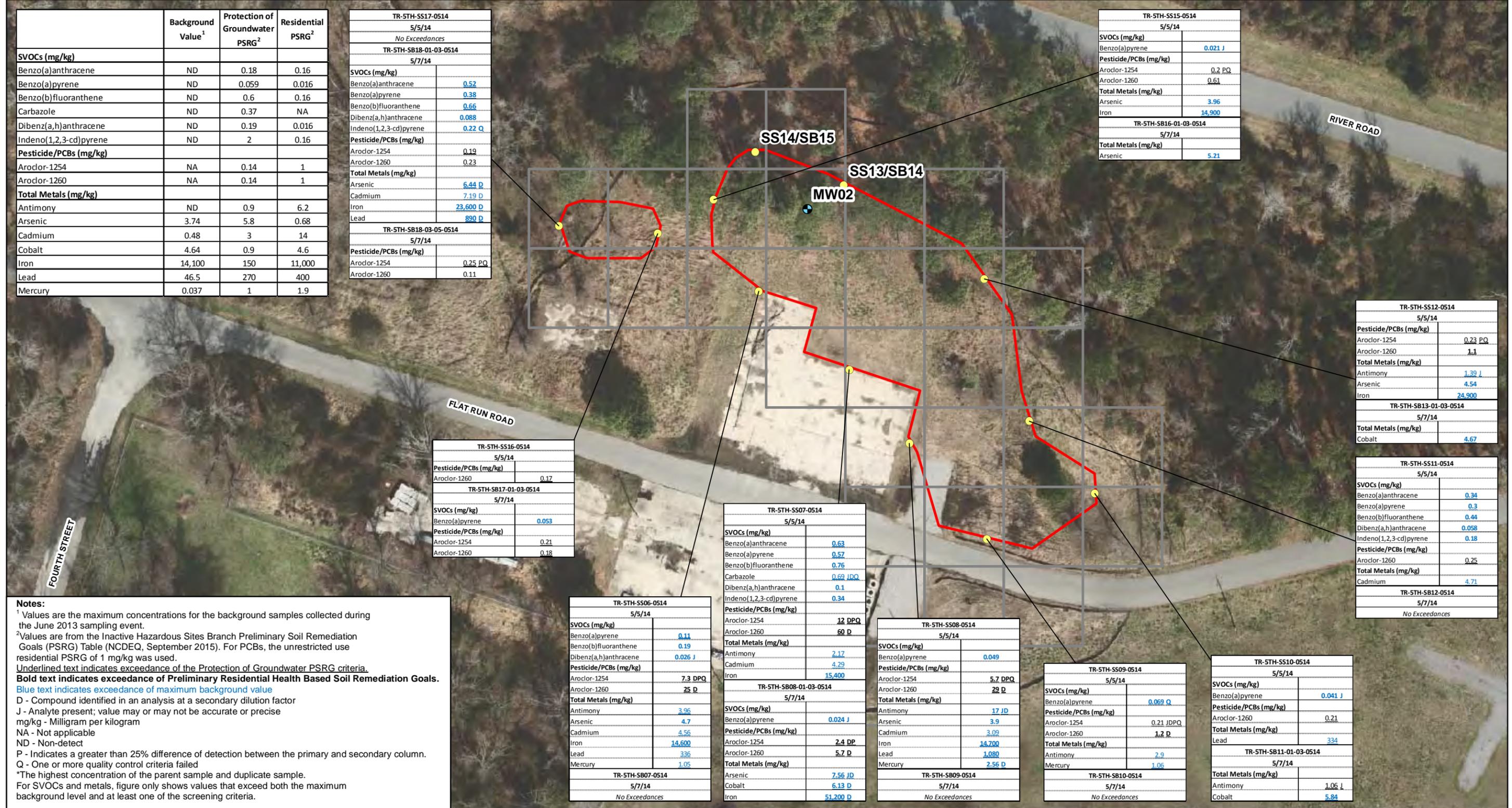


Figure 3



	Background Value ¹	Protection of Groundwater PSRG ²	Residential PSRG ²
SVOCs (mg/kg)			
Benzo(a)anthracene	ND	0.18	0.16
Benzo(a)pyrene	ND	0.059	0.016
Benzo(b)fluoranthene	ND	0.6	0.16
Carbazole	ND	0.37	NA
Dibenz(a,h)anthracene	ND	0.19	0.016
Indeno(1,2,3-cd)pyrene	ND	2	0.16
Pesticide/PCBs (mg/kg)			
Aroclor-1254	NA	0.14	1
Aroclor-1260	NA	0.14	1
Total Metals (mg/kg)			
Antimony	ND	0.9	6.2
Arsenic	3.74	5.8	0.68
Cadmium	0.48	3	14
Cobalt	4.64	0.9	4.6
Iron	14,100	150	11,000
Lead	46.5	270	400
Mercury	0.037	1	1.9

TR-5TH-SS17-0514	
5/5/14	
No Exceedances	
TR-5TH-SB18-01-03-0514	
5/7/14	
SVOCs (mg/kg)	
Benzo(a)anthracene	0.52
Benzo(a)pyrene	0.38
Benzo(b)fluoranthene	0.66
Dibenz(a,h)anthracene	0.088
Indeno(1,2,3-cd)pyrene	0.22 Q
Pesticide/PCBs (mg/kg)	
Aroclor-1254	0.19
Aroclor-1260	0.23
Total Metals (mg/kg)	
Arsenic	6.44 D
Cadmium	7.19 D
Iron	23,600 D
Lead	890 D
TR-5TH-SB18-03-05-0514	
5/7/14	
Pesticide/PCBs (mg/kg)	
Aroclor-1254	0.25 PQ
Aroclor-1260	0.11

TR-5TH-SS15-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.021 J
Pesticide/PCBs (mg/kg)	
Aroclor-1254	0.2 PQ
Aroclor-1260	0.61
Total Metals (mg/kg)	
Arsenic	3.96
Iron	14,900
TR-5TH-SB16-01-03-0514	
5/7/14	
Total Metals (mg/kg)	
Arsenic	5.21

TR-5TH-SS16-0514	
5/5/14	
Pesticide/PCBs (mg/kg)	
Aroclor-1260	0.17
TR-5TH-SB17-01-03-0514	
5/7/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.053
Pesticide/PCBs (mg/kg)	
Aroclor-1254	0.21
Aroclor-1260	0.18

TR-5TH-SS07-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)anthracene	0.63
Benzo(a)pyrene	0.57
Benzo(b)fluoranthene	0.76
Carbazole	0.69 JDQ
Dibenz(a,h)anthracene	0.1
Indeno(1,2,3-cd)pyrene	0.34
Pesticide/PCBs (mg/kg)	
Aroclor-1254	12 DPQ
Aroclor-1260	60 D
Total Metals (mg/kg)	
Antimony	2.17
Cadmium	4.29
Iron	15,400
TR-5TH-SB08-01-03-0514	
5/7/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.024 J
Pesticide/PCBs (mg/kg)	
Aroclor-1254	2.4 DP
Aroclor-1260	5.7 D
Total Metals (mg/kg)	
Arsenic	7.56 JD
Cobalt	6.13 D
Iron	51,200 D

TR-5TH-SS06-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.11
Benzo(b)fluoranthene	0.19
Dibenz(a,h)anthracene	0.026 J
Pesticide/PCBs (mg/kg)	
Aroclor-1254	7.3 DPQ
Aroclor-1260	25 D
Total Metals (mg/kg)	
Antimony	3.96
Arsenic	4.7
Cadmium	4.56
Iron	14,600
Lead	336
Mercury	1.05
TR-5TH-SB07-0514	
5/7/14	
No Exceedances	

TR-5TH-SS08-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.049
Pesticide/PCBs (mg/kg)	
Aroclor-1254	5.7 DPQ
Aroclor-1260	29 D
Total Metals (mg/kg)	
Antimony	17 JD
Arsenic	3.9
Cadmium	3.09
Iron	14,700
Lead	1,080
Mercury	2.56 D
TR-5TH-SB09-0514	
5/7/14	
No Exceedances	

TR-5TH-SS09-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.069 Q
Pesticide/PCBs (mg/kg)	
Aroclor-1254	0.21 JDPQ
Aroclor-1260	1.2 D
Total Metals (mg/kg)	
Antimony	2.9
Mercury	1.06
TR-5TH-SB10-0514	
5/7/14	
No Exceedances	

TR-5TH-SS10-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)pyrene	0.041 J
Pesticide/PCBs (mg/kg)	
Aroclor-1260	0.21
Total Metals (mg/kg)	
Lead	334
TR-5TH-SB11-01-03-0514	
5/7/14	
Total Metals (mg/kg)	
Antimony	1.06 J
Cobalt	5.84

TR-5TH-SS12-0514	
5/5/14	
Pesticide/PCBs (mg/kg)	
Aroclor-1254	0.23 PQ
Aroclor-1260	1.1
Total Metals (mg/kg)	
Antimony	1.39 J
Arsenic	4.54
Iron	24,900
TR-5TH-SB13-01-03-0514	
5/7/14	
Total Metals (mg/kg)	
Cobalt	4.67

TR-5TH-SS11-0514	
5/5/14	
SVOCs (mg/kg)	
Benzo(a)anthracene	0.34
Benzo(a)pyrene	0.3
Benzo(b)fluoranthene	0.44
Dibenz(a,h)anthracene	0.058
Indeno(1,2,3-cd)pyrene	0.18
Pesticide/PCBs (mg/kg)	
Aroclor-1260	0.25
Total Metals (mg/kg)	
Cadmium	4.71
TR-5TH-SB12-0514	
5/7/14	
No Exceedances	

Notes:
¹ Values are the maximum concentrations for the background samples collected during the June 2013 sampling event.
² Values are from the Inactive Hazardous Sites Branch Preliminary Soil Remediation Goals (PSRG) Table (NCDEQ, September 2015). For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used.
Underlined text indicates exceedance of the Protection of Groundwater PSRG criteria.
Bold text indicates exceedance of Preliminary Residential Health Based Soil Remediation Goals.
 Blue text indicates exceedance of maximum background value
 D - Compound identified in an analysis at a secondary dilution factor
 J - Analyte present; value may or may not be accurate or precise
 mg/kg - Milligram per kilogram
 NA - Not applicable
 ND - Non-detect
 P - Indicates a greater than 25% difference of detection between the primary and secondary column.
 Q - One or more quality control criteria failed
 *The highest concentration of the parent sample and duplicate sample.
 For SVOCs and metals, figure only shows values that exceed both the maximum background level and at least one of the screening criteria.

- Legend**
- Monitoring Well Location
 - Surface/Subsurface Soil Sample Locations
 - ▭ Estimated Extent of Waste and Impacted Soil (Phase I RI)
 - ▭ 50' Grid

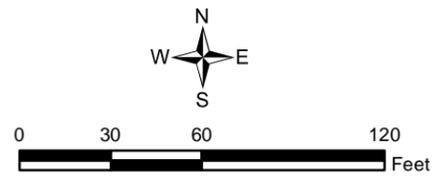
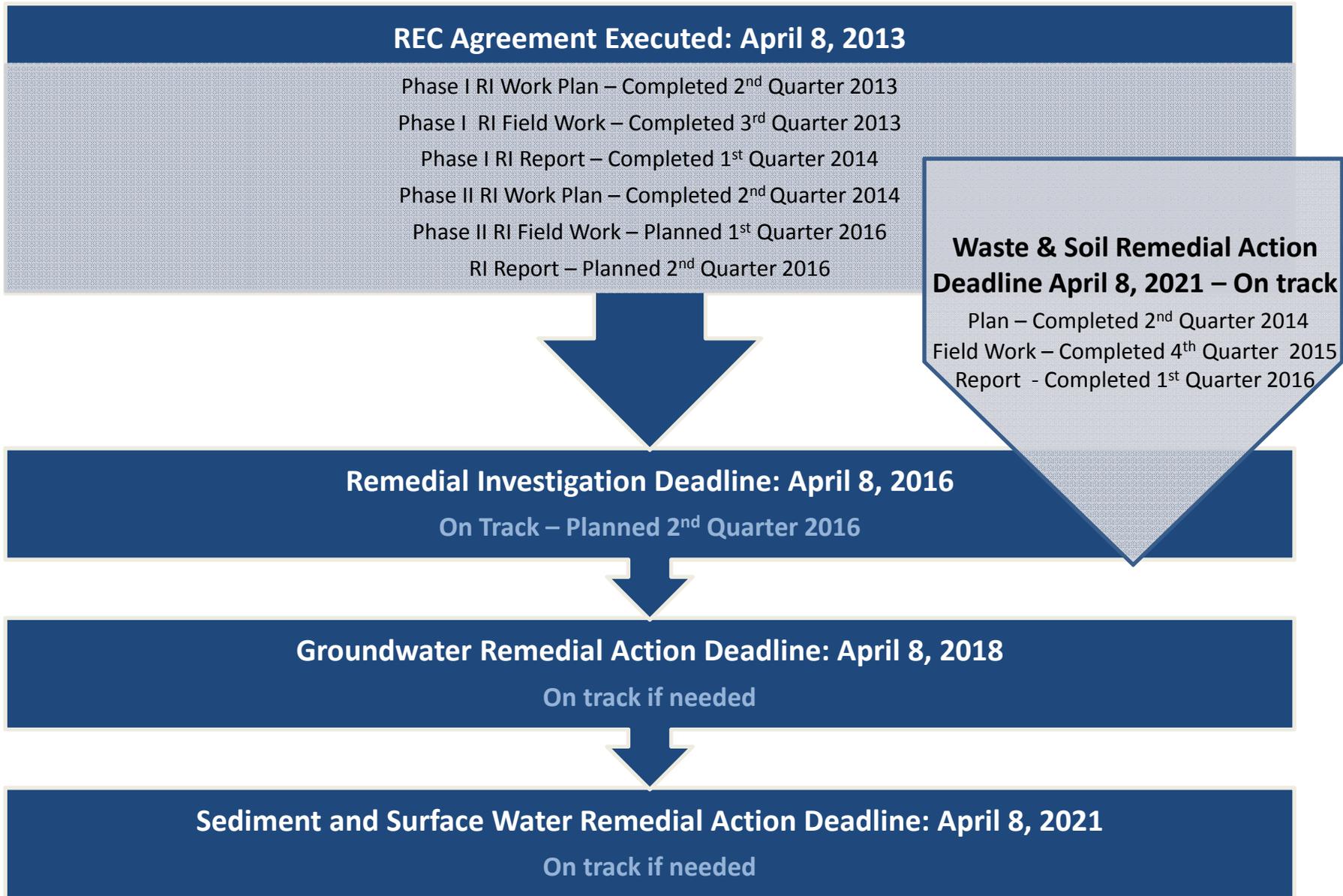


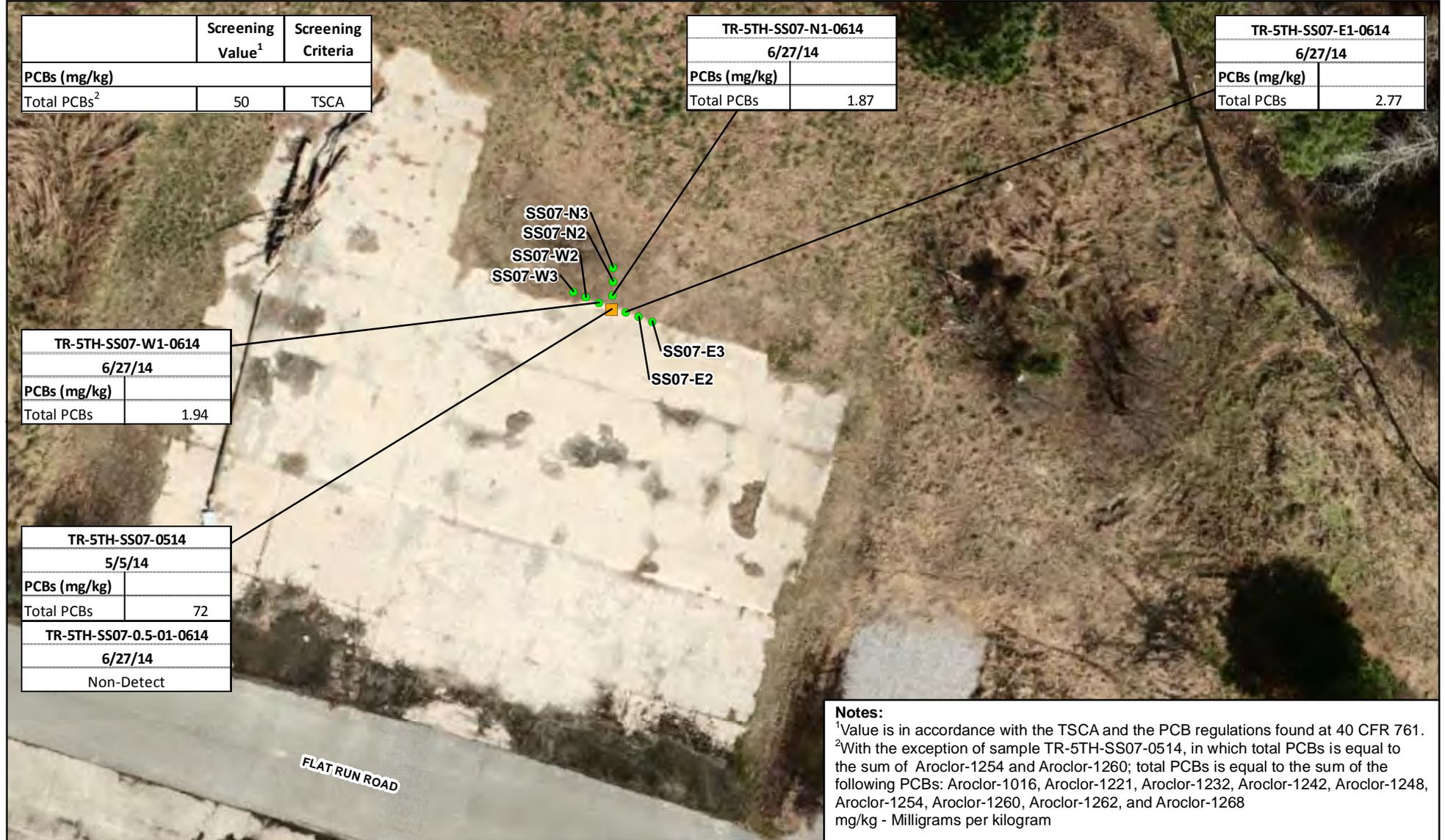
Figure 4
 5th Street Disposal Area Phase II RI Soil Delineation Analytical Results - Exceedances Only
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina



Notes:

Quarters reflect calendar year quarters (e.g., first quarter is January through March)
 Quarterly reports must be submitted on or before the 15th day of January, April, July,
 and October of each year.

Figure 5
TRDA REC Program Milestones Timeline
TRDA RA Construction Completion/RA Completion Report
Harvey Point Defense Testing Activity
Hertford, North Carolina



Legend

- PCB Delineation Sample Location
- RI Sample Location



1 inch = 25 feet

Figure 6
 5th Street Disposal Area PCB Delineation Analytical Results
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

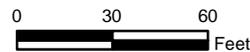




MEC/MPPEH Magazine, 55-gallon Drums for Storing MDAS, and Underground Utility (8" Cast Iron Pipe)

Legend

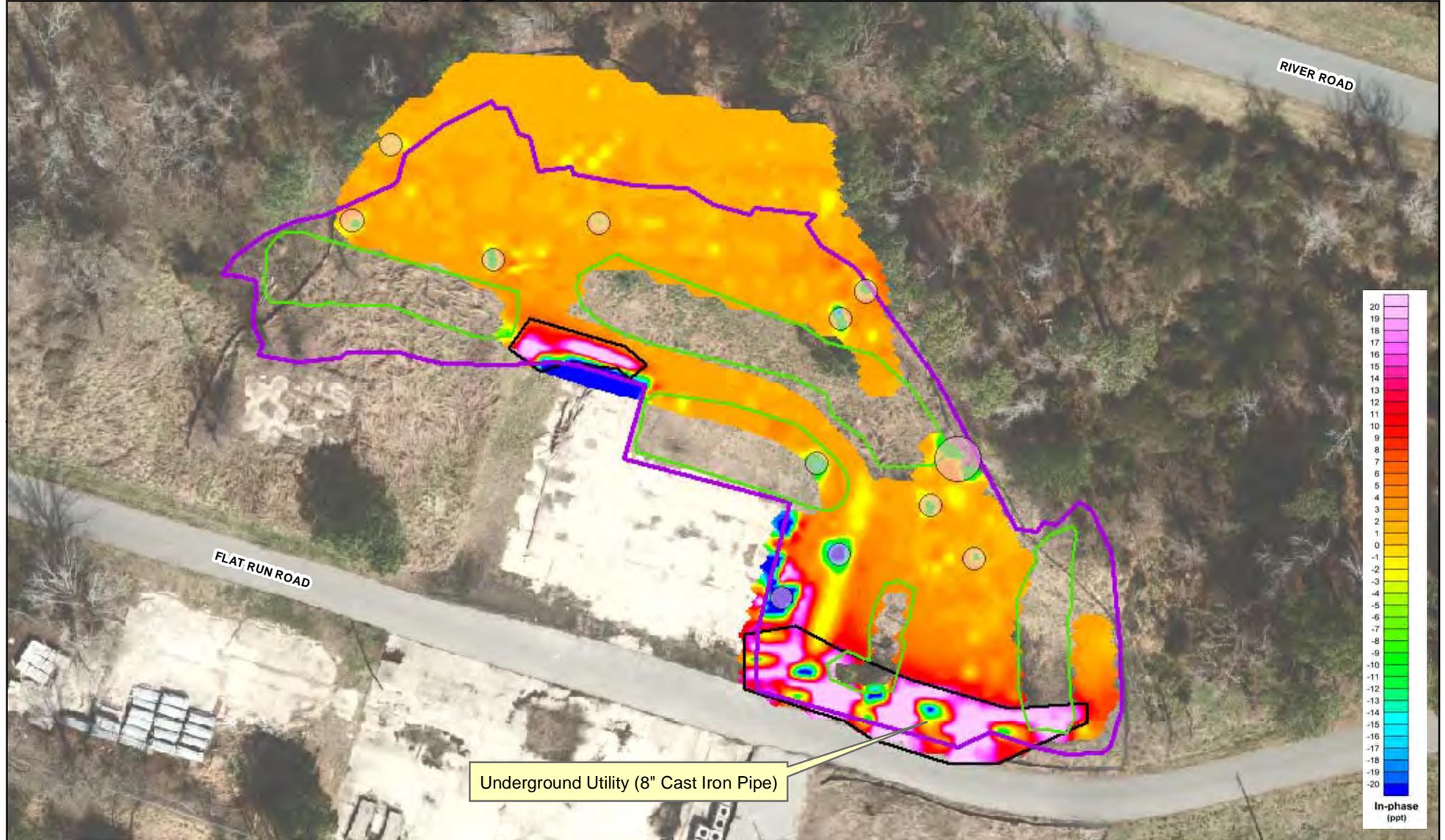
- Excavation Extent
- Geophysical Anomaly of Interest (NAEVA)
- Trench



1 inch = 60 feet

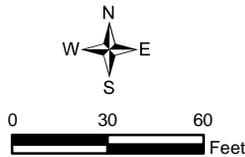
Figure 7
2nd Street Disposal Area EM31 In-phase Results
TRDA RA Construction Completion/RA Completion Report
Harvey Point Defense Testing Activity
Hertford, North Carolina





Legend

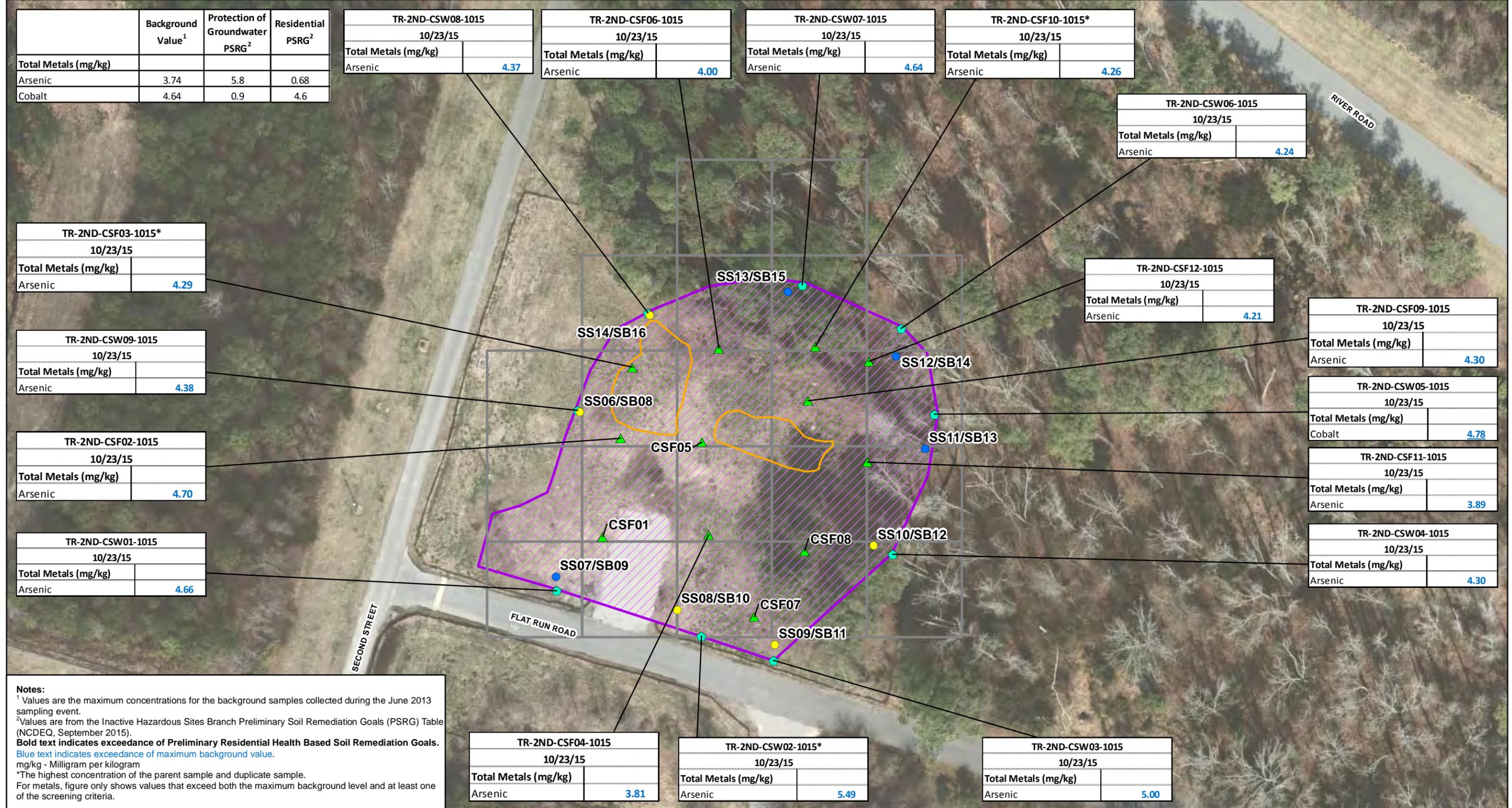
-  Excavation Extent
-  Trench
-  Geophysical Anomaly of Interest (NAEVA)
-  Geophysical Anomaly of Interest (CH2M)



1 inch = 60 feet

Figure 8
5th Street Disposal Area EM31 In-phase Results
TRDA RA Construction Completion/RA Completion Report
Harvey Point Defense Testing Activity
Hertford, North Carolina





Notes:
¹ Values are the maximum concentrations for the background samples collected during the June 2013 sampling event.
² Values are from the Inactive Hazardous Sites Branch Preliminary Soil Remediation Goals (PSRG) Table (NCDEQ, September 2015).
Blue text indicates exceedance of Preliminary Residential Health Based Soil Remediation Goals.
 Blue text indicates exceedance of maximum background value.
 mg/kg - Milligram per kilogram
 *The highest concentration of the parent sample and duplicate sample.
 For metals, figure only shows values that exceed both the maximum background level and at least one of the screening criteria.

- Legend**
- Delineation Sample Location (Phase II RI) - Exceedances
 - Delineation Sample Location (Phase II RI) - No Exceedances
 - ▲ Floor Confirmation Sample Location
 - ◆ Wall Confirmation Sample Location
 - 50' Grid
 - ▨ Excavation Extent
 - ▭ Trench

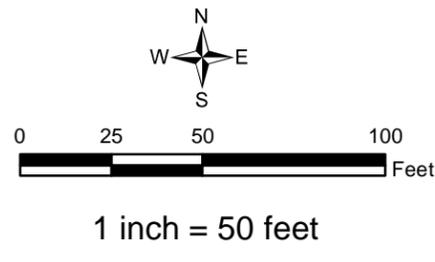
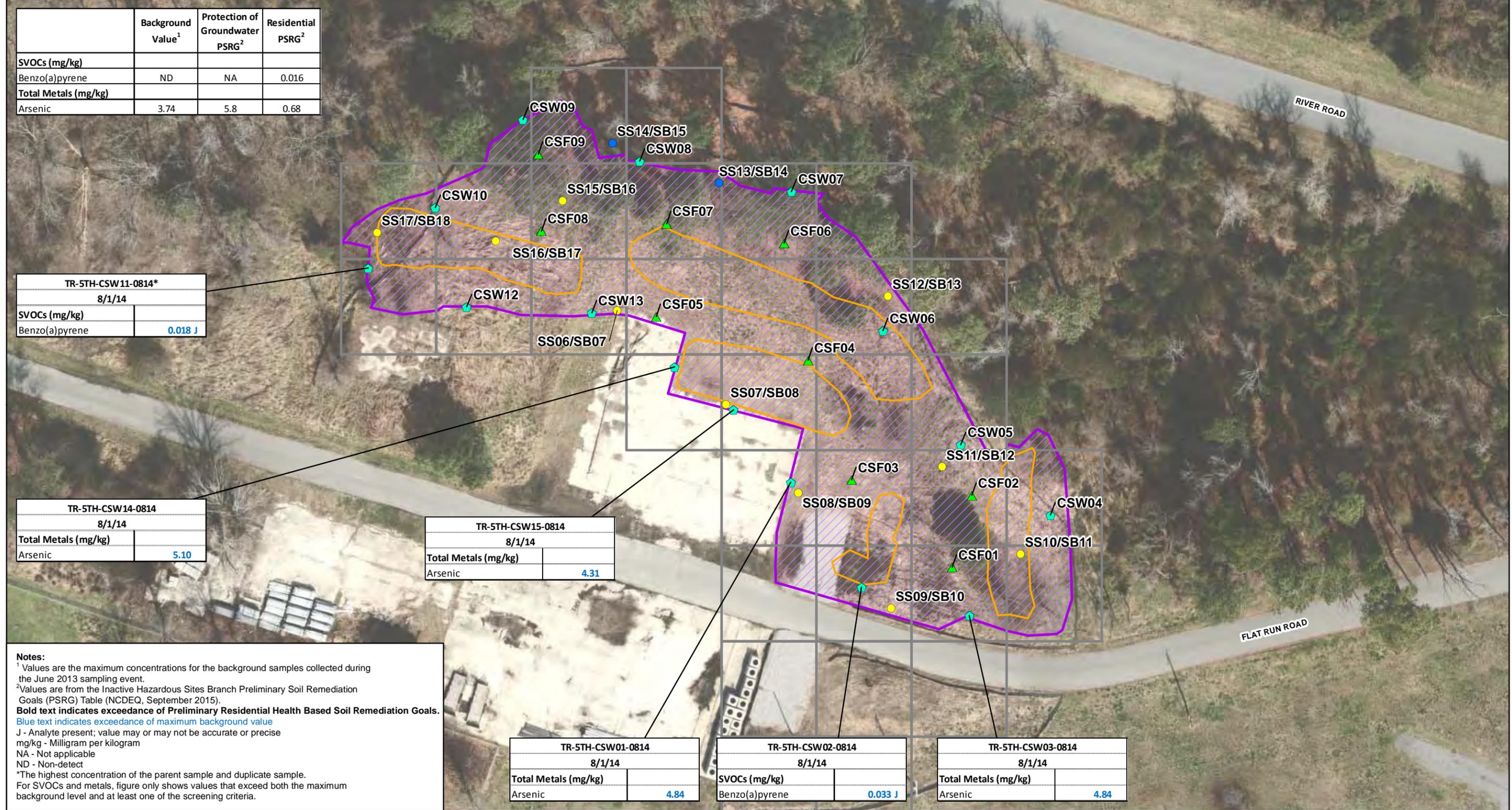


Figure 9
 2nd Street Disposal Area Soil Confirmation Sampling Analytical Results – Exceedances Only
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina



Legend

- Delineation Sample Location (Phase II RI) - Exceedances
- Delineation Sample Location (Phase II RI) - No Exceedances
- ▲ Floor Confirmation Sample Location
- ◆ Wall Confirmation Sample Location
- 50' Grid
- ▨ Excavation Extent
- ▩ Trench

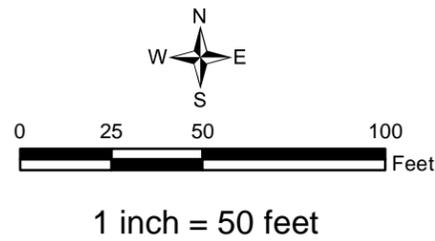


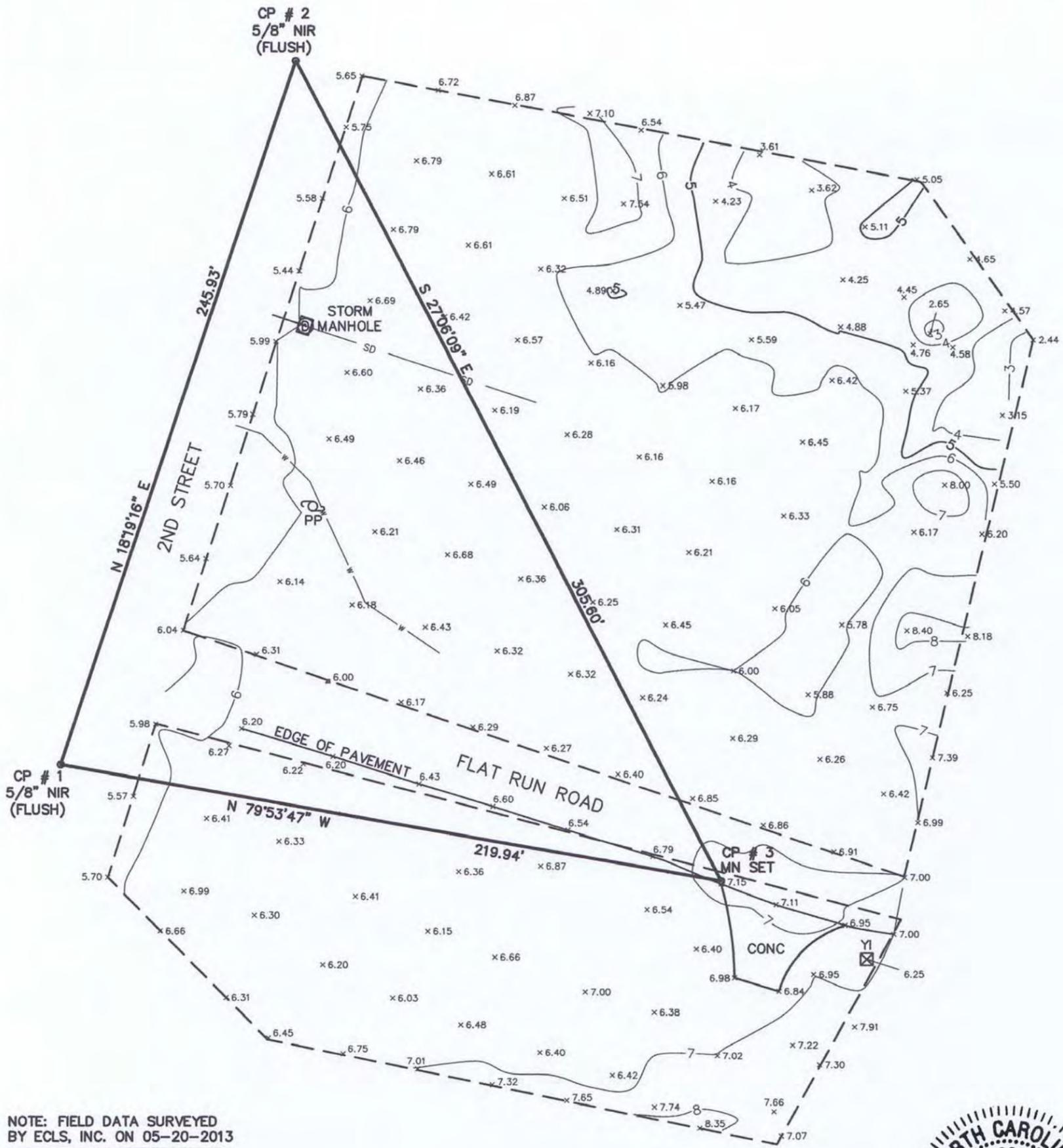
Figure 10
 5th Street Disposal Area Soil Confirmation Sampling Analytical Results – Exceedances Only
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Attachment A
Topographic Surveys

Attachment A1
2nd Street Disposal Area Pre-Excavation
Topographic Survey

CONTROL USED	ELEV.	NORTHING	EASTING
	(ft msl)		
PT1: NIR	5.68	867,423.77	2,786,929.89
PT2: NIR	5.53	867,657.23	2,787,007.19
PT3: MN	7.15	867,385.19	2,787,146.42
PT4: MN	7.07	867,016.56	2,788,245.70
PT5: NIR	7.08	866,875.50	2,788,327.84
PT6: MN	7.22	866,928.54	2,788,560.70

NC GRID (NAD83)

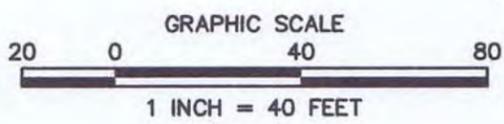


NOTE: FIELD DATA SURVEYED BY ECLS, INC. ON 05-20-2013

LEGEND	
---	= TOPO LIMIT
SD	= STORM LINE
W	= WATER LINE
X	= SPOT ELEVATION
○	NIR = NEW IRON ROD
○	MN = MAG NAIL
YI	= YARD INLET
PP	= POWER POLE
DATUM	
NC GRID (NAD 83) NC GRID (NAVD 88)	



6.4.13



ECLS	PROJ. NO.: CTO-0020
	FILENAME: CH2MHILL
	DRAWN BY: DWS
	SCALE: 1"=40'
	DATE: 06-04-2013

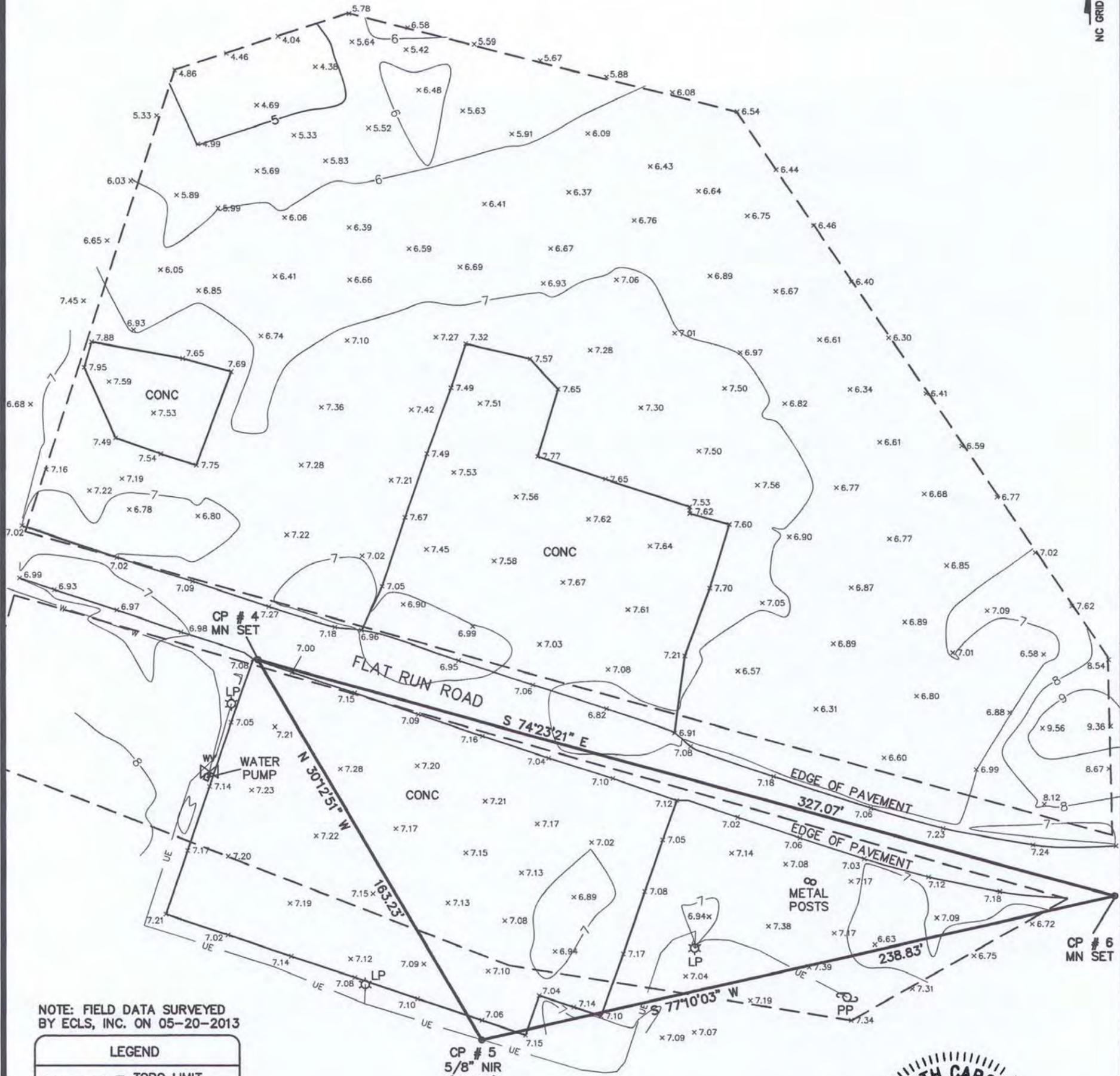
TOPOGRAPHICAL SURVEY
CONTRACT N62470-10-D-3009, CTO 20
TOWERS ROAD DISPOSAL AREAS
HERTFORD, NC

ECLS
 SURVEYING THE EAST COAST
 227 FISH DRIVE
 ANGBIER, NC 27501
 910.897.3257
 910.897.2328 FAX

Attachment A2
5th Street Disposal Area Pre-Excavation
Topographic Survey

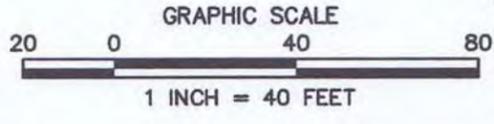
CONTROL USED	ELEV.	NORTHING	EASTING
	(ft msl)		
PT1: NIR	5.68	867,423.77	2,786,929.89
PT2: NIR	5.53	867,657.23	2,787,007.19
PT3: MN	7.15	867,385.19	2,787,146.42
PT4: MN	7.07	867,016.56	2,788,245.70
PT5: NIR	7.08	866,875.50	2,788,327.84
PT6: MN	7.22	866,928.54	2,788,560.70

NC GRID (NAD83)



NOTE: FIELD DATA SURVEYED BY ECLS, INC. ON 05-20-2013

LEGEND	
---	= TOPO LIMIT
---UE---	= UNDERGROUND ELECTRIC
---W---	= WATER LINE
X	= SPOT ELEVATION
○	= NIR = NEW IRON ROD
○	= MN = MAG NAIL
LP	= LIGHT POLE
PP	= POWER POLE
⊗	= WATER VALVE
DATUM	
NC GRID (NAD 83)	
NC GRID (NAVD 88)	



0.4.13

ECLS	PROJ. NO.: CTO-0020
	FILENAME: CH2MHILL
	DRAWN BY: DWS
	SCALE: 1"=40'
	DATE: 06-04-2013

TOPOGRAPHICAL SURVEY
CONTRACT N62470-10-D-3009, CTO 20
TOWERS ROAD DISPOSAL AREAS
HERTFORD, NC

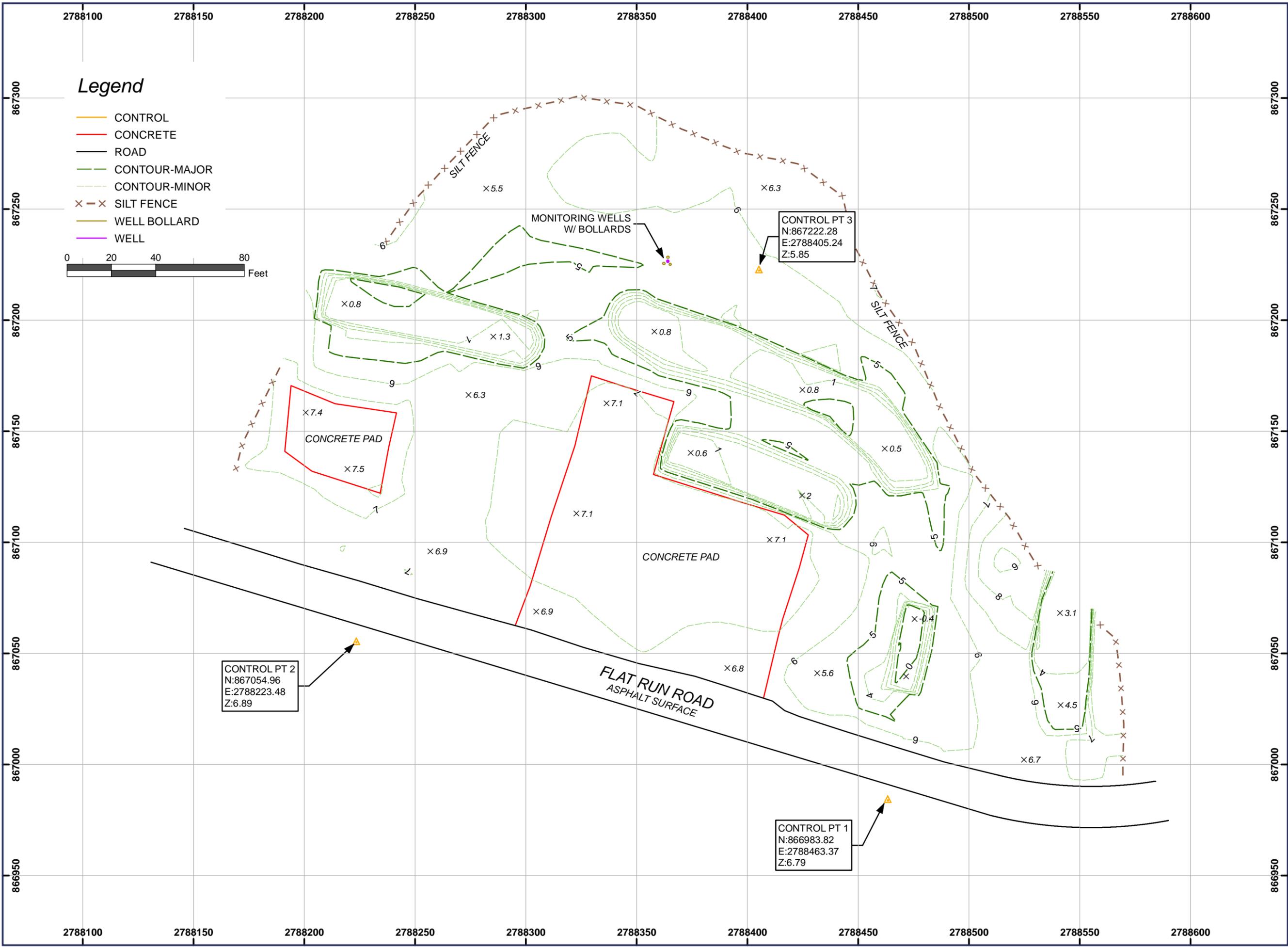
ECLS

SURVEYING THE EAST COAST

227 FISH DRIVE
 ANGIER, NC 27501
 910.897.3257
 910.897.2328 FAX

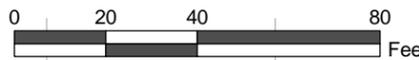
Attachment A3
2nd Street Disposal Area Post-Excavation
Topographic Survey

Attachment A4
5th Street Disposal Area Post-Excavation
Topographic Survey



Legend

- CONTROL
- CONCRETE
- ROAD
- CONTOUR-MAJOR
- CONTOUR-MINOR
- x-x- SILT FENCE
- WELL BOLLARD
- WELL



"I, Seth F. Martin, certify that this project was completed under my direct and responsible charge from an actual ground survey made under my supervision; that the original data was obtained between October 14-15, 2015; and all coordinates are based on NC State Plane, NAD83"



LDSI, Inc.
 508 West 5th Street
 Charlotte, NC 28202
 (704) 337-8329
 www.ldsi-inc.com

SCALE: 1 in = 40 ft
 DATUM: NC State Plane, NAD83
 VERTICAL DATUM: NAVD88
 PROJECT NO: 4115140
 MAP BY: bellott
 DATE: 1/13/2016-PAGE 1 OF 1

TRDA (5th Street Disposal Area)

TOPOGRAPHIC SURVEY

HPDTA

PERQUIMANS COUNTY, NC

Client: CH2M Hill

Path: G:\4115140\GIS\Maps\11x175140\Exhibit.mxd



CONTROL PT 2
 N:867054.96
 E:2788223.48
 Z:6.89

CONTROL PT 1
 N:866983.82
 E:2788463.37
 Z:6.79

CONTROL PT 3
 N:867222.28
 E:2788405.24
 Z:5.85

MONITORING WELLS
 W/ BOLLARDS

CONCRETE PAD

CONCRETE PAD

CONCRETE PAD

FLAT RUN ROAD
 ASPHALT SURFACE

Attachment B
Analytical Data

Attachment B1
Phase II RI Surface Soil Data – 2nd Street
Disposal Area

TABLE B-1a

Phase II RI Surface Soil Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2nd-SS06-0514	TR-2nd-SS07-0514	TR-2nd-SS08-0514	TR-2nd-SS09-0514	TR-2nd-SS10-0514	TR-2nd-SS10D-0514	TR-2nd-SS11-0514	TR-2nd-SS12-0514	TR-2nd-SS13-0514	TR-2nd-SS14-0514
Sample Date	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14
Chemical Name										
Semivolatile Organic Compounds (MG/KG)										
2-Methylnaphthalene	0.034 U	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Acenaphthene	0.034 U	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Acenaphthylene	0.034 U	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Anthracene	0.064	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(a)anthracene	0.31	0.023 J	0.2	0.056	0.04 J	0.032 J	0.037 U	0.036 U	0.036 U	0.033 J
Benzo(a)pyrene	0.27	0.029 U	0.18	0.026 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(b)fluoranthene	0.37	0.029 U	0.24	0.041 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(g,h,i)perylene	0.21	0.029 U	0.13	0.023 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(k)fluoranthene	0.15	0.029 U	0.087	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Chrysene	0.29	0.029 U	0.2	0.028 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Dibenz(a,h)anthracene	0.056	0.029 U	0.035 J	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Fluoranthene	0.5	0.029 U	0.21	0.061	0.032 J	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Fluorene	0.023 J	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Indeno(1,2,3-cd)pyrene	0.18	0.029 U	0.1	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Naphthalene	0.034 U	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Phenanthrene	0.25	0.029 U	0.045	0.026 J	0.023 J	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Pyrene	0.41	0.029 U	0.2	0.049	0.026 J	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	0.025 U	0.021 U	0.044 JPQ	0.026 U	0.029 U	0.029 U	0.027 U	0.027 U	0.027 U	0.026 U
Aroclor-1260	0.029 J	0.021 U	0.15	0.026 U	0.029 U	0.023 J	0.027 U	0.027 U	0.027 U	0.026 U
Total Metals (MG/KG)										
Antimony	0.674 J	0.852 U	4.67	0.381 J	1.16 U	1.18 U	1.08 U	1.06 U	1.08 U	0.381 J
Arsenic	7.26	2.19 J	8.68	1.93 J	4.16	3.5	2.04 J	2.09 J	3.3	4.08
Barium	63.8	51.8	195	61.2	125	101	41.5	66.6	104	69
Cadmium	0.339	0.152 U	2.93	0.229 J	0.0528 J	0.119 J	0.139 J	0.076 J	0.0341 J	0.37
Chromium	21.1	18.5	28.8	16.6	37.7	30.1	10.8	20.8	37.2	23
Cobalt	2.76	3.74	3.53	2.19	3.73	3.35	2.31	2.76	3.77	3.63
Copper	27.1	6.84	710	18.8	8.79	7.49	4.34	8.05	7.23	23.8
Iron	7,360	9,700	11,500	6,600	13,900	11,300	4,440	6,990	13,900	9,810
Lead	27.7	3.68	164	20.8	14.4	14.3	8.72	8.57	10.7	26.3
Mercury	0.837	0.0139 J	3.08 D	0.27	0.488	0.403	0.188	0.185	0.101	0.216
Nickel	8.25	9.92	23.3	5.51	16.4	13.4	5.07	10	14	11
Silver	0.653 Q	0.234 U	15.6 D	0.365 J	0.318 U	0.324 U	0.298 U	0.293 U	0.297 U	1.03
Zinc	70.4	28	561	39.4	51.9	46.2	22	21.2	28.2	64.4

Notes:

D - Compound identified in an analysis at a secondary dilution factor.

J - Analyte present. Value may or may not be accurate or precise

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

MG/KG - Milligram per kilogram

Q - One or more QC criteria outside acceptance limits

U - The material was analyzed for, but not detected

TABLE B-1b

Phase II RI Surface Soil Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2nd-SS06-0514 5/5/14	TR-2nd-SS07-0514 5/5/14	TR-2nd-SS08-0514 5/5/14	TR-2nd-SS09-0514 5/5/14	TR-2nd-SS10-0514 5/5/14	TR-2nd-SS10D-0514 5/5/14	TR-2nd-SS11-0514 5/5/14	TR-2nd-SS12-0514 5/5/14	TR-2nd-SS13-0514 5/5/14	TR-2nd-SS14-0514 5/5/14
Chemical Name													
Semivolatile Organic Compounds (MG/KG)													
Anthracene	660	3,600	ND	0.064	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(a)anthracene	0.18	0.16	ND	0.31	0.023 J	0.2	0.056	0.04 J	0.032 J	0.037 U	0.036 U	0.036 U	0.033 J
Benzo(a)pyrene	0.059	0.016	ND	0.27	0.029 U	0.18	0.026 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(b)fluoranthene	0.6	0.16	ND	0.37	0.029 U	0.24	0.041 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(g,h,i)perylene	7,800	--	ND	0.21	0.029 U	0.13	0.023 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Benzo(k)fluoranthene	5.9	1.6	ND	0.15	0.029 U	0.087	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Chrysene	18	16	ND	0.29	0.029 U	0.2	0.028 J	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Dibenz(a,h)anthracene	0.19	0.016	ND	0.056	0.029 U	0.035 J	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Fluoranthene	330	480	ND	0.5	0.029 U	0.21	0.061	0.032 J	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Fluorene	56	480	ND	0.023 J	0.029 U	0.034 U	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Indeno(1,2,3-cd)pyrene	2	0.16	ND	0.18	0.029 U	0.1	0.035 U	0.039 U	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Phenanthrene	68	--	ND	0.25	0.029 U	0.045	0.026 J	0.023 J	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Pyrene	220	360	ND	0.41	0.029 U	0.2	0.049	0.026 J	0.04 U	0.037 U	0.036 U	0.036 U	0.035 U
Pesticide/Polychlorinated Biphenyls (MG/KG)													
Aroclor-1254	0.14	1*	--	0.025 U	0.021 U	0.044 JPQ	0.026 U	0.029 U	0.029 U	0.027 U	0.027 U	0.027 U	0.026 U
Aroclor-1260	0.14	1*	--	0.029 J	0.021 U	0.15	0.026 U	0.029 U	0.023 J	0.027 U	0.027 U	0.027 U	0.026 U
Total Metals (MG/KG)													
Antimony	0.9	6.2	ND	0.674 J	0.852 U	4.67	0.381 J	1.16 U	1.18 U	1.08 U	1.06 U	1.08 U	0.381 J
Arsenic	5.8	0.68	3.74	7.26	2.19 J	8.68	1.93 J	4.16	3.5	2.04 J	2.09 J	3.3	4.08
Barium	580	3,000	134	63.8	51.8	195	61.2	125	101	41.5	66.6	104	69
Cadmium	3	14	0.878	0.339	0.152 U	2.93	0.229 J	0.0528 J	0.119 J	0.139 J	0.076 J	0.0341 J	0.37
Chromium	360,000	24,000	38.5	21.1	18.5	28.8	16.6	37.7	30.1	10.8	20.8	37.2	23
Cobalt	0.9	4.6	4.64	<u>2.76</u>	<u>3.74</u>	<u>3.53</u>	<u>2.19</u>	<u>3.73</u>	<u>3.35</u>	<u>2.31</u>	<u>2.76</u>	<u>3.77</u>	<u>3.63</u>
Copper	700	620	441	27.1	6.84	710	18.8	8.79	7.49	4.34	8.05	7.23	23.8
Iron	150	11,000	14,100	<u>7,360</u>	<u>9,700</u>	11,500	<u>6,600</u>	13,900	11,300	<u>4,440</u>	<u>6,990</u>	13,900	<u>9,810</u>
Lead	270	400	47.9	27.7	3.68	164	20.8	14.4	14.3	8.72	8.57	10.7	26.3
Mercury	1	1.9	0.0366	0.837	0.0139 J	3.08 D	0.27	0.488	0.403	0.188	0.185	0.101	0.216
Nickel	130	300	16.8	8.25	9.92	23.3	5.51	16.4	13.4	5.07	10	14	11
Silver	3.4	78	ND	0.653 Q	0.234 U	<u>15.6 D</u>	0.365 J	0.318 U	0.324 U	0.298 U	0.293 U	0.297 U	1.03
Zinc	1,200	4,600	87.3	70.4	28	561	39.4	51.9	46.2	22	21.2	28.2	64.4

Notes:
 D - Compound identified in an analysis at a secondary dilution factor.
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 MG/KG - Milligram per kilogram
 ND - Non-detect
 Q - One or more QC criteria outside acceptance limits
 U - The material was analyzed for, but not detected
 Shading indicates detection
Bold text indicates exceedance of Residential Health-Based PSRG
Bold box indicates exceedance of background criteria
Underlined text indicates exceedance of Protection of Groundwater PSRG

*For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

Attachment B2
Phase II RI Subsurface Soil Data – 2nd Street
Disposal Area

TABLE B-2a

Phase II RI Subsurface Soil Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2nd-SB08-01-03-0514	TR-2nd-SB08-03-04-0514	TR-2nd-SB08D-01-03-0514	TR-2nd-SB09-01-03-0514	TR-2nd-SB09-03-04-0514	TR-2nd-SB10-01-03-0514	TR-2nd-SB10-03-05-0514	TR-2nd-SB10D-01-03-0514	TR-2nd-SB11-01-03-0514	TR-2nd-SB11-03-05-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name										
Volatile Organic Compounds (MG/KG)										
1,4-Dioxane	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzene	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Bromomethane	0.0052 UQ	0.0056 UQ	0.0054 UQ	0.005 UQ	0.0054 UQ	0.0043 UQ	0.0057 UQ	0.0043 UQ	0.0055 UQ	0.0056 UQ
Chloroform	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Chloromethane	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Dichlorodifluoromethane (Freon-12)	0.001 UQ	0.0011 UQ	0.0011 UQ	0.001 UQ	0.0011 UQ	0.0009 UQ	0.0011 UQ	0.0009 UQ	0.0011 UQ	0.0011 UQ
Ethylbenzene	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Isopropylbenzene	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
m- and p-Xylene	0.0021 U	0.0022 U	0.0021 U	0.002 U	0.0022 U	0.0017 U	0.0023 U	0.0017 U	0.0022 U	0.0023 U
o-Xylene	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Styrene	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Toluene	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0009 U	0.0011 U	0.0011 U
Trichlorofluoromethane (Freon-11)	0.001 UQ	0.0011 UQ	0.0011 UQ	0.019	0.0011 UQ	0.0009 UQ	0.0011 UQ	0.0009 UQ	0.0011 UQ	0.0011 UQ
Xylene, total	0.0021 U	0.0022 U	0.0021 U	0.002 U	0.0022 U	0.0017 U	0.0023 U	0.0017 U	0.0022 U	0.0023 U
Semivolatile Organic Compounds (MG/KG)										
2-Methylnaphthalene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Acenaphthene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Acenaphthylene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Anthracene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Benzo(a)anthracene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.027 J	0.034 U	0.028 J	0.03 J
Benzo(a)pyrene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Benzo(b)fluoranthene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Benzo(g,h,i)perylene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Benzo(k)fluoranthene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Chrysene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Dibenz(a,h)anthracene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Dibenzofuran	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.24 U	0.25 U	0.24 U	0.27 U
Fluoranthene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Fluorene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Indeno(1,2,3-cd)pyrene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 UQ	0.034 UQ	0.032 UQ	0.037 UQ
Naphthalene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Phenanthrene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Pyrene	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.032 U	0.034 U	0.032 U	0.037 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.024 UQ	0.025 U	0.024 U	0.027 UQ
Aroclor-1260	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.036 J	0.025 U	0.024 U	0.17
Total Metals (MG/KG)										
Antimony	0.985 U	1.02 U	0.994 U	0.995 U	1.01 U	0.952 U	1.01 U	0.952 U	1.94 J	1.07 U
Arsenic	1.62 J	1.32 J	2.03 J	2.19 J	2.6 J	2.57 J	2.38 J	2.03 J	3.02 J	3.74
Barium	105	99.4	116	104	99.4	72.4	73	58.8	64.2	69.6
Cadmium	0.123 U	0.166 U	0.159 U	0.124 U	0.176 U	0.191 J	0.152 U	0.119 U	0.181 U	0.164 U
Chromium	32.3	31.4	35.4	30	23.3	21.1	26.6	21.9	59.9	40.4
Cobalt	3.76	3.51	4.21	3.37	3.51	2.73	3.23	5.76	5.63	3.96
Iron	10,800	10,100	12,600	9,700	8,490	7,530	8,770	8,800	31,200 D	13,000
Lead	8.24	7.47	8.43	7.39	4.84	16.9	5.96	8.2	11.5	10.3
Manganese	72.3	56.3	71.4	85.6	96.7	186	46.5	409	83.8	57.9
Mercury	0.0451	0.0722	0.0535	0.0389	0.0166 J	0.958	0.0247	0.195	0.939	0.0458
Nickel	14.4	14.1	15.3	13.5	12.3	8.26	11	9.49	16.4	12.2
Silver	0.271 U	0.28 U	0.273 U	0.274 U	0.279 U	0.427 JQ	0.278 U	0.591 J	0.159 J	0.293 U
Vanadium	26.3	24.9	30.4	22.7	20.6	22.2	20.8	20.8	50.7	31.2
Zinc	21.4	20.6	23.5	22.4	20.4	55.2	20.1	23	43.1	25.2

Notes:

D - Compound identified in an analysis at a secondary dilution factor.

J - Analyte present. Value may or may not be accurate or precise

Q - One or more QC criteria outside acceptance limits

U - The material was analyzed for, but not detected

MG/KG - Milligram per kilogram

TABLE B-2a

Phase II RI Subsurface Soil Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2nd-SB12-01-03-0514	TR-2nd-SB13-01-03-0514	TR-2nd-SB14-01-02-0514	TR-2nd-SB15-01-02-0514	TR-2nd-SB16-01-02-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name					
Volatile Organic Compounds (MG/KG)					
1,4-Dioxane	NS	NS	NS	NS	NS
Benzene	0.0013 U	0.001 U	0.0013 U	0.001 U	0.0011 U
Bromomethane	0.0065 UQ	0.005 UQ	0.0066 UQ	0.0051 UQ	0.0055 UQ
Chloroform	0.017	0.001 U	0.0013 U	0.001 U	0.0011 U
Chloromethane	0.0013 U	0.001 U	0.0013 U	0.001 U	0.0011 U
Dichlorodifluoromethane (Freon-12)	0.0013 UQ	0.001 UQ	0.0013 UQ	0.001 UQ	0.0011 UQ
Ethylbenzene	0.0013 U	0.001 U	0.0013 U	0.001 U	0.0011 U
Isopropylbenzene	0.0013 U	0.001 U	0.0013 U	0.001 U	0.0011 U
m- and p-Xylene	0.0026 U	0.002 U	0.0026 U	0.002 U	0.0022 U
o-Xylene	0.0013 U	0.001 U	0.0013 U	0.001 U	0.0011 U
Styrene	0.0013 U	0.031	0.0013 U	0.001 U	0.0011 U
Toluene	0.0013 U	0.001 U	0.0013 U	0.001 U	0.0011 U
Trichlorofluoromethane (Freon-11)	0.0013 UQ	0.001 UQ	0.0013 UQ	0.001 UQ	0.0011 UQ
Xylene, total	0.0026 U	0.002 U	0.0026 U	0.002 U	0.0022 U
Semivolatile Organic Compounds (MG/KG)					
2-Methylnaphthalene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Acenaphthene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Acenaphthylene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Anthracene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Benzo(a)anthracene	0.026 J	0.033 U	0.035 U	0.034 U	0.033 U
Benzo(a)pyrene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Benzo(b)fluoranthene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Benzo(g,h,i)perylene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Benzo(k)fluoranthene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Chrysene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Dibenz(a,h)anthracene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Dibenzofuran	0.26 U	0.25 U	0.26 U	0.25 U	0.25 U
Fluoranthene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Fluorene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Indeno(1,2,3-cd)pyrene	0.035 UQ	0.033 UQ	0.035 UQ	0.034 U	0.033 U
Naphthalene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Phenanthrene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Pyrene	0.035 U	0.033 U	0.035 U	0.034 U	0.033 U
Pesticide/Polychlorinated Biphenyls (MG/KG)					
Aroclor-1254	0.026 U	0.025 U	0.026 U	0.025 U	0.025 U
Aroclor-1260	0.026 U	0.025 U	0.026 U	0.025 U	0.025 U
Total Metals (MG/KG)					
Antimony	2.75	0.991 U	1.05 U	1.02 U	0.986 U
Arsenic	1.71 J	1.73 J	2.66 J	2.53 J	2.57
Barium	64.7	91	36.1	63.9	46.3
Cadmium	0.182 U	0.155 U	0.168 U	0.127 U	0.123 U
Chromium	24.2	25.8	18.7	30.8	16.3
Cobalt	6.45	3.54	2.79	3.75	2.66
Iron	8,740	9,720	6,870	11,400	6,390
Lead	9.48	7.05	3.9	6.66	6.17
Manganese	193	178	57.2	121	137
Mercury	0.2	0.0767	0.042	0.0118 J	0.0275
Nickel	12.8	11.5	9.58	11.3	7.59
Silver	0.288 U	0.0804 J	0.288 U	0.28 U	0.271 U
Vanadium	19.2	22.2	16.7	26.2	15.4
Zinc	25.6	21.7	16	20.6	16.3

Notes:

D - Compound identified in an analysis at a secondary dilution factor.

J - Analyte present. Value may or may not be accurate or precise

Q - One or more QC criteria outside acceptance limits

U - The material was analyzed for, but not detected

MG/KG - Milligram per kilogram

Phase II RI Subsurface Soil Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2nd-SB08-01-03-0514	TR-2nd-SB08-03-04-0514	TR-2nd-SB08D-01-03-0514	TR-2nd-SB09-01-03-0514	TR-2nd-SB09-03-04-0514	TR-2nd-SB10-01-03-0514	TR-2nd-SB10-03-05-0514
Sample Date				5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Chloroform	0.34	0.32	--	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U
Styrene	0.92	870	--	0.001 U	0.0011 U	0.0011 U	0.001 U	0.0011 U	0.0009 U	0.0011 U
Trichlorofluoromethane (Freon-11)	24	146	--	0.001 UQ	0.0011 UQ	0.0011 UQ	0.019	0.021	0.0009 UQ	0.0011 UQ
Semivolatile Organic Compounds (MG/KG)										
Benzo(a)anthracene	0.18	0.16	ND	0.033 U	0.034 U	0.034 U	0.034 U	0.034 U	0.027 J	0.034 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
Aroclor-1260	0.14	1*	--	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.036 J	0.025 U
Total Metals (MG/KG)										
Antimony	0.9	6.2	ND	0.985 U	1.02 U	0.994 U	0.995 U	1.01 U	0.952 U	1.01 U
Arsenic	5.8	0.68	3.74	1.62 J	1.32 J	2.03 J	2.19 J	2.6 J	2.57 J	2.38 J
Barium	580	3,000	134	105	99.4	116	104	72.4	73	58.8
Cadmium	3	14	0.878	0.123 U	0.166 U	0.159 U	0.124 U	0.176 U	0.191 J	0.152 U
Chromium	360,000	24,000	38.5	32.3	31.4	35.4	30	23.3	21.1	26.6
Cobalt	0.9	4.6	4.64	3.76	3.51	4.21	3.37	3.51	2.73	3.23
Iron	150	11,000	14,100	10,800	10,100	12,600	9,700	8,490	7,530	8,770
Lead	270	400	47.9	8.24	7.47	8.43	7.39	4.84	16.9	5.96
Manganese	65	360	412	72.3	56.3	71.4	85.6	96.7	186	46.5
Mercury	1	1.9	0.0366	0.0451	0.0722	0.0535	0.0389	0.0166 J	0.958	0.0247
Nickel	130	300	16.8	14.4	14.1	15.3	13.5	12.3	8.26	11
Silver	3.4	78	ND	0.271 U	0.28 U	0.273 U	0.274 U	0.279 U	0.427 JQ	0.278 U
Vanadium	6	78	31.9	26.3	24.9	30.4	22.7	20.6	17.6	22.2
Zinc	1,200	4,600	87.3	21.4	20.6	23.5	22.4	20.4	55.2	20.1

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- ND - Non-detect
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram
- Shading indicates detection
- Bold text indicates exceedance of Residential Health-Based PSRG**
- Bold box indicates exceedance of background criteria**
- Underlined text indicates exceedance of Protection of Groundwater PSRG
- *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-2b

Phase II RI Subsurface Soil Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2nd-SB10D-01-03-0514 5/7/14	TR-2nd-SB11-01-03-0514 5/7/14	TR-2nd-SB11-03-05-0514 5/7/14	TR-2nd-SB12-01-03-0514 5/7/14	TR-2nd-SB13-01-03-0514 5/7/14	TR-2nd-SB14-01-02-0514 5/7/14	TR-2nd-SB15-01-02-0514 5/7/14	TR-2nd-SB16-01-02-0514 5/7/14
Chemical Name											
Volatile Organic Compounds (MG/KG)											
Chloroform	0.34	0.32	--	0.0009 U	0.0011 U	0.0011 U	0.017	0.001 U	0.0013 U	0.001 U	0.0011 U
Styrene	0.92	870	--	0.0009 U	0.0011 U	0.0011 U	0.0013 U	0.031	0.0013 U	0.001 U	0.0011 U
Trichlorofluoromethane (Freon-11)	24	146	--	0.0009 UQ	0.0011 UQ	0.0011 UQ	0.0013 UQ	0.001 UQ	0.0013 UQ	0.001 UQ	0.0011 UQ
Semivolatile Organic Compounds (MG/KG)											
Benzo(a)anthracene	0.18	0.16	ND	0.028 J	0.03 J	0.036 U	0.026 J	0.033 U	0.035 U	0.034 U	0.033 U
Pesticide/Polychlorinated Biphenyls (MG/KG)											
Aroclor-1260	0.14	1*	--	0.024 U	0.17	0.027 U	0.026 U	0.025 U	0.026 U	0.025 U	0.025 U
Total Metals (MG/KG)											
Antimony	0.9	6.2	ND	0.952 U	1.94 J	1.07 U	2.75	0.991 U	1.05 U	1.02 U	0.986 U
Arsenic	5.8	0.68	3.74	2.03 J	3.02 J	3.74	1.71 J	1.73 J	2.66 J	2.53 J	2.57
Barium	580	3,000	134	64.2	101	69.6	64.7	91	36.1	63.9	46.3
Cadmium	3	14	0.878	0.119 U	0.181 U	0.164 U	0.182 U	0.155 U	0.168 U	0.127 U	0.123 U
Chromium	360,000	24,000	38.5	21.9	59.9	40.4	24.2	25.8	18.7	30.8	16.3
Cobalt	0.9	4.6	4.64	5.76	5.63	3.96	6.45	3.54	2.79	3.75	2.66
Iron	150	11,000	14,100	8,800	31,200 D	13,000	8,740	9,720	6,870	11,400	6,390
Lead	270	400	47.9	8.2	11.5	10.3	9.48	7.05	3.9	6.66	6.17
Manganese	65	360	412	409	83.8	57.9	193	178	57.2	121	137
Mercury	1	1.9	0.0366	0.195	0.939	0.0458	0.2	0.0767	0.042	0.0118 J	0.0275
Nickel	130	300	16.8	9.49	16.4	12.2	12.8	11.5	9.58	11.3	7.59
Silver	3.4	78	ND	0.591 J	0.159 J	0.293 U	0.288 U	0.0804 J	0.288 U	0.28 U	0.271 U
Vanadium	6	78	31.9	20.8	50.7	31.2	19.2	22.2	16.7	26.2	15.4
Zinc	1,200	4,600	87.3	23	43.1	25.2	25.6	21.7	16	20.6	16.3

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- ND - Non-detect
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram
- Shading indicates detection
- Bold text indicates exceedance of Residential Health-Based PSRG**
- Bold box indicates exceedance of background criteria**
- Underlined text indicates exceedance of Protection of Groundwater PSRG
- *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

Attachment B3
Phase II RI Surface Soil Data – 5th Street
Disposal Area

TABLE B-3a

Phase II RI Surface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SS06-0514	TR-5th-SS07-0514	TR-5th-SS08-0514	TR-5th-SS09-0514	TR-5th-SS10-0514	TR-5th-SS11-0514	TR-5th-SS12-0514	TR-5th-SS12D-0514	TR-5th-SS13-0514
Sample Date	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14
Chemical Name									
Volatile Organic Compounds (MG/KG)									
Benzene	0.0009 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0011 U	0.0015 U
Styrene	0.0009 U	0.0011 U	0.0011 U	0.0012 U	0.0013 U	0.0013 U	0.0013 U	0.0011 U	0.0015 U
Semivolatile Organic Compounds (MG/KG)									
Acenaphthene	0.032 U	0.11	0.033 U	0.041 UQ	0.035 U	0.061	0.036 UQ	0.033 U	0.04 U
Acenaphthylene	0.026 J	0.02 J	0.033 U	0.041 UQ	0.035 U	0.035 U	0.036 UQ	0.033 U	0.04 U
Anthracene	0.042	0.23	0.033 U	0.041 UQ	0.023 J	0.11	0.036 UQ	0.033 U	0.04 U
Benzo(a)anthracene	0.12	0.63	0.066	0.078 Q	0.064	0.34	0.04 JQ	0.035 J	0.04 U
Benzo(a)pyrene	0.11	0.57	0.049	0.069 Q	0.041 J	0.3	0.036 UQ	0.033 U	0.04 U
Benzo(b)fluoranthene	0.19	0.76	0.079	0.11 Q	0.064	0.44	0.036 UQ	0.024 J	0.04 U
Benzo(g,h,i)perylene	0.1	0.39	0.052	0.072 Q	0.036 J	0.22	0.036 UQ	0.033 U	0.04 U
Benzo(k)fluoranthene	0.061	0.26	0.033 U	0.042 JQ	0.035 U	0.17	0.036 UQ	0.033 U	0.04 U
Carbazole	0.47 UDQ	0.69 JDQ	0.49 UDQ	0.3 U	0.52 UDQ	0.26 U	0.27 U	0.24 U	0.3 U
Chrysene	0.14	0.66	0.062	0.054 Q	0.046	0.36	0.036 UQ	0.033 U	0.04 U
Dibenz(a,h)anthracene	0.026 J	0.1	0.033 U	0.041 UQ	0.035 U	0.058	0.036 UQ	0.033 U	0.04 U
Dibenzofuran	0.47 UDQ	0.29 JDQ	0.49 UDQ	0.3 U	0.52 UDQ	0.26 U	0.27 U	0.24 U	0.3 U
Fluoranthene	0.26	1.3	0.071	0.063 Q	0.087	0.81	0.027 JQ	0.021 J	0.04 U
Fluorene	0.032 U	0.085	0.033 U	0.041 UQ	0.035 U	0.069	0.036 UQ	0.033 U	0.04 U
Indeno(1,2,3-cd)pyrene	0.082	0.34	0.039 J	0.06 Q	0.026 J	0.18	0.036 UQ	0.033 U	0.04 U
Phenanthrene	0.13	0.75	0.044	0.041 UQ	0.059	0.68	0.036 UQ	0.033 U	0.04 U
Pyrene	0.23	1.1	0.074	0.063 Q	0.072	0.63	0.024 JQ	0.019 J	0.04 U
Pesticide/Polychlorinated Biphenyls (MG/KG)									
Aroclor-1254	7.3 DPQ	12 DPQ	5.7 DPQ	0.21 JDPQ	0.026 U	0.058 PQ	0.093 PQ	0.23 PQ	0.03 U
Aroclor-1260	25 D	60 D	29 D	1.2 D	0.21	0.25	0.48	1.1	0.02 J
Total Metals (MG/KG)									
Antimony	3.96	2.17	17 JD	2.9	1.04 U	0.359 J	1.39 J	0.974 J	1.18 U
Arsenic	4.7	3.69	3.9	3.3 J	2.4 J	1.8 J	4.54	3.18	1.64 U
Cadmium	4.56	4.29	3.09	2.6	0.335	4.71	0.769	0.511	0.06 J
Iron	14,600	15,400	14,700	11,900	9,350	6,770	24,900	14,200	680
Lead	336	204	1,080	228	334	62.3	217	230	8.12
Mercury	1.05	0.617	2.56 D	1.06	0.0579	0.12	0.43	0.536	0.0354
Zinc	435	383	382	283	95.3	345	156	133	7.12

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- UJ - Analyte not detected, quantitation limit may be inaccurate
- MG/KG - Milligram per kilogram

TABLE B-3a

Phase II RI Surface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SS14-0514	TR-5th-SS15-0514	TR-5th-SS16-0514	TR-5th-SS16D-0514	TR-5th-SS17-0514
Sample Date	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14
Chemical Name					
Volatile Organic Compounds (MG/KG)					
Benzene	0.0014 U	0.0013 UQ	0.0013 UQ	0.0013 U	0.0016 U
Styrene	0.0014 U	0.0013 UQ	0.0013 UQ	0.0013 U	0.0016 U
Semivolatile Organic Compounds (MG/KG)					
Acenaphthene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Acenaphthylene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Anthracene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Benzo(a)anthracene	0.022 J	0.048	0.031 J	0.042 J	0.035 J
Benzo(a)pyrene	0.03 U	0.021 J	0.038 U	0.037 U	0.036 U
Benzo(b)fluoranthene	0.03 U	0.042 J	0.038 U	0.037 U	0.036 U
Benzo(g,h,i)perylene	0.03 U	0.024 J	0.038 U	0.037 U	0.036 U
Benzo(k)fluoranthene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Carbazole	0.22 U	0.27 U	0.28 U	0.28 U	0.27 U
Chrysene	0.03 U	0.024 J	0.038 U	0.017 J	0.036 U
Dibenz(a,h)anthracene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Dibenzofuran	0.22 U	0.27 U	0.28 U	0.28 U	0.27 U
Fluoranthene	0.03 U	0.04 J	0.038 U	0.033 J	0.036 U
Fluorene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Indeno(1,2,3-cd)pyrene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 UQ
Phenanthrene	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Pyrene	0.03 U	0.034 J	0.038 U	0.033 J	0.036 U
Pesticide/Polychlorinated Biphenyls (MG/KG)					
Aroclor-1254	0.022 UQ	0.2 PQ	0.091 PQ	0.037 JP	0.021 JQ
Aroclor-1260	0.044	0.61	0.17	0.13	0.1
Total Metals (MG/KG)					
Antimony	0.876 U	0.889 J	0.81 J	0.674 J	1.07 U
Arsenic	1.5 U	3.96	3.2	2.84	1.79 J
Cadmium	0.0392 J	1.31	1.18	0.746	1.47
Iron	721	14,900	7,510	9,130	6,070
Lead	6.27	186	105	51.8	31.1
Mercury	0.0248	0.202	0.111	0.108	0.087
Zinc	5.07	159	130	74.1	90.1

Notes:

D - Compound identified in an analysis at a secondary dilution factor.

J - Analyte present. Value may or may not be accurate or precise

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

Q - One or more QC criteria outside acceptance limits

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

MG/KG - Milligram per kilogram

TABLE B-3b

Phase II RI Surface Soil Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5th-SS06-0514 5/5/14	TR-5th-SS07-0514 5/5/14	TR-5th-SS08-0514 5/5/14	TR-5th-SS09-0514 5/5/14	TR-5th-SS10-0514 5/5/14	TR-5th-SS11-0514 5/5/14	TR-5th-SS12-0514 5/5/14	TR-5th-SS12D-0514 5/5/14
Chemical Name											
Volatile Organic Compounds (MG/KG)											
No Detections											
Semivolatile Organic Compounds (MG/KG)											
Acenaphthene	8.4	720	ND	0.032 U	0.11	0.033 U	0.041 UQ	0.035 U	0.061	0.036 UQ	0.033 U
Acenaphthylene	21	--	ND	0.026 J	0.02 J	0.033 U	0.041 UQ	0.035 U	0.035 U	0.036 UQ	0.033 U
Anthracene	660	3,600	ND	0.042	0.23	0.033 U	0.041 UQ	0.023 J	0.11	0.036 UQ	0.033 U
Benzo(a)anthracene	0.18	0.16	ND	0.12	0.63	0.066	0.078 Q	0.064	0.34	0.04 JQ	0.035 J
Benzo(a)pyrene	0.059	0.016	ND	0.11	0.57	0.049	0.069 Q	0.041 J	0.3	0.036 UQ	0.033 U
Benzo(b)fluoranthene	0.6	0.16	ND	0.19	0.76	0.079	0.11 Q	0.064	0.44	0.036 UQ	0.024 J
Benzo(g,h,i)perylene	7,800	--	ND	0.1	0.39	0.052	0.072 Q	0.036 J	0.22	0.036 UQ	0.033 U
Benzo(k)fluoranthene	5.9	1.6	ND	0.061	0.26	0.033 U	0.042 JQ	0.035 U	0.17	0.036 UQ	0.033 U
Carbazole	0.37	--	ND	0.47 UDQ	0.69 JDQ	0.49 UDQ	0.3 U	0.52 UDQ	0.26 U	0.27 U	0.24 U
Chrysene	18	16	ND	0.14	0.66	0.062	0.054 Q	0.046	0.36	0.036 UQ	0.033 U
Dibenz(a,h)anthracene	0.19	0.016	ND	0.026 J	0.1	0.033 U	0.041 UQ	0.035 U	0.058	0.036 UQ	0.033 U
Dibenzofuran	5.2	15	ND	0.47 UDQ	0.29 JDQ	0.49 UDQ	0.3 U	0.52 UDQ	0.26 U	0.27 U	0.24 U
Fluoranthene	330	480	ND	0.26	1.3	0.071	0.063 Q	0.087	0.81	0.027 JQ	0.021 J
Fluorene	56	480	ND	0.032 U	0.085	0.033 U	0.041 UQ	0.035 U	0.069	0.036 UQ	0.033 U
Indeno(1,2,3-cd)pyrene	2	0.16	ND	0.082	0.34	0.039 J	0.06 Q	0.026 J	0.18	0.036 UQ	0.033 U
Phenanthrene	68	--	ND	0.13	0.75	0.044	0.041 UQ	0.059	0.68	0.036 UQ	0.033 U
Pyrene	220	360	ND	0.23	1.1	0.074	0.063 Q	0.072	0.63	0.024 JQ	0.019 J
Pesticide/Polychlorinated Biphenyls (MG/KG)											
Aroclor-1254	0.14	1*	--	7.3 DPQ	12 DPQ	5.7 DPQ	0.21 JDPQ	0.026 U	0.058 PQ	0.093 PQ	0.23 PQ
Aroclor-1260	0.14	1*	--	25 D	60 D	29 D	1.2 D	0.21	0.25	0.48	1.1
Total Metals (MG/KG)											
Antimony	0.9	6.2	ND	3.96	2.17	17 JD	2.9	1.04 U	0.359 J	1.39 J	0.974 J
Arsenic	5.8	0.68	3.74	4.7	3.69	3.9	3.3 J	2.4 J	1.8 J	4.54	3.18
Cadmium	3	14	0.878	4.56	4.29	3.09	2.6	0.335	4.71	0.769	0.511
Iron	150	11,000	14,100	14,600	15,400	14,700	11,900	9,350	6,770	24,900	14,200
Lead	270	400	47.9	336	204	1,080	228	334	62.3	217	230
Mercury	1	1.9	0.0366	1.05	0.617	2.56 D	1.06	0.0579	0.12	0.43	0.536
Zinc	1,200	4,600	87.3	435	383	382	283	95.3	345	156	133

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- NS - Not sampled
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram
- ND - Non-detect
- Shading indicates detection
- Bold text indicates exceedance of Residential Health-Based PSRG**
- Bold box indicates exceedance of background criteria**
- Underlined text indicates exceedance of Protection of Groundwater PSRG
- *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-3b

Phase II RI Surface Soil Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5th-SS13-0514	TR-5th-SS14-0514	TR-5th-SS15-0514	TR-5th-SS16-0514	TR-5th-SS16D-0514	TR-5th-SS17-0514
Sample Date				5/5/14	5/5/14	5/5/14	5/5/14	5/5/14	5/5/14
Chemical Name									
Volatile Organic Compounds (MG/KG)									
No Detections									
Semivolatile Organic Compounds (MG/KG)									
Acenaphthene	8.4	720	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Acenaphthylene	21	--	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Anthracene	660	3,600	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Benzo(a)anthracene	0.18	0.16	ND	0.04 U	0.022 J	0.048	0.031 J	0.042 J	0.035 J
Benzo(a)pyrene	0.059	0.016	ND	0.04 U	0.03 U	0.021 J	0.038 U	0.037 U	0.036 U
Benzo(b)fluoranthene	0.6	0.16	ND	0.04 U	0.03 U	0.042 J	0.038 U	0.037 U	0.036 U
Benzo(g,h,i)perylene	7,800	--	ND	0.04 U	0.03 U	0.024 J	0.038 U	0.037 U	0.036 U
Benzo(k)fluoranthene	5.9	1.6	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Carbazole	0.37	--	ND	0.3 U	0.22 U	0.27 U	0.28 U	0.28 U	0.27 U
Chrysene	18	16	ND	0.04 U	0.03 U	0.024 J	0.038 U	0.017 J	0.036 U
Dibenz(a,h)anthracene	0.19	0.016	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Dibenzofuran	5.2	15	ND	0.3 U	0.22 U	0.27 U	0.28 U	0.28 U	0.27 U
Fluoranthene	330	480	ND	0.04 U	0.03 U	0.04 J	0.038 U	0.033 J	0.036 U
Fluorene	56	480	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Indeno(1,2,3-cd)pyrene	2	0.16	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 UQ
Phenanthrene	68	--	ND	0.04 U	0.03 U	0.036 U	0.038 U	0.037 U	0.036 U
Pyrene	220	360	ND	0.04 U	0.03 U	0.034 J	0.038 U	0.033 J	0.036 U
Pesticide/Polychlorinated Biphenyls (MG/KG)									
Aroclor-1254	0.14	1*	--	0.03 U	0.022 UQ	0.2 PQ	0.091 PQ	0.037 JP	0.021 JQ
Aroclor-1260	0.14	1*	--	0.02 J	0.044	0.61	0.17	0.13	0.1
Total Metals (MG/KG)									
Antimony	0.9	6.2	ND	1.18 U	0.876 U	0.889 J	0.81 J	0.674 J	1.07 U
Arsenic	5.8	0.68	3.74	1.64 U	1.5 U	3.96	3.2	2.84	1.79 J
Cadmium	3	14	0.878	0.06 J	0.0392 J	1.31	1.18	0.746	1.47
Iron	150	11,000	14,100	680	721	14,900	7,510	9,130	6,070
Lead	270	400	47.9	8.12	6.27	186	105	51.8	31.1
Mercury	1	1.9	0.0366	0.0354	0.0248	0.202	0.111	0.108	0.087
Zinc	1,200	4,600	87.3	7.12	5.07	159	130	74.1	90.1

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- NS - Not sampled
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram
- ND - Non-detect
- Shading indicates detection
- Bold text indicates exceedance of Residential Health-Based PSRG**
- Bold box indicates exceedance of background criteria**
- Underlined text indicates exceedance of Protection of Groundwater PSRG
- *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

**Attachment B4
Phase II RI Subsurface Soil Data – 5th Street
Disposal Area**

TABLE B-4a

Phase II RI Subsurface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SB07-01-03-0514	TR-5th-SB07-03-04-0514	TR-5th-SB08-01-03-0514	TR-5th-SB08-03-05-0514	TR-5th-SB09-01-03-0514	TR-5th-SB09-03-05-0514	TR-5th-SB10-01-03-0514	TR-5th-SB10-03-04-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name								
Volatile Organic Compounds (MG/KG)								
1,2,3-Trichlorobenzene	0.0009 U	0.001 U	0.001 UQ	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
1,2,4-Trichlorobenzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
1,3-Dichlorobenzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
1,4-Dichlorobenzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
1,4-Dioxane	NS							
Benzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
Carbon disulfide	0.0046 U	0.005 U	0.0048 UQ	0.0057 U	0.0046 U	0.0054 U	0.0058 U	0.0049 U
Chlorobenzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
Cyclohexane	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
Dichlorodifluoromethane (Freon-12)	0.0009 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0009 U	0.0011 U	0.0012 U	0.001 UQ
Ethylbenzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
Isopropylbenzene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
m- and p-Xylene	0.0018 U	0.002 U	0.0019 U	0.0023 U	0.0018 U	0.0022 U	0.0023 U	0.0019 U
Methyl acetate	0.0046 U	0.005 U	0.0048 U	0.0057 U	0.0046 U	0.0054 U	0.0058 U	0.0049 U
Methylene chloride	0.0046 U	7.00E-04 J	0.0048 U	0.0057 U	0.0046 U	0.0054 U	0.0058 U	0.0049 U
Toluene	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U	0.001 U
Semivolatile Organic Compounds (MG/KG)								
Acenaphthene	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Acenaphthylene	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Anthracene	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Benzo(a)anthracene	0.033 U	0.032 U	0.057	0.034 U	0.027 J	0.035 U	0.031 U	0.034 U
Benzo(a)pyrene	0.033 U	0.032 U	0.024 J	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Benzo(b)fluoranthene	0.033 U	0.032 U	0.057	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Benzo(g,h,i)perylene	0.033 U	0.032 U	0.035 J	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Benzo(k)fluoranthene	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Chrysene	0.033 U	0.032 U	0.031 J	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Dibenz(a,h)anthracene	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Fluoranthene	0.033 U	0.032 U	0.045	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Fluorene	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Indeno(1,2,3-cd)pyrene	0.033 U	0.032 U	0.024 J	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Phenanthrene	0.033 U	0.032 U	0.026 J	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Pyrene	0.033 U	0.032 U	0.054	0.034 U	0.031 U	0.035 U	0.031 U	0.034 U
Pesticide/Polychlorinated Biphenyls (MG/KG)								
4,4'-DDD	0.0041 UD	0.0041 UD	0.004 UD	0.0043 UD	0.0039 UD	0.0044 UD	0.004 UD	0.0043 UD
Aroclor-1254	0.024 U	0.024 U	2.4 DP	0.025 UQ	0.023 U	0.026 U	0.023 U	0.025 U
Aroclor-1260	0.024 U	0.016 J	5.7 D	0.02 J	0.024 J	0.026 U	0.023 U	0.025 U
Total Metals (MG/KG)								
Antimony	0.972 U	0.957 U	0.775 J	1.02 U	0.928 U	1.03 U	0.932 U	1.01 U
Arsenic	1.68 J	1.16 J	7.56 JD	1.93 J	2.58 J	2.96	1.27 J	3.01 J
Barium	54.1	66.6	91.8 D	73.1	122	63.4	67.4	68.5
Cadmium	0.052 J	0.153 U	1.29 JD	0.165 U	0.141 U	0.129 U	0.157 U	0.177 U
Chromium	18.6	21.2	55.5 D	34.2	24.4	26.1	16.4	29.4
Cobalt	2.8	2.98	6.13 D	4.42	3.34	3.33	2.84	3.34
Iron	6,760	7,230	51,200 D	13,000	11,500	9,230	6,100	9,060
Lead	69.2	6.97	234 D	9.06	9.54	6.24	7.18	6.62
Mercury	0.0197 J	0.014 U	0.327	0.00478 J	0.0609	0.0177 J	0.0474	0.0215 J

TABLE B-4a

Phase II RI Subsurface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SB07-01-03-0514	TR-5th-SB07-03-04-0514	TR-5th-SB08-01-03-0514	TR-5th-SB08-03-05-0514	TR-5th-SB09-01-03-0514	TR-5th-SB09-03-05-0514	TR-5th-SB10-01-03-0514	TR-5th-SB10-03-04-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name								
Nickel	7.55	8.93	24.8 D	13.3	9.66	12.1	7.07	11.8
Silver	0.267 U	0.263 U	0.134 J	0.28 U	0.0911 J	0.283 U	0.256 U	0.277 U
Zinc	70.4 D	23.4	239 D	26.8	22	22.4	17.9	20.9

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram

TABLE B-4a

Phase II RI Subsurface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SB10D-01-03-0514	TR-5th-SB11-01-03-0514	TR-5th-SB11-03-05-0514	TR-5th-SB12-01-03-0514	TR-5th-SB12-03-05-0514	TR-5th-SB13-01-03-0514	TR-5th-SB13-03-05-0514	TR-5th-SB14-01-03-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name								
Volatile Organic Compounds (MG/KG)								
1,2,3-Trichlorobenzene	0.0009 U	0.001 U						
1,2,4-Trichlorobenzene	0.0009 U	0.001 U						
1,3-Dichlorobenzene	0.0009 U	0.001 U						
1,4-Dichlorobenzene	0.0009 U	0.001 U						
1,4-Dioxane	NS	NS	NS	NS	NS	NS	NS	NS
Benzene	0.0009 U	0.001 U						
Carbon disulfide	0.0047 U	0.005 U	0.005 U	0.005 U	0.0049 U	0.0049 U	0.0053 U	0.0049 U
Chlorobenzene	0.0009 U	0.001 U						
Cyclohexane	0.0009 U	0.001 U						
Dichlorodifluoromethane (Freon-12)	0.0009 UQ	0.001 U						
Ethylbenzene	0.0009 U	0.001 U						
Isopropylbenzene	0.0009 U	0.001 U						
m- and p-Xylene	0.0019 U	0.002 U	0.0021 U	0.002 U				
Methyl acetate	0.0047 U	0.005 U	0.005 U	0.005 U	0.0049 U	0.0049 U	0.0053 U	0.0049 U
Methylene chloride	0.0047 U	0.005 U	0.005 U	0.005 U	8.00E-04 J	0.0049 U	0.0053 U	0.0049 U
Toluene	0.0009 U	0.001 U						
Semivolatile Organic Compounds (MG/KG)								
Acenaphthene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Acenaphthylene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Anthracene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Benzo(a)anthracene	0.033 U	0.029 J	0.031 U	0.038 J	0.032 U	0.032 U	0.034 U	0.033 U
Benzo(a)pyrene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Benzo(b)fluoranthene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Benzo(g,h,i)perylene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Benzo(k)fluoranthene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Chrysene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Dibenz(a,h)anthracene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Fluoranthene	0.033 U	0.033 U	0.031 U	0.026 J	0.032 U	0.032 U	0.034 U	0.033 U
Fluorene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Indeno(1,2,3-cd)pyrene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Phenanthrene	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U	0.034 U	0.033 U
Pyrene	0.033 U	0.033 U	0.031 U	0.02 J	0.032 U	0.032 U	0.034 U	0.033 U
Pesticide/Polychlorinated Biphenyls (MG/KG)								
4,4'-DDD	0.0041 UD	0.0041 UD	0.0039 UD	0.0043 UD	0.004 UD	0.004 UD	0.0043 UD	0.0041 UD
Aroclor-1254	0.024 U	0.026 JQ	0.023 UQ	0.045 JQ	0.024 U	0.02 JPQ	0.025 U	0.024 U
Aroclor-1260	0.024 U	0.048 J	0.072	0.066	0.024 U	0.089	0.025 U	0.024 U
Total Metals (MG/KG)								
Antimony	0.97 U	1.06 J	0.929 U	1.02 U	0.945 U	0.943 U	1 U	0.972 U
Arsenic	1.93 J	2.14 J	1.76 J	1.94 J	2.04 J	2.87 J	1.81 J	2.02 J
Barium	72.9	54.7	67.1	61.8	88.7	109	105	85.6
Cadmium	0.121 U	0.155 J	0.0287 J	0.536	0.131 U	0.0791 J	0.163 U	0.164 U
Chromium	16.8	18.9	14.7	25.5	13.4	26.2	36.1	28.1
Cobalt	3.14	5.84	3.09	3.44	3.9	4.67	4.05	3.56
Iron	6,730	9,530	6,040	9,760	5,790	10,500	11,100	9,420
Lead	7.49	26.8	6.79	77.3	6.44	23.9	8.92	7.24
Mercury	0.0358	0.139	0.0837	0.117	0.0453	0.0805	0.0167 J	0.019 J

TABLE B-4a

Phase II RI Subsurface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SB10D-01-03-0514	TR-5th-SB11-01-03-0514	TR-5th-SB11-03-05-0514	TR-5th-SB12-01-03-0514	TR-5th-SB12-03-05-0514	TR-5th-SB13-01-03-0514	TR-5th-SB13-03-05-0514	TR-5th-SB14-01-03-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name								
Nickel	7.2	7.27	7.36	13.9	7.94	12.4	14.6	11.5
Silver	0.267 U	0.268 U	0.255 U	0.0882 J	0.26 U	0.069 J	0.276 U	0.267 U
Zinc	18.3	60.9	23	216 D	21.3	36.6	26.5	26.6

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram

TABLE B-4a

Phase II RI Subsurface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SB14-03-05-0514	TR-5th-SB15-01-03-0514	TR-5th-SB16-01-03-0514	TR-5th-SB16-03-04-0514	TR-5th-SB17-01-03-0514	TR-5th-SB18-01-03-0514	TR-5th-SB18-03-05-0514	TR-5th-SB18D-01-03-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name								
Volatile Organic Compounds (MG/KG)								
1,2,3-Trichlorobenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
1,2,4-Trichlorobenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
1,3-Dichlorobenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
1,4-Dichlorobenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
1,4-Dioxane	NS							
Benzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
Carbon disulfide	0.0056 U	0.0066 U	0.0053 U	0.0052 U	0.0056 U	0.005 U	0.0056 U	0.0053 U
Chlorobenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
Cyclohexane	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
Dichlorodifluoromethane (Freon-12)	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 UQ	0.001 UQ	0.0011 UQ	0.0011 UQ
Ethylbenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
Isopropylbenzene	0.0011 U	0.0013 U	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
m- and p-Xylene	0.0022 U	0.0026 U	0.0021 U	0.0021 U	0.0022 U	0.002 U	0.0023 U	0.0021 U
Methyl acetate	0.0056 U	0.0066 U	0.0053 U	0.0052 U	0.0056 U	0.005 U	0.0056 U	0.0053 U
Methylene chloride	0.0056 U	0.0066 U	0.0053 U	7.00E-04 J	0.0056 U	0.005 U	0.0056 U	0.0053 U
Toluene	0.0011 U	0.0017 J	0.0011 U	0.001 U	0.0011 U	0.001 U	0.0011 U	0.0011 U
Semivolatile Organic Compounds (MG/KG)								
Acenaphthene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.018 J	0.03 U	0.032 U
Acenaphthylene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.086	0.03 U	0.032 U
Anthracene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.17	0.03 U	0.067
Benzo(a)anthracene	0.034 U	0.036 U	0.033 U	0.028 J	0.046	0.52	0.03 J	0.25
Benzo(a)pyrene	0.034 U	0.036 U	0.033 U	0.032 U	0.053	0.38	0.03 U	0.19
Benzo(b)fluoranthene	0.034 U	0.036 U	0.033 U	0.032 U	0.089	0.66	0.03 U	0.35
Benzo(g,h,i)perylene	0.034 U	0.037 J	0.034 J	0.032 U	0.069	0.2	0.03 U	0.11
Benzo(k)fluoranthene	0.034 U	0.036 U	0.033 U	0.032 U	0.028 J	0.28	0.03 U	0.12
Chrysene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.52	0.014 J	0.25
Dibenz(a,h)anthracene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.088	0.03 U	0.038 J
Fluoranthene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	1.2	0.03 U	0.43
Fluorene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.027 J	0.03 U	0.032 U
Indeno(1,2,3-cd)pyrene	0.034 U	0.036 U	0.02 J	0.032 U	0.051	0.22 Q	0.03 UQ	0.11 Q
Phenanthrene	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U	0.24	0.03 U	0.057
Pyrene	0.034 U	0.036 U	0.033 U	0.032 U	0.025 J	1.2	0.03 U	0.48
Pesticide/Polychlorinated Biphenyls (MG/KG)								
4,4'-DDD	0.0043 UD	0.0045 UD	0.0042 UD	0.004 UD	0.0043 UD	0.0039 UD	0.0038 UD	0.004 UD
Aroclor-1254	0.025 U	0.026 U	0.025 U	0.024 U	0.21	0.18 PQ	0.25 PQ	0.19
Aroclor-1260	0.025 U	0.026 U	0.035 J	0.024 U	0.18	0.16	0.11	0.23
Total Metals (MG/KG)								
Antimony	1 U	1.06 U	0.986 U	0.945 U	0.434 J	0.599 J	0.9 U	0.952 U
Arsenic	3.16	1.34 J	5.21	2.05 J	3.21 J	6.44 D	1.65 J	2.41 JD
Barium	69.3	10.7	143	65.1	58.1	85.1 D	44.2	61.1 D
Cadmium	0.146 U	0.0492 J	0.411	0.16 U	0.51	7.19 D	0.111 J	0.539 D
Chromium	24.6	2.66	12.1	26.5	28.3	25.2 D	14.1	20.4 D
Cobalt	3.56	0.773	4	3.06	3.75	3.89 D	2.37	3.1 D
Iron	9,560	1,410	6,780	10,000	10,800	20,900 D	6,420	23,600 D
Lead	5.34	2.64	73.9	6.87	101	890 D	39.8	92 D
Mercury	0.00535 J	0.0123 J	0.0313	0.027	0.401	0.0765	0.196	0.0687

TABLE B-4a

Phase II RI Subsurface Soil Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5th-SB14-03-05-0514	TR-5th-SB15-01-03-0514	TR-5th-SB16-01-03-0514	TR-5th-SB16-03-04-0514	TR-5th-SB17-01-03-0514	TR-5th-SB18-01-03-0514	TR-5th-SB18-03-05-0514	TR-5th-SB18D-01-03-0514
Sample Date	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name								
Nickel	11.3	1.64	7.95	11.7	22.9	11.8 D	6.6	13.6 D
Silver	0.276 U	0.29 U	0.271 U	0.26 U	0.0717 J	0.138 J	0.248 U	0.262 U
Zinc	21.8	4.59	244 D	22.3	72.8	483 D	35.8	103 D

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram

TABLE B-4b

Phase II RI Subsurface Soil Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5th-SB07-01-03-0514	TR-5th-SB07-03-04-0514	TR-5th-SB08-01-03-0514	TR-5th-SB08-03-05-0514	TR-5th-SB09-01-03-0514	TR-5th-SB09-03-05-0514	TR-5th-SB10-01-03-0514
Sample Date				5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Methylene chloride	0.023	57	--	0.0046 U	7.00E-04 J	0.0048 U	0.0057 U	0.0046 U	0.0054 U	0.0058 U
Toluene	5.5	820	--	0.0009 U	0.001 U	0.001 U	0.0011 U	0.0009 U	0.0011 U	0.0012 U
Semivolatile Organic Compounds (MG/KG)										
Acenaphthene	8.4	720	ND	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U
Acenaphthylene	21	--	ND	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U
Anthracene	660	3600	ND	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U
Benzo(a)anthracene	0.18	0.16	ND	0.033 U	0.032 U	0.057	0.034 U	0.027 J	0.035 U	0.031 U
Benzo(a)pyrene	0.059	0.016	ND	0.033 U	0.032 U	0.024 J	0.034 U	0.031 U	0.035 U	0.031 U
Benzo(b)fluoranthene	0.6	0.16	ND	0.033 U	0.032 U	0.057	0.034 U	0.031 U	0.035 U	0.031 U
Benzo(g,h,i)perylene	7800	--	ND	0.033 U	0.032 U	0.035 J	0.034 U	0.031 U	0.035 U	0.031 U
Benzo(k)fluoranthene	5.9	1.6	ND	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U
Chrysene	18	16	ND	0.033 U	0.032 U	0.031 J	0.034 U	0.031 U	0.035 U	0.031 U
Dibenz(a,h)anthracene	0.19	0.016	ND	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U
Fluoranthene	330	480	ND	0.033 U	0.032 U	0.045	0.034 U	0.031 U	0.035 U	0.031 U
Fluorene	56	480	ND	0.033 U	0.032 U	0.032 U	0.034 U	0.031 U	0.035 U	0.031 U
Indeno(1,2,3-cd)pyrene	2	0.15	ND	0.033 U	0.032 U	0.024 J	0.034 U	0.031 U	0.035 U	0.031 U
Phenanthrene	68	--	ND	0.033 U	0.032 U	0.026 J	0.034 U	0.031 U	0.035 U	0.031 U
Pyrene	220	360	ND	0.033 U	0.032 U	0.054	0.034 U	0.031 U	0.035 U	0.031 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	0.14	1*	--	0.024 U	0.024 U	2.4 DP	0.025 UQ	0.023 U	0.026 U	0.023 U
Aroclor-1260	0.14	1*	--	0.024 U	0.016 J	5.7 D	0.02 J	0.024 J	0.026 U	0.023 U
Total Metals (MG/KG)										
Antimony	0.9	6.2	ND	0.972 U	0.957 U	0.775 J	1.02 U	0.928 U	1.03 U	0.932 U
Arsenic	5.8	0.68	3.74	1.68 J	1.16 J	7.56 JD	1.93 J	2.58 J	2.96	1.27 J
Barium	580	3,000	134	54.1	66.6	91.8 D	73.1	122	63.4	67.4
Cadmium	3	14	0.878	0.052 J	0.153 U	1.29 JD	0.165 U	0.141 U	0.129 U	0.157 U
Chromium	360,000	24,000	38.5	18.6	21.2	55.5 D	34.2	24.4	26.1	16.4
Cobalt	0.9	4.6	4.64	2.8	2.98	6.13 D	4.42	3.34	3.33	2.84
Iron	150	11,000	14,100	6,760	7,230	51,200 D	13,000	11,500	9,230	6,100
Lead	270	400	47.9	69.2	6.97	234 D	9.06	9.54	6.24	7.18
Mercury	1	1.9	0.0366	0.0197 J	0.014 U	0.327	0.00478 J	0.0609	0.0177 J	0.0474
Nickel	130	300	16.8	7.55	8.93	24.8 D	13.3	9.66	12.1	7.07
Silver	3.4	78	ND	0.267 U	0.263 U	0.134 J	0.28 U	0.0911 J	0.283 U	0.256 U
Zinc	1,200	4,600	87.3	70.4 D	23.4	239 D	26.8	22	22.4	17.9

Notes:
 D - Compound identified in an analysis at a secondary dilution factor.
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 ND - Non-detect
 Q - One or more QC criteria outside acceptance limits
 U - The material was analyzed for, but not detected
 MG/KG - Milligram per kilogram
 Shading indicates detection
 Bold text indicates exceedance of Residential Health-Based PSRG
 Bold box indicates exceedance of background criteria
 Underlined text indicates exceedance of Protection of Groundwater PSRG
 *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-4b

Phase II RI Subsurface Soil Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5th-SB10-03-04-0514	TR-5th-SB10D-01-03-0514	TR-5th-SB11-01-03-0514	TR-5th-SB11-03-05-0514	TR-5th-SB12-01-03-0514	TR-5th-SB12-03-05-0514	TR-5th-SB13-01-03-0514
Sample Date				5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Methylene chloride	0.023	57	--	0.0049 U	0.0047 U	0.005 U	0.005 U	0.005 U	8.00E-04 J	0.0049 U
Toluene	5.5	820	--	0.001 U	0.0009 U	0.001 U				
Semivolatile Organic Compounds (MG/KG)										
Acenaphthene	8.4	720	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Acenaphthylene	21	--	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Anthracene	660	3600	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Benzo(a)anthracene	0.18	0.16	ND	0.034 U	0.033 U	0.029 J	0.031 U	0.038 J	0.032 U	0.032 U
Benzo(a)pyrene	0.059	0.016	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Benzo(b)fluoranthene	0.6	0.16	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Benzo(g,h,i)perylene	7800	--	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Benzo(k)fluoranthene	5.9	1.6	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Chrysene	18	16	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Dibenz(a,h)anthracene	0.19	0.016	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Fluoranthene	330	480	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.026 J	0.032 U	0.032 U
Fluorene	56	480	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Indeno(1,2,3-cd)pyrene	2	0.15	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Phenanthrene	68	--	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.035 U	0.032 U	0.032 U
Pyrene	220	360	ND	0.034 U	0.033 U	0.033 U	0.031 U	0.02 J	0.032 U	0.032 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	0.14	1*	--	0.025 U	0.024 U	0.026 JQ	0.023 UQ	0.045 JQ	0.024 U	0.02 JPQ
Aroclor-1260	0.14	1*	--	0.025 U	0.024 U	0.048 J	0.072	0.066	0.024 U	0.089
Total Metals (MG/KG)										
Antimony	0.9	6.2	ND	1.01 U	0.97 U	1.06 J	0.929 U	1.02 U	0.945 U	0.943 U
Arsenic	5.8	0.68	3.74	3.01 J	1.93 J	2.14 J	1.76 J	1.94 J	2.04 J	2.87 J
Barium	580	3,000	134	68.5	72.9	54.7	67.1	61.8	88.7	109
Cadmium	3	14	0.878	0.177 U	0.121 U	0.155 J	0.0287 J	0.536	0.131 U	0.0791 J
Chromium	360,000	24,000	38.5	29.4	16.8	18.9	14.7	25.5	13.4	26.2
Cobalt	0.9	4.6	4.64	3.34	3.14	5.84	3.09	3.44	3.9	4.67
Iron	150	11,000	14,100	9,060	6,730	9,530	6,040	9,760	5,790	10,500
Lead	270	400	47.9	6.62	7.49	26.8	6.79	77.3	6.44	23.9
Mercury	1	1.9	0.0366	0.0215 J	0.0358	0.139	0.0837	0.117	0.0453	0.0805
Nickel	130	300	16.8	11.8	7.2	7.27	7.36	13.9	7.94	12.4
Silver	3.4	78	ND	0.277 U	0.267 U	0.268 U	0.255 U	0.0882 J	0.26 U	0.069 J
Zinc	1,200	4,600	87.3	20.9	18.3	60.9	23	216 D	21.3	36.6

Notes:
 D - Compound identified in an analysis at a secondary dilution factor.
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 ND - Non-detect
 Q - One or more QC criteria outside acceptance limits
 U - The material was analyzed for, but not detected
 MG/KG - Milligram per kilogram
 Shading indicates detection
 Bold text indicates exceedance of Residential Health-Based PSRG
 Bold box indicates exceedance of background criteria
 Underlined text indicates exceedance of Protection of Groundwater PSRG
 *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-4b

Phase II RI Subsurface Soil Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5th-SB13-03-05-0514	TR-5th-SB14-01-03-0514	TR-5th-SB14-03-05-0514	TR-5th-SB15-01-03-0514	TR-5th-SB16-01-03-0514	TR-5th-SB16-03-04-0514	TR-5th-SB17-01-03-0514
Sample Date				5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14	5/7/14
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Methylene chloride	0.023	57	--	0.0053 U	0.0049 U	0.0056 U	0.0066 U	0.0053 U	7.00E-04 J	0.0056 U
Toluene	5.5	820	--	0.0011 U	0.001 U	0.0011 U	0.0017 J	0.0011 U	0.001 U	0.0011 U
Semivolatile Organic Compounds (MG/KG)										
Acenaphthene	8.4	720	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Acenaphthylene	21	--	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Anthracene	660	3600	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Benzo(a)anthracene	0.18	0.16	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.028 J	0.046
Benzo(a)pyrene	0.059	0.016	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.053
Benzo(b)fluoranthene	0.6	0.16	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.089
Benzo(g,h,i)perylene	7800	--	ND	0.034 U	0.033 U	0.034 U	0.037 J	0.034 J	0.032 U	0.069
Benzo(k)fluoranthene	5.9	1.6	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.028 J
Chrysene	18	16	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Dibenz(a,h)anthracene	0.19	0.016	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Fluoranthene	330	480	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Fluorene	56	480	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Indeno(1,2,3-cd)pyrene	2	0.15	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.02 J	0.032 U	0.051
Phenanthrene	68	--	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.034 U
Pyrene	220	360	ND	0.034 U	0.033 U	0.034 U	0.036 U	0.033 U	0.032 U	0.025 J
Pesticide/Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	0.14	1*	--	0.025 U	0.024 U	0.025 U	0.026 U	0.025 U	0.024 U	0.21
Aroclor-1260	0.14	1*	--	0.025 U	0.024 U	0.025 U	0.026 U	0.035 J	0.024 U	0.18
Total Metals (MG/KG)										
Antimony	0.9	6.2	ND	1 U	0.972 U	1 U	1.06 U	0.986 U	0.945 U	0.434 J
Arsenic	5.8	0.68	3.74	1.81 J	2.02 J	3.16	1.34 J	5.21	2.05 J	3.21 J
Barium	580	3,000	134	105	85.6	69.3	10.7	143	65.1	58.1
Cadmium	3	14	0.878	0.163 U	0.164 U	0.146 U	0.0492 J	0.411	0.16 U	0.51
Chromium	360,000	24,000	38.5	36.1	28.1	24.6	2.66	12.1	26.5	28.3
Cobalt	0.9	4.6	4.64	4.05	3.56	3.56	0.773	4	3.06	3.75
Iron	150	11,000	14,100	11,100	9,420	9,560	1,410	6,780	10,000	10,800
Lead	270	400	47.9	8.92	7.24	5.34	2.64	73.9	6.87	101
Mercury	1	1.9	0.0366	0.0167 J	0.019 J	0.00535 J	0.0123 J	0.0313	0.027	0.401
Nickel	130	300	16.8	14.6	11.5	11.3	1.64	7.95	11.7	22.9
Silver	3.4	78	ND	0.276 U	0.267 U	0.276 U	0.29 U	0.271 U	0.26 U	0.0717 J
Zinc	1,200	4,600	87.3	26.5	26.6	21.8	4.59	244 D	22.3	72.8

Notes:
 D - Compound identified in an analysis at a secondary dilution factor.
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 ND - Non-detect
 Q - One or more QC criteria outside acceptance limits
 U - The material was analyzed for, but not detected
 MG/KG - Milligram per kilogram
 Shading indicates detection
 Bold text indicates exceedance of Residential Health-Based PSRG
 Bold box indicates exceedance of background criteria
 Underlined text indicates exceedance of Protection of Groundwater PSRG
 *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-4b

Phase II RI Subsurface Soil Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5th-SB18-01-03-0514 5/7/14	TR-5th-SB18-03-05-0514 5/7/14	TR-5th-SB18D-01-03-0514 5/7/14
Chemical Name						
Volatile Organic Compounds (MG/KG)						
Methylene chloride	0.023	57	--	0.005 U	0.0056 U	0.0053 U
Toluene	5.5	820	--	0.001 U	0.0011 U	0.0011 U
Semivolatile Organic Compounds (MG/KG)						
Acenaphthene	8.4	720	ND	0.018 J	0.03 U	0.032 U
Acenaphthylene	21	--	ND	0.086	0.03 U	0.032 U
Anthracene	660	3600	ND	0.17	0.03 U	0.067
Benzo(a)anthracene	0.18	0.16	ND	<u>0.52</u>	0.03 J	<u>0.25</u>
Benzo(a)pyrene	0.059	0.016	ND	<u>0.38</u>	0.03 U	<u>0.19</u>
Benzo(b)fluoranthene	0.6	0.16	ND	<u>0.66</u>	0.03 U	<u>0.35</u>
Benzo(g,h,i)perylene	7800	--	ND	0.2	0.03 U	0.11
Benzo(k)fluoranthene	5.9	1.6	ND	0.28	0.03 U	0.12
Chrysene	18	16	ND	0.52	0.014 J	0.25
Dibenz(a,h)anthracene	0.19	0.016	ND	<u>0.088</u>	0.03 U	<u>0.038 J</u>
Fluoranthene	330	480	ND	1.2	0.03 U	0.43
Fluorene	56	480	ND	0.027 J	0.03 U	0.032 U
Indeno(1,2,3-cd)pyrene	2	0.15	ND	<u>0.22 Q</u>	0.03 UQ	0.11 Q
Phenanthrene	68	--	ND	0.24	0.03 U	0.057
Pyrene	220	360	ND	1.2	0.03 U	0.48
Pesticide/Polychlorinated Biphenyls (MG/KG)						
Aroclor-1254	0.14	1*	--	0.18 PQ	0.25 PQ	0.19
Aroclor-1260	0.14	1*	--	<u>0.16</u>	0.11	<u>0.23</u>
Total Metals (MG/KG)						
Antimony	0.9	6.2	ND	0.599 J	0.9 U	0.952 U
Arsenic	5.8	0.68	3.74	<u>6.44 D</u>	1.65 J	2.41 JD
Barium	580	3,000	134	85.1 D	44.2	61.1 D
Cadmium	3	14	0.878	<u>7.19 D</u>	0.111 J	0.539 D
Chromium	360,000	24,000	38.5	25.2 D	14.1	20.4 D
Cobalt	0.9	4.6	4.64	<u>3.89 D</u>	<u>2.37</u>	<u>3.1 D</u>
Iron	150	11,000	14,100	<u>20,900 D</u>	6,420	<u>23,600 D</u>
Lead	270	400	47.9	<u>890 D</u>	39.8	92 D
Mercury	1	1.9	0.0366	0.0765	0.196	0.0687
Nickel	130	300	16.8	11.8 D	6.6	13.6 D
Silver	3.4	78	ND	0.138 J	0.248 U	0.262 U
Zinc	1,200	4,600	87.3	483 D	35.8	103 D

Notes:

- D - Compound identified in an analysis at a secondary dilution factor.
- J - Analyte present. Value may or may not be accurate or precise
- P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
- ND - Non-detect
- Q - One or more QC criteria outside acceptance limits
- U - The material was analyzed for, but not detected
- MG/KG - Milligram per kilogram
- Shading indicates detection
- Bold text indicates exceedance of Residential Health-Based PSRG**
- Boxed text indicates exceedance of background criteria**
- Underlined text indicates exceedance of Protection of Groundwater PSRG
- *For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

Attachment B5
Waste Characterization Raw Analytical Results

TABLE B-5

Waste Characterization Raw Analytical Results
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-WC01-050614		TR-WC02-050614		TR-WC03-050614		TR-WC04-050614		TR-WC05-050614		TR-WC06-050614		TR-WC07-050614		TR-WC08-050714		TR-WC09-050714		TR-WC10-050714		TR-WC11-050714		TR-WC12-050714	
Sample Date	5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/6/2014		5/7/2014		5/7/2014		5/7/2014		5/7/2014		5/7/2014	
Sample Interval (ft bgs)	0-5		0-6		0-5		0-6		0-4		0-4		0-6		0-4		0-4		0-4		0-4		0-4	
Chemical Name																								
TCLP Volatile Organic Compounds (MG/L)																								
1,1-Dichloroethene	0.1 UD	NS																						
1,2-Dichloroethane	0.1 UD	NS																						
2-Butanone	1 UD	NS																						
Benzene	0.1 UD	NS																						
Carbon tetrachloride	0.1 UD	NS																						
Chlorobenzene	0.1 UD	NS																						
Chloroform	0.1 UD	NS																						
Tetrachloroethene	0.1 UD	NS																						
Trichloroethene	0.1 UD	NS																						
Vinyl chloride	0.1 UD	NS																						
TCLP Semivolatile Organic Compounds (MG/L)																								
1,4-Dichlorobenzene	0.03 UQ	0.03 U																						
2,4,5-Trichlorophenol	0.03 UQ	0.03 U																						
2,4,6-Trichlorophenol	0.04 U	0.04 U																						
2,4-Dinitrotoluene	0.03 U	0.03 U																						
2-Methylphenol	0.03 U	0.03 U																						
3- and 4-Methylphenol	0.04 U	0.04 U																						
Hexachlorobenzene	0.03 UQ	0.03 U																						
Hexachlorobutadiene	0.03 UQ	0.03 UQ																						
Hexachloroethane	0.02 UQ	0.02 U																						
Nitrobenzene	0.03 U	0.03 UQ																						
Pentachlorophenol	0.04 U	0.04 UQ																						
Pyridine	0.03 U	0.03 U																						
TCLP Pesticides (MG/L)																								
Endrin	0.00005 U	NS																						
gamma-BHC (Lindane)	0.00005 UQ	NS																						
Heptachlor	0.00005 U	NS																						
Heptachlor epoxide	0.00005 U	NS																						
Methoxychlor	0.00005 U	NS	0.00005 UQ	NS																				
technical-Chlordane	0.0005 U	NS																						
Toxaphene	0.0005 U	NS																						
TCLP Herbicides (MG/L)																								
2,4,5-TP (Silvex)	0.0005 U	NS																						
2,4-D	0.0005 U	NS																						
TCLP Metals (MG/L)																								
Arsenic	2.5 UD	NS																						
Barium	0.639 JD	NS	0.767 JD	NS	2 UD	NS	1.17 JD	NS	1.51 JD	NS	1.18 JD	NS	2 UD	NS	2 UD	NS	0.766 JD	NS	2 UD	NS	0.896 JD	NS	2 UD	NS
Cadmium	1 UD	NS	0.0411 JD	NS	1 UD	NS	1 UD	NS	1 UD	NS	0.0328 JD	NS	1 UD	NS	0.0774 JD	NS	1 UD	NS						
Chromium	0.75 UD	NS																						
Lead	0.0825 JD	NS	0.096 JD	NS	0.15 UD	NS	1.12 D	NS	0.171 JD	NS	1.09 D	NS	0.15 UD	NS	0.647 D	NS	0.0978 JD	NS	0.476 D	NS	0.15 UD	NS	0.15 UD	NS
Mercury	0.0007 U	NS																						
Selenium	0.65 UD	NS																						
Silver	0.029 UD	NS																						
Wet Chemistry (pH UNITS)																								
pH	7.1	NS	7.1	NS	7.5	NS	7.6	NS	7.5	NS	7.4	NS	6.9	NS	6.8	NS	7.3	NS	5.2	NS	6.7	NS	6.7	NS
Reactivity (MG/KG)																								
Reactive cyanide	250 U	NS																						
Reactive sulfide	500 U	NS																						
Ignitability (DEG/F)																								
Ignitability	>200	NS																						

Notes:
 D - Compound identified in an analysis at a secondary dilution factor.
 J - Below reporting limit
 NS - Not sampled
 U - The material was analyzed for, but not detected
 Q - One or more QC criteria outside acceptance limits
 DEG/F - Degrees Fahrenheit
 MG/KG - Milligram per kilogram
 MG/L - Milligram per liter

Attachment B6
PCB Delineation Raw Analytical Results

TABLE B-6

PCB Delineation Raw Analytical Results**TRDA RA Construction Completion/RA Completion Report****Harvey Point Defense Testing Activity****Hertford, North Carolina**

Sample ID	TR-5th-SS07-0514	TR-5TH-SS07-0.5-01-0614	TR-5TH-SS07-E1-0614	TR-5TH-SS07-N1-0614	TR-5TH-SS07-W1-0614
Sample Date	5/5/2014	6/27/2014	6/27/2014	6/27/2014	6/27/2014
Chemical Name					
Pesticide/Polychlorinated Biphenyls (MG/KG)					
Aroclor-1016	NS	0.023 U	0.022 U	0.021 U	0.022 U
Aroclor-1221	NS	0.023 U	0.022 U	0.021 U	0.022 U
Aroclor-1232	NS	0.023 U	0.022 U	0.021 U	0.022 U
Aroclor-1242	NS	0.023 U	0.022 U	0.021 U	0.022 U
Aroclor-1248	NS	0.023 U	0.022 U	0.021 U	0.022 U
Aroclor-1254	12 DPQ	0.023 U	0.59 Q	0.4	0.46
Aroclor-1260	60 D	0.023 U	2.1 D	1.4 D	1.4 D
Aroclor-1262	NS	0.023 U	0.022 U	0.021 U	0.022 U
Aroclor-1268	NS	0.023 U	0.022 U	0.021 U	0.022 U
Total PCBs*	72	0.1035 U	2.767	1.8735	1.937

Notes:

D - Compound identified in an analysis at a secondary dilution factor.

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

Q - One or more QC criteria recovered outside acceptance limits

U - The material was analyzed for, but not detected

MG/KG - Milligram per kilogram

NS - Not Sampled

*With the exception of sample TR-5TH-SS07-0514, in which total PCBs is equal to the sum of Aroclor-1254 and Aroclor-1260; total PCBs is equal to the sum of the following PCBs: Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, and Aroclor-1268

**Attachment B7
Confirmation Sampling Data – 2nd Street
Disposal Area**

TABLE B-7a

Confirmation Sampling Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2ND-CSF01-1015	TR-2ND-CSF02-1015	TR-2ND-CSF03-1015	TR-2ND-CSF03D-1015	TR-2ND-CSF04-1015	TR-2ND-CSF04A-1015	TR-2ND-CSF05-1015	TR-2ND-CSF06-1015	TR-2ND-CSF07-1015	TR-2ND-CSF08-1015	TR-2ND-CSF09-1015
Sample Date	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/26/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15
Chemical Name											
Volatile Organic Compounds (MG/KG)											
1,1,1-Trichloroethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,1,2,2-Tetrachloroethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
1,1,2-Trichloroethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,1-Dichloroethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,1-Dichloroethene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,2,3-Trichlorobenzene	0.00278 XQU	0.00303 XQU	0.00284 XQU	0.00291 XQU	NS	0.00261 XU	0.00272 XQU	0.00281 XQU	0.00283 XQU	0.00312 XQU	0.0031 XQU
1,2,4-Trichlorobenzene	0.00278 XQU	0.00303 XQU	0.00284 XQU	0.00291 XQU	NS	0.00261 XU	0.00272 XQU	0.00281 XQU	0.00283 XQU	0.00312 XQU	0.0031 XQU
1,2-Dibromo-3-chloropropane	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
1,2-Dibromoethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,2-Dichlorobenzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,2-Dichloroethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,2-Dichloropropane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,3-Dichlorobenzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,4-Dichlorobenzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
1,4-Dioxane	0.111 U	0.121 U	0.114 U	0.116 U	NS	0.104 U	0.109 U	0.112 U	0.113 U	0.125 U	0.124 U
2-Butanone	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
2-Hexanone	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
4-Methyl-2-pentanone	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Acetone	0.00865 J	0.00929 J	0.00879 J	0.0163 J	NS	0.015 J	0.0105 J	0.00971 J	0.00852 J	0.00952 J	0.0117 J
Benzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Bromochloromethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Bromodichloromethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Bromoform	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Bromomethane	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Carbon disulfide	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Carbon tetrachloride	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Chlorobenzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Chloroethane	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Chloroform	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Chloromethane	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
cis-1,2-Dichloroethene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
cis-1,3-Dichloropropene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Cyclohexane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Dibromochloromethane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Dichlorodifluoromethane (Freon-12)	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Ethylbenzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Isopropylbenzene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
m- and p-Xylene	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Methyl Acetate	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Methylcyclohexane	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Methylene chloride	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Methyl-tert-Butyl Ether (MTBE)	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
o-Xylene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Styrene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Tetrachloroethene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Toluene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
trans-1,2-Dichloroethene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
trans-1,3-Dichloropropene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Trichloroethene	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Trichlorofluoromethane (Freon-11)	0.00556 U	0.00606 U	0.00569 U	0.00582 U	NS	0.00521 U	0.00544 U	0.00561 U	0.00566 U	0.00625 U	0.0062 U
Vinyl chloride	0.00278 U	0.00303 U	0.00284 U	0.00291 U	NS	0.00261 U	0.00272 U	0.00281 U	0.00283 U	0.00312 U	0.0031 U
Xylene, Total	0.00834 U	0.00909 U	0.00853 U	0.00873 U	NS	0.00782 U	0.00815 U	0.00842 U	0.00849 U	0.00937 U	0.0093 U
Semivolatile Organic Compounds (MG/KG)											
Benzo(a)anthracene	0.00314 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	NS	0.0022 J	0.00411 U	0.00419 U	0.00414 U	0.00413 U
Benzo(a)pyrene	0.00288 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	NS	0.004 U	0.00411 U	0.00419 U	0.00414 U	0.00413 U
Benzo(b)fluoranthene	0.00437 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	NS	0.004 U	0.00411 U	0.00419 U	0.00414 U	0.00413 U
Dibenz(a,h)anthracene	0.00416 U	0.00412 U	0.00401 U	0.00401 U	0.00391 U	NS	0.004 U	0.00411 U	0.00419 U	0.00414 U	0.00413 U
Indeno(1,2,3-cd)pyrene	0.00273 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	NS	0.004 U	0.00411 U	0.00419 U	0.00414 U	0.00413 U
Naphthalene	0.00416 U	0.00412 U	0.00401 U	0.00401 U	0.00391 U	NS	0.004 U	0.00411 U	0.00419 U	0.00414 U	0.00413 U

TABLE B-7a

Confirmation Sampling Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2ND-CSF01-1015	TR-2ND-CSF02-1015	TR-2ND-CSF03-1015	TR-2ND-CSF03D-1015	TR-2ND-CSF04-1015	TR-2ND-CSF04A-1015	TR-2ND-CSF05-1015	TR-2ND-CSF06-1015	TR-2ND-CSF07-1015	TR-2ND-CSF08-1015	TR-2ND-CSF09-1015
Sample Date	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/26/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15
Chemical Name											
Pesticide/Polychlorinated Biphenyls (MG/KG)											
Aroclor-1254	0.0103 U	0.0105 U	0.0104 U	0.0103 U	0.00995 U	NS	0.0101 U	0.0104 U	0.0101 U	0.00995 U	0.0102 U
Aroclor-1260	0.0103 U	0.0105 U	0.0104 U	0.0103 U	0.00995 U	NS	0.0101 U	0.0104 U	0.0101 U	0.00995 U	0.0102 U
Explosives (MG/KG)											
1,3,5-Trinitrobenzene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
1,3-Dinitrobenzene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
2,4,6-Trinitrotoluene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
2,4-Dinitrotoluene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
2,6-Dinitrotoluene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
2-Amino-4,6-dinitrotoluene	0.04 QU	0.0385 QU	0.0388 QU	0.0381 QU	0.0385 QU	NS	0.0388 QU	0.04 QU	0.0381 QU	0.0377 QU	0.037 QU
2-Nitrotoluene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
3,5-Dinitroaniline	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
3-Nitrotoluene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
4-Amino-2,6-dinitrotoluene	0.04 QU	0.0385 QU	0.0388 QU	0.0381 QU	0.0385 QU	NS	0.0388 QU	0.04 QU	0.0381 QU	0.0377 QU	0.037 QU
4-Nitrotoluene	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
HMX	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
Nitrobenzene	0.04 QU	0.0385 QU	0.0388 QU	0.0381 QU	0.0385 QU	NS	0.0388 QU	0.04 QU	0.0381 QU	0.0377 QU	0.037 QU
Nitroglycerin	0.1 U	0.0962 U	0.0971 U	0.0952 U	0.0962 U	NS	0.0971 U	0.1 U	0.0952 U	0.0943 U	0.0926 U
Perchlorate	0.0025 U	0.0025 U	0.0024 U	0.0024 U	0.00244 U	NS	0.00246 U	0.00246 U	0.00242 U	0.00246 U	0.00244 U
PETN	0.1 U	0.0962 U	0.0971 U	0.0952 U	0.0962 U	NS	0.0971 U	0.1 U	0.0952 U	0.0943 U	0.0926 U
RDX	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
Tetryl	0.04 U	0.0385 U	0.0388 U	0.0381 U	0.0385 U	NS	0.0388 U	0.04 U	0.0381 U	0.0377 U	0.037 U
Total Metals (MG/KG)											
Antimony	0.591 MNU	0.513 MNU	0.501 MNU	0.507 MNU	0.549 MNU	NS	0.494 MNU	0.517 MNU	0.502 MNU	0.632 MNU	0.571 MNU
Arsenic	3.67	4.7	4.13	4.29	3.81	NS	3.55	4	3.66	3.63	4.3
Cadmium	0.131 U	0.128 U	0.125 U	0.127 U	0.122 U	NS	0.124 U	0.129 U	0.126 U	0.126 U	0.127 U
Cobalt	3.3	4.32	4.32	4.22	4.07	NS	4.12	4.11	3.96	4.28	4.24
Copper	10.7	10.5	11.2	10.5	9.89	NS	9.79	13.8	10	10.2	9.61
Iron	9,460	9,910	10,500	10,100	10,300	NS	10,200	10,200	9,430	10,100	10,500
Lead	4.65 E	4.97	6.64	5.7	5.95	NS	5.5	5.79	5.21	5.73	5.45
Manganese	87.9 N	88.4 N	91 N	92.7 N	91.1 N	NS	81.8 N	82.7 N	91.3 N	91.9 N	86 N
Mercury	0.0168 J	0.0337 U	0.0333 U	0.0286 J	0.0213 J	NS	0.0246 J	0.0302 J	0.022 J	0.0221 J	0.0201 J
Silver	0.131 MU	0.128 MU	0.125 MU	0.127 MU	0.122 MU	NS	0.124 MU	0.129 U	0.126 MU	0.126 MU	0.127 MU
Vanadium	22.7	24.4	26.2	25.2	25.6	NS	25.9	25.1	24.8	25.3	25
Zinc	22.6 EN	26.1 N	29.4 N	25.9 N	25.7 N	NS	24.5 N	26.3 N	23.7 N	26.4 N	25 N

- Notes:**
 E - Concentration exceeds calibration range
 J - Analyte present. Value may or may not be accurate or precise
 MG/KG - Milligram per kilogram
 M - Sample matrix interfered with the quantitation of the analyte; DL/LOD/LOQ have been raised.
 N - MS/MSD accuracy and/or precision are outside acceptance limits
 NS - Not sampled
 Q - LCS/LCSD accuracy and/or precision are outside acceptance limits
 U - The material was analyzed for, but not detected
 X - Potential positive bias due to an ICV or CCV exceedance
 Y - Potential negative bias due to an ICV or CCV exceedance

TABLE B-7a

Confirmation Sampling Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2ND-CSF10-1015	TR-2ND-CSF10D-1015	TR-2ND-CSF11-1015	TR-2ND-CSF12-1015	TR-2ND-CSW01-1015	TR-2ND-CSW02-1015	TR-2ND-CSW02D-1015	TR-2ND-CSW03-1015	TR-2ND-CSW04-1015	TR-2ND-CSW05-1015	TR-2ND-CSW06-1015
Sample Date	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15
Chemical Name											
Volatile Organic Compounds (MG/KG)											
1,1,1-Trichloroethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,1,2,2-Tetrachloroethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 XQU	0.00275 XQU	0.00269 XQU	0.00255 XQU	0.00279 XQU	0.00278 XQU
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
1,1,2-Trichloroethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,1-Dichloroethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,1-Dichloroethene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,2,3-Trichlorobenzene	0.00292 XQU	0.00309 XQU	0.00287 XQU	0.00281 XQU	0.00259 XQU	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,2,4-Trichlorobenzene	0.00292 XQU	0.00309 XQU	0.00287 XQU	0.00281 XQU	0.00259 XQU	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,2-Dibromo-3-chloropropane	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
1,2-Dibromoethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,2-Dichlorobenzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,2-Dichloroethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,2-Dichloropropane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,3-Dichlorobenzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 XU	0.00275 XU	0.00269 XU	0.00255 XU	0.00279 XU	0.00278 XU
1,4-Dichlorobenzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
1,4-Dioxane	0.117 U	0.124 U	0.115 U	0.113 U	0.103 U	0.107 QU	0.11 QU	0.108 QU	0.102 QU	0.112 QU	0.111 QU
2-Butanone	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
2-Hexanone	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
4-Methyl-2-pentanone	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Acetone	0.0114 J	0.00962 J	0.00924 J	0.00819 J	0.00886 J	0.00829 YJ	0.0107 YJ	0.00834 YJ	0.00946 YJ	0.0107 YJ	0.0114 YJ
Benzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 QU	0.00275 QU	0.00269 QU	0.00255 QU	0.00279 QU	0.00278 QU
Bromochloromethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Bromodichloromethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Bromoform	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Bromomethane	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Carbon disulfide	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Carbon tetrachloride	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Chlorobenzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Chloroethane	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Chloroform	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Chloromethane	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
cis-1,2-Dichloroethene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
cis-1,3-Dichloropropene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 QU	0.00275 QU	0.00269 QU	0.00255 QU	0.00279 QU	0.00278 QU
Cyclohexane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Dibromochloromethane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Dichlorodifluoromethane (Freon-12)	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Ethylbenzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Isopropylbenzene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
m- and p-Xylene	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Methyl Acetate	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 YU	0.00551 YU	0.00538 YU	0.00509 YU	0.00559 YU	0.00556 YU
Methylcyclohexane	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Methylene chloride	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Methyl-tert-Butyl Ether (MTBE)	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
o-Xylene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Styrene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Tetrachloroethene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Toluene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
trans-1,2-Dichloroethene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
trans-1,3-Dichloropropene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Trichloroethene	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Trichlorofluoromethane (Freon-11)	0.00585 U	0.00618 U	0.00575 U	0.00563 U	0.00517 U	0.00537 U	0.00551 U	0.00538 U	0.00509 U	0.00559 U	0.00556 U
Vinyl chloride	0.00292 U	0.00309 U	0.00287 U	0.00281 U	0.00259 U	0.00268 U	0.00275 U	0.00269 U	0.00255 U	0.00279 U	0.00278 U
Xylene, Total	0.00877 U	0.00927 U	0.00862 U	0.00844 U	0.00776 U	0.00805 U	0.00826 U	0.00806 U	0.00764 U	0.00838 U	0.00833 U
Semivolatile Organic Compounds (MG/KG)											
Benzo(a)anthracene	0.00407 U	0.00414 U	0.00406 U	0.00406 U	0.00407 U	0.00236 J	0.00411 U	0.00401 U	0.0026 J	0.00416 U	0.004 U
Benzo(a)pyrene	0.00407 U	0.00414 U	0.00406 U	0.00406 U	0.00407 U	0.00408 U	0.00411 U	0.00401 U	0.004 U	0.00416 U	0.004 U
Benzo(b)fluoranthene	0.00407 U	0.00414 U	0.00406 U	0.00406 U	0.00407 U	0.00255 J	0.00411 U	0.00401 U	0.00328 J	0.00416 U	0.004 U
Dibenz(a,h)anthracene	0.00407 U	0.00414 U	0.00406 U	0.00406 U	0.00407 U	0.00408 U	0.00411 U	0.00401 U	0.004 U	0.00416 U	0.004 U
Indeno(1,2,3-cd)pyrene	0.00407 U	0.00414 U	0.00406 U	0.00406 U	0.00407 U	0.00408 U	0.00411 U	0.00401 U	0.00237 J	0.00416 U	0.004 U
Naphthalene	0.00407 U	0.00414 U	0.00406 U	0.00406 U	0.00407 U	0.00408 U	0.00411 U	0.00401 U	0.004 U	0.00416 U	0.004 U

TABLE B-7a

Confirmation Sampling Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2ND-CSF10-1015	TR-2ND-CSF10D-1015	TR-2ND-CSF11-1015	TR-2ND-CSF12-1015	TR-2ND-CSW01-1015	TR-2ND-CSW02-1015	TR-2ND-CSW02D-1015	TR-2ND-CSW03-1015	TR-2ND-CSW04-1015	TR-2ND-CSW05-1015	TR-2ND-CSW06-1015
Sample Date	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15	10/23/15
Chemical Name											
Pesticide/Polychlorinated Biphenyls (MG/KG)											
Aroclor-1254	0.0102 U	0.0104 U	0.0105 U	0.00981 U	0.0101 U	0.00997 U	0.0101 U	0.00981 U	0.0102 U	0.0101 U	0.0101 U
Aroclor-1260	0.0102 U	0.0104 U	0.0105 U	0.00981 U	0.0101 U	0.00997 U	0.0101 U	0.00981 U	0.0102 U	0.0101 U	0.0101 U
Explosives (MG/KG)											
1,3,5-Trinitrobenzene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
1,3-Dinitrobenzene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
2,4,6-Trinitrotoluene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
2,4-Dinitrotoluene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
2,6-Dinitrotoluene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
2-Amino-4,6-dinitrotoluene	0.0377 QU	0.0367 QU	0.0377 QU	0.0385 QU	0.0374 QU	0.037 QU	0.0396 QU	0.0385 QU	0.04 QU	0.0351 QU	0.0377 QU
2-Nitrotoluene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
3,5-Dinitroaniline	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
3-Nitrotoluene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
4-Amino-2,6-dinitrotoluene	0.0377 QU	0.0367 QU	0.0377 QU	0.0385 QU	0.0374 QU	0.037 QU	0.0396 QU	0.0385 QU	0.04 QU	0.0351 QU	0.0377 QU
4-Nitrotoluene	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
HMX	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
Nitrobenzene	0.0377 QU	0.0367 QU	0.0377 QU	0.0385 QU	0.0374 QU	0.037 QU	0.0396 QU	0.0385 QU	0.04 QU	0.0351 QU	0.0377 QU
Nitroglycerin	0.0943 U	0.0917 U	0.0943 U	0.0962 U	0.0935 U	0.0926 U	0.099 U	0.0962 U	0.1 U	0.0877 U	0.0943 U
Perchlorate	0.0025 U	0.0025 U	0.00242 U	0.00238 U	0.0024 U	0.00248 U	0.00248 U	0.00244 U	0.0024 U	0.0024 U	0.00252 U
PETN	0.0943 U	0.0917 U	0.0943 U	0.0962 U	0.0935 U	0.0926 U	0.099 U	0.0962 U	0.1 U	0.0877 U	0.0943 U
RDX	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
Tetryl	0.0377 U	0.0367 U	0.0377 U	0.0385 U	0.0374 U	0.037 U	0.0396 U	0.0385 U	0.04 U	0.0351 U	0.0377 U
Total Metals (MG/KG)											
Antimony	0.572 MNU	0.498 MNU	0.512 MNU	0.559 MNU	0.618 MNU	0.684 MNU	0.517 MNU	0.492 MNU	0.504 MNU	0.525 MNU	0.52 MNU
Arsenic	4.26	3.96	3.89	4.21	4.66	4.06	5.49	5	4.3	3.35	4.24
Cadmium	0.127 U	0.124 U	0.128 U	0.124 U	0.124 U	0.124 U	0.129 U	0.123 U	0.126 U	0.131 U	0.13 U
Cobalt	4.15	4.21	3.99	4.58	2.89	4.5	4.45	4.31	4.14	4.78	4.13
Copper	9.96	9.72	9.7	11	7.67	11.8	9.58	10.1	10.6	12	10.4
Iron	10,500	10,000	9,650	11,700	9,440	12,000	10,900	11,000	10,300	12,000	10,000
Lead	6.14	5.89	5.51	6.99	4.03 E	7.38	5.42	5.67	6.37	7.51	5.87
Manganese	89 N	81.8 N	80 N	87 N	79.2 N	89.2 N	81.5 N	81.8 N	81.5 N	107 N	92.6 N
Mercury	0.0429 J	0.0371 J	0.029 J	0.0215 J	0.0314 U	0.0235 J	0.0211 J	0.0231 J	0.0773	0.036 J	0.0374 J
Silver	0.127 MU	0.124 U	0.128 MU	0.124 MU	0.124 MU	0.124 MU	0.129 MU	0.123 MU	0.126 MU	0.131 MU	0.13 MU
Vanadium	26.2	25.1	24.3	29.6	23.8	30	26.6	27.2	25.7	29.6	25.5
Zinc	24.6 N	25.6 N	24.3 N	33.1 N	17.5 EN	27.3 N	25.5 N	25.5 N	26.9 N	33.4 N	32.8 N

- Notes:**
 E - Concentration exceeds calibration range
 J - Analyte present. Value may or may not be accurate or precise
 MG/KG - Milligram per kilogram
 M - Sample matrix interfered with the quantitation of the analyte; DL/LOD/LOQ have been raised.
 N - MS/MSD accuracy and/or precision are outside acceptance limits
 NS - Not sampled
 Q - LCS/LCSD accuracy and/or precision are outside acceptance limits
 U - The material was analyzed for, but not detected
 X - Potential positive bias due to an ICV or CCV exceedance
 Y - Potential negative bias due to an ICV or CCV exceedance

Confirmation Sampling Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2ND-CSW07-1015	TR-2ND-CSW08-1015	TR-2ND-CSW09-1015
Sample Date	10/23/15	10/23/15	10/23/15
Chemical Name			
Volatile Organic Compounds (MG/KG)			
1,1,1-Trichloroethane	0.00279 U	0.00339 U	0.0028 U
1,1,2,2-Tetrachloroethane	0.00279 XQU	0.00339 XQU	0.0028 XQU
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.00559 U	0.00679 U	0.00561 U
1,1,2-Trichloroethane	0.00279 U	0.00339 U	0.0028 U
1,1-Dichloroethane	0.00279 U	0.00339 U	0.0028 U
1,1-Dichloroethene	0.00279 U	0.00339 U	0.0028 U
1,2,3-Trichlorobenzene	0.00279 U	0.00339 U	0.0028 U
1,2,4-Trichlorobenzene	0.00279 U	0.00339 U	0.0028 U
1,2-Dibromo-3-chloropropane	0.00559 U	0.00679 U	0.00561 U
1,2-Dibromoethane	0.00279 U	0.00339 U	0.0028 U
1,2-Dichlorobenzene	0.00279 U	0.00339 U	0.0028 U
1,2-Dichloroethane	0.00279 U	0.00339 U	0.0028 U
1,2-Dichloropropane	0.00279 U	0.00339 U	0.0028 U
1,3-Dichlorobenzene	0.00279 XU	0.00339 XU	0.0028 XU
1,4-Dichlorobenzene	0.00279 U	0.00339 U	0.0028 U
1,4-Dioxane	0.112 QU	0.136 QU	0.112 QU
2-Butanone	0.00559 U	0.00679 U	0.00561 U
2-Hexanone	0.00559 U	0.00679 U	0.00561 U
4-Methyl-2-pentanone	0.00559 U	0.00679 U	0.00561 U
Acetone	0.00937 YJ	0.01 YJ	0.0101 YJ
Benzene	0.00279 QU	0.00339 QU	0.0028 QU
Bromochloromethane	0.00279 U	0.00339 U	0.0028 U
Bromodichloromethane	0.00279 U	0.00339 U	0.0028 U
Bromoform	0.00279 U	0.00339 U	0.0028 U
Bromomethane	0.00559 U	0.00679 U	0.00561 U
Carbon disulfide	0.00279 U	0.00339 U	0.0028 U
Carbon tetrachloride	0.00279 U	0.00339 U	0.0028 U
Chlorobenzene	0.00279 U	0.00339 U	0.0028 U
Chloroethane	0.00559 U	0.00679 U	0.00561 U
Chloroform	0.00279 U	0.00339 U	0.0028 U
Chloromethane	0.00559 U	0.00679 U	0.00561 U
cis-1,2-Dichloroethene	0.00279 U	0.00339 U	0.0028 U
cis-1,3-Dichloropropene	0.00279 QU	0.00339 QU	0.0028 QU
Cyclohexane	0.00279 U	0.00339 U	0.0028 U
Dibromochloromethane	0.00279 U	0.00339 U	0.0028 U
Dichlorodifluoromethane (Freon-12)	0.00559 U	0.00679 U	0.00561 U
Ethylbenzene	0.00279 U	0.00339 U	0.0028 U
Isopropylbenzene	0.00279 U	0.00339 U	0.0028 U
m- and p-Xylene	0.00559 U	0.00679 U	0.00561 U
Methyl Acetate	0.00559 YU	0.00679 YU	0.00561 YU
Methylcyclohexane	0.00279 U	0.00339 U	0.0028 U
Methylene chloride	0.00559 U	0.00679 U	0.00561 U
Methyl-tert-Butyl Ether (MTBE)	0.00279 U	0.00339 U	0.0028 U
o-Xylene	0.00279 U	0.00339 U	0.0028 U
Styrene	0.00279 U	0.00339 U	0.0028 U
Tetrachloroethene	0.00279 U	0.00339 U	0.0028 U
Toluene	0.00279 U	0.00339 U	0.0028 U
trans-1,2-Dichloroethene	0.00279 U	0.00339 U	0.0028 U
trans-1,3-Dichloropropene	0.00279 U	0.00339 U	0.0028 U
Trichloroethene	0.00279 U	0.00339 U	0.0028 U
Trichlorofluoromethane (Freon-11)	0.00559 U	0.00679 U	0.00561 U
Vinyl chloride	0.00279 U	0.00339 U	0.0028 U
Xylene, Total	0.00838 U	0.0102 U	0.00841 U
Semivolatile Organic Compounds (MG/KG)			
Benzo(a)anthracene	0.00396 U	0.00432 U	0.00405 U
Benzo(a)pyrene	0.00396 U	0.00432 U	0.00405 U
Benzo(b)fluoranthene	0.00396 U	0.00432 U	0.00405 U
Dibenz(a,h)anthracene	0.00396 U	0.00432 U	0.00405 U
Indeno(1,2,3-cd)pyrene	0.00396 U	0.00432 U	0.00405 U
Naphthalene	0.00396 U	0.00432 U	0.00405 U

TABLE B-7a

Confirmation Sampling Raw Data - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-2ND-CSW07-1015	TR-2ND-CSW08-1015	TR-2ND-CSW09-1015
Sample Date	10/23/15	10/23/15	10/23/15
Chemical Name			
Pesticide/Polychlorinated Biphenyls (MG/KG)			
Aroclor-1254	0.0102 U	0.0105 U	0.0104 U
Aroclor-1260	0.0102 U	0.0105 U	0.0104 U
Explosives (MG/KG)			
1,3,5-Trinitrobenzene	0.0385 U	0.04 U	0.0388 U
1,3-Dinitrobenzene	0.0385 U	0.04 U	0.0388 U
2,4,6-Trinitrotoluene	0.0385 U	0.04 U	0.0388 U
2,4-Dinitrotoluene	0.0385 U	0.04 U	0.0388 U
2,6-Dinitrotoluene	0.0385 U	0.04 U	0.0388 U
2-Amino-4,6-dinitrotoluene	0.0385 QU	0.04 QU	0.0388 QU
2-Nitrotoluene	0.0385 U	0.04 U	0.0388 U
3,5-Dinitroaniline	0.0385 U	0.04 U	0.0388 U
3-Nitrotoluene	0.0385 U	0.04 U	0.0388 U
4-Amino-2,6-dinitrotoluene	0.0385 QU	0.04 QU	0.0388 QU
4-Nitrotoluene	0.0385 U	0.04 U	0.0388 U
HMX	0.0385 U	0.04 U	0.0388 U
Nitrobenzene	0.0385 QU	0.04 QU	0.0388 QU
Nitroglycerin	0.0962 U	0.1 U	0.0971 U
Perchlorate	0.0024 U	0.00246 U	0.00246 U
PETN	0.0962 U	0.1 U	0.0971 U
RDX	0.0385 U	0.04 U	0.0388 U
Tetryl	0.0385 U	0.04 U	0.0388 U
Total Metals (MG/KG)			
Antimony	0.641 MNU	0.593 MNU	0.583 MNU
Arsenic	4.64	4.37	4.38
Cadmium	0.128 U	0.132 U	0.13 U
Cobalt	4.24	4.24	4.06
Copper	9.75	9.58	10.1
Iron	9,690	9,700	9,740
Lead	4.63	4.95	4.98
Manganese	90.3 N	88.7 N	85.6 N
Mercury	0.0353 U	0.0185 J	0.0182 J
Silver	0.128 MU	0.132 MU	0.13 MU
Vanadium	23.6	23.4	23.4
Zinc	24 N	25 N	25.6 N

Notes:

E - Concentration exceeds calibration range

J - Analyte present. Value may or may not be accurate or precise

MG/KG - Milligram per kilogram

M - Sample matrix interfered with the quantitation of the analyte; DL/LOD/LOQ have been raised.

N - MS/MSD accuracy and/or precision are outside acceptance limits

NS - Not sampled

Q - LCS/LCSD accuracy and/or precision are outside acceptance limits

U - The material was analyzed for, but not detected

X - Potential positive bias due to an ICV or CCV exceedance

Y - Potential negative bias due to an ICV or CCV exceedance

TABLE B-7b

Confirmation Sampling Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2ND-CSF01-1015 10/23/15	TR-2ND-CSF02-1015 10/23/15	TR-2ND-CSF03-1015 10/23/15	TR-2ND-CSF03D-1015 10/23/15	TR-2ND-CSF04-1015 10/23/15	TR-2ND-CSF05-1015 10/23/15	TR-2ND-CSF06-1015 10/23/15
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Acetone	NA	12,000	--	0.00865 J	0.00929 J	0.00879 J	0.0163 J	0.015 J	0.0105 J	0.00971 J
Semivolatile Organic Compounds (MG/KG)										
Benzo(a)anthracene	NA	0.16	ND	0.00314 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	0.0022 J	0.00411 U
Benzo(a)pyrene	NA	0.016	ND	0.00288 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	0.004 U	0.00411 U
Benzo(b)fluoranthene	NA	0.16	ND	0.00437 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	0.004 U	0.00411 U
Indeno(1,2,3-cd)pyrene	NA	0.16	ND	0.00273 J	0.00412 U	0.00401 U	0.00401 U	0.00391 U	0.004 U	0.00411 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
No Detections										
Explosives (MG/KG)										
No Detections										
Total Metals (MG/KG)										
Arsenic	5.8	0.68	3.74	3.67	4.7	4.13	4.29	3.81	3.55	4
Cobalt	0.9	4.6	4.64	3.3	4.32	4.32	4.22	4.07	4.12	4.11
Copper	NA	620	441	10.7	10.5	11.2	10.5	9.89	9.79	13.8
Iron	NA	11,000	14,100	9,460	9,910	10,500	10,100	10,300	10,200	10,200
Lead	NA	400	47.9	4.65 E	4.97	6.64	5.7	5.95	5.5	5.79
Manganese	65	360	412	87.9 N	88.4 N	91 N	92.7 N	91.1 N	81.8 N	82.7 N
Mercury	NA	1.9	0.0366	0.0168 J	0.0337 U	0.0333 U	0.0286 J	0.0213 J	0.0246 J	0.0302 J
Vanadium	NA	78	31.9	22.7	24.4	26.2	25.2	25.6	25.9	25.1
Zinc	1,200	4,600	87.3	22.6 EN	26.1 N	29.4 N	25.9 N	25.7 N	24.5 N	26.3 N

Notes:
 E - Concentration exceeds calibration range
 J - Analyte present. Value may or may not be accurate or precise
 MG/KG - Milligram per kilogram
 N - MS/MSD accuracy and/or precision are outside acceptance limits
 NA - Protection of Groundwater SRG does not apply
 ND - Non-detect
 U - The material was analyzed for, but not detected
 Y - Potential negative bias due to an ICV or CCV exceedance
 Shading indicates detection
 Bold text indicates exceedance of Residential Health-Based PSRG
 Bold box indicates exceedance of background criteria
 Underlined text indicates exceedance of Protection of Groundwater PSRG

TABLE B-7b

Confirmation Sampling Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2ND-CSF07-1015 10/23/15	TR-2ND-CSF08-1015 10/23/15	TR-2ND-CSF09-1015 10/23/15	TR-2ND-CSF10-1015 10/23/15	TR-2ND-CSF10D-1015 10/23/15	TR-2ND-CSF11-1015 10/23/15	TR-2ND-CSF12-1015 10/23/15
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Acetone	NA	12,000	--	0.00852 J	0.00952 J	0.0117 J	0.0114 J	0.00962 J	0.00924 J	0.00819 J
Semivolatile Organic Compounds (MG/KG)										
Benzo(a)anthracene	NA	0.16	ND	0.00419 U	0.00414 U	0.00413 U	0.00407 U	0.00414 U	0.00406 U	0.00406 U
Benzo(a)pyrene	NA	0.016	ND	0.00419 U	0.00414 U	0.00413 U	0.00407 U	0.00414 U	0.00406 U	0.00406 U
Benzo(b)fluoranthene	NA	0.16	ND	0.00419 U	0.00414 U	0.00413 U	0.00407 U	0.00414 U	0.00406 U	0.00406 U
Indeno(1,2,3-cd)pyrene	NA	0.16	ND	0.00419 U	0.00414 U	0.00413 U	0.00407 U	0.00414 U	0.00406 U	0.00406 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
No Detections										
Explosives (MG/KG)										
No Detections										
Total Metals (MG/KG)										
Arsenic	5.8	0.68	3.74	3.66	3.63	4.3	4.26	3.96	3.89	4.21
Cobalt	0.9	4.6	4.64	<u>3.96</u>	<u>4.28</u>	<u>4.24</u>	<u>4.15</u>	<u>4.21</u>	<u>3.99</u>	<u>4.58</u>
Copper	NA	620	441	10	10.2	9.61	9.96	9.72	9.7	11
Iron	NA	11,000	14,100	9,430	10,100	10,500	10,500	10,000	9,650	11,700
Lead	NA	400	47.9	5.21	5.73	5.45	6.14	5.89	5.51	6.99
Manganese	65	360	412	<u>91.3 N</u>	<u>91.9 N</u>	<u>86 N</u>	<u>89 N</u>	<u>81.8 N</u>	<u>80 N</u>	<u>87 N</u>
Mercury	NA	1.9	0.0366	0.022 J	0.0221 J	0.0201 J	0.0429 J	0.0371 J	0.029 J	0.0215 J
Vanadium	NA	78	31.9	24.8	25.3	25	26.2	25.1	24.3	29.6
Zinc	1,200	4,600	87.3	23.7 N	26.4 N	25 N	24.6 N	25.6 N	24.3 N	33.1 N

- Notes:**
 E - Concentration exceeds calibration range
 J - Analyte present. Value may or may not be accurate or precise
 MG/KG - Milligram per kilogram
 N - MS/MSD accuracy and/or precision are outside acceptance limits
 NA - Protection of Groundwater SRG does not apply
 ND - Non-detect
 U - The material was analyzed for, but not detected
 Y - Potential negative bias due to an ICV or CCV exceedance
 Shading indicates detection
Bold text indicates exceedance of Residential Health-Based PSRG
Boxed text indicates exceedance of background criteria
Underlined text indicates exceedance of Protection of Groundwater PSRG

TABLE B-7b

Confirmation Sampling Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2ND-CSW01-1015 10/23/15	TR-2ND-CSW02-1015 10/23/15	TR-2ND-CSW02D-1015 10/23/15	TR-2ND-CSW03-1015 10/23/15	TR-2ND-CSW04-1015 10/23/15	TR-2ND-CSW05-1015 10/23/15	TR-2ND-CSW06-1015 10/23/15
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Acetone	NA	12,000	--	0.00886 J	0.00829 YJ	0.0107 YJ	0.00834 YJ	0.00946 YJ	0.0107 YJ	0.0114 YJ
Semivolatile Organic Compounds (MG/KG)										
Benzo(a)anthracene	NA	0.16	ND	0.00407 U	0.00236 J	0.00411 U	0.00401 U	0.0026 J	0.00416 U	0.004 U
Benzo(a)pyrene	NA	0.016	ND	0.00407 U	0.00408 U	0.00411 U	0.00401 U	0.004 U	0.00416 U	0.004 U
Benzo(b)fluoranthene	NA	0.16	ND	0.00407 U	0.00255 J	0.00411 U	0.00401 U	0.00328 J	0.00416 U	0.004 U
Indeno(1,2,3-cd)pyrene	NA	0.16	ND	0.00407 U	0.00408 U	0.00411 U	0.00401 U	0.00237 J	0.00416 U	0.004 U
Pesticide/Polychlorinated Biphenyls (MG/KG)										
No Detections										
Explosives (MG/KG)										
No Detections										
Total Metals (MG/KG)										
Arsenic	5.8	0.68	3.74	4.66	4.06	5.49	5	4.3	3.35	4.24
Cobalt	0.9	4.6	4.64	2.89	4.5	4.45	4.31	4.14	4.78	4.13
Copper	NA	620	441	7.67	11.8	9.58	10.1	10.6	12	10.4
Iron	NA	11,000	14,100	9,440	12,000	10,900	11,000	10,300	12,000	10,000
Lead	NA	400	47.9	4.03 E	7.38	5.42	5.67	6.37	7.51	5.87
Manganese	65	360	412	79.2 N	89.2 N	81.5 N	81.8 N	81.5 N	107 N	92.6 N
Mercury	NA	1.9	0.0366	0.0314 U	0.0235 J	0.0211 J	0.0231 J	0.0773	0.036 J	0.0374 J
Vanadium	NA	78	31.9	23.8	30	26.6	27.2	25.7	29.6	25.5
Zinc	1,200	4,600	87.3	17.5 EN	27.3 N	25.5 N	25.5 N	26.9 N	33.4 N	32.8 N

Notes:
 E - Concentration exceeds calibration range
 J - Analyte present. Value may or may not be accurate or precise
 MG/KG - Milligram per kilogram
 N - MS/MSD accuracy and/or precision are outside acceptance limits
 NA - Protection of Groundwater SRG does not apply
 ND - Non-detect
 U - The material was analyzed for, but not detected
 Y - Potential negative bias due to an ICV or CCV exceedance
 Shading indicates detection
 Bold text indicates exceedance of Residential Health-Based PSRG
 Bold box indicates exceedance of background criteria
 Underlined text indicates exceedance of Protection of Groundwater PSRG

TABLE B-7b

Confirmation Sampling Results and Exceedances - 2nd Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-2ND-CSW07-1015 10/23/15	TR-2ND-CSW08-1015 10/23/15	TR-2ND-CSW09-1015 10/23/15
Chemical Name						
Volatile Organic Compounds (MG/KG)						
Acetone	NA	12,000	--	0.00937 YJ	0.01 YJ	0.0101 YJ
Semivolatile Organic Compounds (MG/KG)						
Benzo(a)anthracene	NA	0.16	ND	0.00396 U	0.00432 U	0.00405 U
Benzo(a)pyrene	NA	0.016	ND	0.00396 U	0.00432 U	0.00405 U
Benzo(b)fluoranthene	NA	0.16	ND	0.00396 U	0.00432 U	0.00405 U
Indeno(1,2,3-cd)pyrene	NA	0.16	ND	0.00396 U	0.00432 U	0.00405 U
Pesticide/Polychlorinated Biphenyls (MG/KG)						
No Detections						
Explosives (MG/KG)						
No Detections						
Total Metals (MG/KG)						
Arsenic	5.8	0.68	3.74	4.64	4.37	4.38
Cobalt	0.9	4.6	4.64	<u>4.24</u>	<u>4.24</u>	<u>4.06</u>
Copper	NA	620	441	9.75	9.58	10.1
Iron	NA	11,000	14,100	9,690	9,700	9,740
Lead	NA	400	47.9	4.63	4.95	4.98
Manganese	65	360	412	<u>90.3 N</u>	<u>88.7 N</u>	<u>85.6 N</u>
Mercury	NA	1.9	0.0366	0.0353 U	0.0185 J	0.0182 J
Vanadium	NA	78	31.9	23.6	23.4	23.4
Zinc	1,200	4,600	87.3	24 N	25 N	25.6 N

Notes:

- E - Concentration exceeds calibration range
- J - Analyte present. Value may or may not be accurate or precise
- MG/KG - Milligram per kilogram
- N - MS/MSD accuracy and/or precision are outside acceptance limits
- NA - Protection of Groundwater SRG does not apply
- ND - Non-detect
- U - The material was analyzed for, but not detected
- Y - Potential negative bias due to an ICV or CCV exceedance
- Shading indicates detection
- Bold text indicates exceedance of Residential Health-Based PSRG**
- Bold box indicates exceedance of background criteria**
- Underlined text indicates exceedance of Protection of Groundwater PSRG

**Attachment B8
Confirmation Sampling Data – 5th Street
Disposal Area**

TABLE B-8a

Confirmation Sampling Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSF01-0814	TR-5TH-CSF02-0814	TR-5TH-CSF03-0814	TR-5TH-CSF04-0814	TR-5TH-CSF05-0814	TR-5TH-CSF05D-0814	TR-5TH-CSF06-0814	TR-5TH-CSF07-0814	TR-5TH-CSF08-0814	TR-5TH-CSF09-0814
Sample Date	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014
Chemical Name										
Volatile Organic Compounds (MG/KG)										
1,1,1-Trichloroethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,1,2,2-Tetrachloroethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 UQ	0.001 UQ	0.0012 UQ	0.0013 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.0011 UQ	0.0013 UQ	0.0011 UQ	0.001 UQ	0.0013 UQ	0.0012 UQ	0.0011 UQ	0.001 UQ	0.0012 UQ	0.0013 UQ
1,1,2-Trichloroethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,1-Dichloroethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,1-Dichloroethene	0.0011 UQ	0.0013 UQ	0.0011 UQ	0.001 UQ	0.0013 UQ	0.0012 UQ	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
1,2,3-Trichlorobenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
1,2,4-Trichlorobenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
1,2-Dibromo-3-chloropropane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,2-Dibromoethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,2-Dichlorobenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
1,2-Dichloroethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,2-Dichloropropane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
1,3-Dichlorobenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
1,4-Dichlorobenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
1,4-Dioxane	0.053 UQ	0.063 UQ	0.054 UQ	0.051 UQ	0.064 UQ	0.06 UQ	0.053 UQ	0.051 UQ	0.06 UQ	0.063 UQ
2-Butanone	0.0027 U	0.0031 U	0.0027 UQ	0.0026 U	0.0032 U	0.003 U	0.0026 U	0.0025 U	0.003 U	0.0031 UQ
2-Hexanone	0.0027 UQ	0.0031 UQ	0.0027 UQ	0.0026 UQ	0.0032 UQ	0.003 UQ	0.0026 U	0.0025 U	0.003 U	0.0031 UQ
4-Methyl-2-pentanone	0.0027 U	0.0031 U	0.0027 UQ	0.0026 U	0.0032 U	0.003 U	0.0026 U	0.0025 U	0.003 U	0.0031 UQ
Acetone	0.014 JBQ	0.016 UQ	0.023 JBQ	0.0019 JBQ	0.0054 JBQ	0.013 JBQ	0.0032 JQ	0.0028 JQ	0.0071 JQ	0.024 JBQ
Benzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Bromochloromethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Bromodichloromethane	0.0011 UQ	0.0013 UQ	0.0011 UQ	0.001 UQ	0.0013 UQ	0.0012 UQ	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Bromoform	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 UQ	0.001 UQ	0.0012 UQ	0.0013 U
Bromomethane	0.0053 U	0.0063 U	0.0054 UQ	0.0051 U	0.0064 U	0.006 U	0.0053 U	0.0051 U	0.006 U	0.0063 U
Carbon disulfide	0.0053 U	0.0063 U	0.0054 UQ	0.0051 U	0.0064 U	0.006 U	0.0053 UQ	0.0051 UQ	0.006 UQ	0.0063 U
Carbon tetrachloride	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Chlorobenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Chloroethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Chloroform	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Chloromethane	0.0011 UQ	0.0013 UQ	0.0011 UQ	0.001 UQ	0.0013 UQ	0.0012 UQ	0.0011 UQ	0.001 UQ	0.0012 UQ	0.0013 UQ
cis-1,2-Dichloroethene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
cis-1,3-Dichloropropene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Cyclohexane	0.0011 UQ	0.0013 UQ	0.0011 UQ	0.001 UQ	0.0013 UQ	0.0012 UQ	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Dibromochloromethane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Dichlorodifluoromethane (Freon-12)	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Ethylbenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Isopropylbenzene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
m- and p-Xylene	0.0021 U	0.0025 U	0.0021 UQ	0.002 U	0.0026 U	0.0024 U	0.0021 U	0.002 U	0.0024 U	0.0025 UQ
Methyl acetate	0.0053 UQ	0.0063 UQ	0.0054 UQ	0.0051 UQ	0.0064 UQ	0.006 UQ	0.0053 U	0.0051 U	0.006 U	0.0063 UQ
Methylcyclohexane	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Methylene chloride	0.0011 JBQ	0.0063 UQ	8.00E-04 J	0.0051 UQ	0.0064 UQ	0.006 UQ	0.0053 UQ	9.00E-04 JBQ	0.006 UQ	0.0014 JBQ
Methyl-tert-butyl ether (MTBE)	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
o-Xylene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Styrene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Tetrachloroethene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Toluene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
trans-1,2-Dichloroethene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
trans-1,3-Dichloropropene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 UQ	0.001 UQ	0.0012 UQ	0.0013 U
Trichloroethene	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 UQ
Trichlorofluoromethane (Freon-11)	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U	0.0013 U
Vinyl chloride	0.0011 UQ	0.0013 UQ	0.0011 UQ	0.001 UQ	0.0013 UQ	0.0012 UQ	0.0011 UQ	0.001 UQ	0.0012 UQ	0.0013 UQ
Xylene, total	0.0021 U	0.0025 U	0.0021 UQ	0.002 U	0.0026 U	0.0024 U	0.0021 U	0.002 U	0.0024 U	0.0025 U

TABLE B-8a

Confirmation Sampling Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSF01-0814	TR-5TH-CSF02-0814	TR-5TH-CSF03-0814	TR-5TH-CSF04-0814	TR-5TH-CSF05-0814	TR-5TH-CSF05D-0814	TR-5TH-CSF06-0814	TR-5TH-CSF07-0814	TR-5TH-CSF08-0814	TR-5TH-CSF09-0814
Sample Date	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014
Chemical Name										
Semivolatile Organic Compounds (MG/KG)										
Benzo(a)pyrene	0.029 U	0.027 U	0.029 U	0.034 U	0.027 U	0.027 U	0.028 U	0.027 U	0.027 U	0.027 U
Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	0.021 U	0.02 U	0.03 JPQ	0.025 UQ	0.017 JPQ	0.02 U	0.021 U	0.02 U	0.032 JPQ	0.02 U
Aroclor-1260	0.012 J	0.014 J	0.13	0.035 J	0.047	0.02 UQ	0.023 J	0.02 UQ	0.1	0.02 UQ
Total Metals (MG/KG)										
Antimony	2.83 U	2.01 U	2.14 U	3.23 U	2.7 U	2.39 U	3.09 U	2.03 U	2.57 U	2.72 U
Arsenic	1.41 U	0.571 J	1.12 J	2.69 J	0.721 J	1.06 J	1.48 J	0.486 J	0.673 J	1.36 U
Cobalt	0.353 U	0.0935 J	0.738	2.62	0.289 J	1.04	1.08	0.145 J	0.329 J	0.129 J
Iron	425	517	1,650	5,850	1,760	2,570	2,920	657	1,050	689 Q
Lead	1.62 J	2.16	2.16	10.7	22.3	10.8	9.15	2.01 J	7.58	2.07 J
Zinc	1.36 J	1.45	8.32	20.6	10	15.9	20.2	1.68	6.97	1.68

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

Q - One or more QC criteria outside acceptance limits

MG/KG - Milligram per kilogram

U - The material was analyzed for, but not detected

TABLE B-8a

Confirmation Sampling Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW01-0814	TR-5TH-CSW02-0814	TR-5TH-CSW03-0814	TR-5TH-CSW04-0814	TR-5TH-CSW05-0814	TR-5TH-CSW06-0814	TR-5TH-CSW07-0814	TR-5TH-CSW07D-0814	TR-5TH-CSW08-0814
Sample Date	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014
Chemical Name									
Volatile Organic Compounds (MG/KG)									
1,1,1-Trichloroethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,1,2,2-Tetrachloroethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.001 UQ	0.0013 UQ	0.0013 UQ	0.0013 UQ	0.0012 UQ	0.0011 UQ	0.0011 UQ	0.0012 UQ	0.0011 UQ
1,1,2-Trichloroethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,1-Dichloroethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,1-Dichloroethene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 UQ	0.0011 UQ	0.0012 UQ	0.0011 UQ
1,2,3-Trichlorobenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,2,4-Trichlorobenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,2-Dibromo-3-chloropropane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,2-Dibromoethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,2-Dichlorobenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,2-Dichloroethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,2-Dichloropropane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,3-Dichlorobenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,4-Dichlorobenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
1,4-Dioxane	0.052 UQ	0.064 UQ	0.064 UQ	0.065 UQ	0.058 UQ	0.053 UQ	0.055 UQ	0.059 UQ	0.057 UQ
2-Butanone	0.0026 U	0.0032 U	0.0032 U	0.0033 U	0.0029 U	0.0026 U	0.0028 U	0.003 U	0.0028 U
2-Hexanone	0.0026 U	0.0032 U	0.0032 U	0.0033 U	0.0029 U	0.0026 UQ	0.0028 UQ	0.003 UQ	0.0028 UQ
4-Methyl-2-pentanone	0.0026 U	0.0032 U	0.0032 U	0.0033 U	0.0029 U	0.0026 U	0.0028 U	0.003 U	0.0028 U
Acetone	0.022 JBQ	0.0027 JBQ	0.0097 JBQ	0.0041 JBQ	0.0035 JBQ	0.026 BQ	0.014 UQ	0.0038 JBQ	0.0025 JBQ
Benzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Bromochloromethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Bromodichloromethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 UQ	0.0011 UQ	0.0012 UQ	0.0011 UQ
Bromoform	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Bromomethane	0.0052 U	0.0064 U	0.0064 U	0.0065 U	0.0058 U	0.0053 U	0.0055 U	0.0059 U	0.0057 U
Carbon disulfide	0.0052 U	0.0064 U	0.0064 U	0.0065 U	0.0058 U	0.0053 U	0.0055 U	0.0059 U	0.0057 U
Carbon tetrachloride	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Chlorobenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Chloroethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Chloroform	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Chloromethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 UQ	0.0011 UQ	0.0012 UQ	0.0011 UQ
cis-1,2-Dichloroethene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
cis-1,3-Dichloropropene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Cyclohexane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 UQ	0.0011 UQ	0.0012 UQ	0.0011 UQ
Dibromochloromethane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Dichlorodifluoromethane (Freon-12)	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Ethylbenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Isopropylbenzene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
m- and p-Xylene	0.0021 U	0.0025 U	0.0026 U	0.0026 U	0.0023 U	0.0021 U	0.0022 U	0.0024 U	0.0023 U
Methyl acetate	0.0052 U	0.0064 U	0.0064 U	0.0065 U	0.0058 U	0.0053 UQ	0.0055 UQ	0.0059 UQ	0.0057 UQ
Methylcyclohexane	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Methylene chloride	7.00E-04 J	1.00E-03 J	0.0064 U	0.0065 U	0.0058 U	7.00E-04 JBQ	0.0055 UQ	9.00E-04 JBQ	8.00E-04 JBQ
Methyl-tert-butyl ether (MTBE)	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
o-Xylene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Styrene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Tetrachloroethene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Toluene	8.00E-04 J	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
trans-1,2-Dichloroethene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
trans-1,3-Dichloropropene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Trichloroethene	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Trichlorofluoromethane (Freon-11)	0.001 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U
Vinyl chloride	0.001 UQ	0.0013 UQ	0.0013 UQ	0.0013 UQ	0.0012 UQ	0.0011 UQ	0.0011 UQ	0.0012 UQ	0.0011 UQ
Xylene, total	0.0021 U	0.0025 U	0.0026 U	0.0026 U	0.0023 U	0.0021 U	0.0022 U	0.0024 U	0.0023 U

TABLE B-8a

Confirmation Sampling Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW01-0814	TR-5TH-CSW02-0814	TR-5TH-CSW03-0814	TR-5TH-CSW04-0814	TR-5TH-CSW05-0814	TR-5TH-CSW06-0814	TR-5TH-CSW07-0814	TR-5TH-CSW07D-0814	TR-5TH-CSW08-0814
Sample Date	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014
Chemical Name									
Semivolatile Organic Compounds (MG/KG)									
Benzo(a)pyrene	0.033 U	0.033 J	0.035 U	0.032 U	0.027 U	0.029 U	0.03 U	0.027 U	0.027 U
Polychlorinated Biphenyls (MG/KG)									
Aroclor-1254	0.024 U	0.047 JPQ	0.026 U	0.023 U	0.02 U	0.021 U	0.022 U	0.02 U	0.02 U
Aroclor-1260	0.024 U	0.25	0.026 U	0.023 U	0.012 J	0.024 J	0.014 J	0.02 U	0.011 J
Total Metals (MG/KG)									
Antimony	3.4 U	2.54 U	3.09 U	3.2 U	2.84 U	2.46 U	2.55 U	2.48 U	2.54 U
Arsenic	4.84	1.81 J	4.43	1.6 U	1.42 U	1.18 J	1.48 J	1.15 J	1.27 U
Cobalt	3.57	1.44	3.28	0.129 J	0.355 U	0.608 J	1.03	0.768	0.318 U
Iron	8,750	3,550	7,590	675	379	2,200	2,870	2,190	505
Lead	5.52	11.6	6.33	1.87 J	0.733 J	6.73	9.36	8.47	2.03 J
Zinc	20.6	27.4	21.4	1.83	0.85 J	12.5	15.5	10.2	1.22 J

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

Q - One or more QC criteria outside acceptance limits

MG/KG - Milligram per kilogram

U - The material was analyzed for, but not detected

TABLE B-8a

Confirmation Sampling Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW09-0814	TR-5TH-CSW10-0814	TR-5TH-CSW11-0814	TR-5TH-CSW11D-0814	TR-5TH-CSW12-0814	TR-5TH-CSW13-0814	TR-5TH-CSW14-0814	TR-5TH-CSW15-0814
Sample Date	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014
Chemical Name								
Volatile Organic Compounds (MG/KG)								
1,1,1-Trichloroethane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,1,2,2-Tetrachloroethane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.0012 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0013 UQ
1,1,2-Trichloroethane	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,1-Dichloroethane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,1-Dichloroethene	0.0012 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0013 UQ
1,2,3-Trichlorobenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,2,4-Trichlorobenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,2-Dibromo-3-chloropropane	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,2-Dibromoethane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,2-Dichlorobenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,2-Dichloroethane	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,2-Dichloropropane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,3-Dichlorobenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,4-Dichlorobenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
1,4-Dioxane	0.059 UQ	0.052 UQ	0.05 UQ	0.051 UQ	0.052 UQ	0.05 UQ	0.053 UQ	0.063 UQ
2-Butanone	0.0029 U	0.0026 UQ	0.0025 U	0.0025 U	0.0026 U	0.0025 U	0.0027 U	0.0032 U
2-Hexanone	0.0029 UQ	0.0026 UQ	0.0025 UQ	0.0025 UQ	0.0026 UQ	0.0025 UQ	0.0027 UQ	0.0032 UQ
4-Methyl-2-pentanone	0.0029 U	0.0026 UQ	0.0025 U	0.0025 U	0.0026 U	0.0025 U	0.0027 U	0.0032 U
Acetone	0.015 UQ	0.0042 JQ	0.013 UQ	0.031 BQ	0.013 UQ	0.013 UQ	0.0067 JBQ	0.0066 JBQ
Benzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Bromochloromethane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Bromodichloromethane	0.0012 UQ	0.001 U	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0013 UQ
Bromoform	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Bromomethane	0.0059 U	0.0052 UQ	0.005 U	0.0051 U	0.0052 U	0.005 U	0.0053 U	0.0063 U
Carbon disulfide	0.0059 U	0.0052 UQ	0.005 U	0.0051 U	0.0052 U	0.005 U	0.0053 U	0.0063 U
Carbon tetrachloride	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Chlorobenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Chloroethane	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Chloroform	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Chloromethane	0.0012 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0013 UQ
cis-1,2-Dichloroethene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
cis-1,3-Dichloropropene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Cyclohexane	0.0012 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0013 UQ
Dibromochloromethane	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Dichlorodifluoromethane (Freon-12)	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Ethylbenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Isopropylbenzene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
m- and p-Xylene	0.0024 U	0.0021 UQ	0.002 U	0.002 U	0.0021 U	1.00E-03 J	0.0021 U	0.0025 U
Methyl acetate	0.0059 UQ	0.0052 UQ	0.005 UQ	0.021 Q	0.0052 UQ	0.005 UQ	0.0053 UQ	0.0063 UQ
Methylcyclohexane	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Methylene chloride	0.0059 UQ	8.00E-04 JBQ	7.00E-04 JBQ	9.00E-04 JBQ	0.0052 UQ	0.005 UQ	0.0053 UQ	0.0063 UQ
Methyl-tert-butyl ether (MTBE)	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
o-Xylene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Styrene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Tetrachloroethene	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Toluene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	7.00E-04 J
trans-1,2-Dichloroethene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
trans-1,3-Dichloropropene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Trichloroethene	0.0012 U	0.001 UQ	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Trichlorofluoromethane (Freon-11)	0.0012 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011 U	0.0013 U
Vinyl chloride	0.0012 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.001 UQ	0.0011 UQ	0.0013 UQ
Xylene, total	0.0024 U	0.0021 U	0.002 U	0.002 U	0.0021 U	1.00E-03 J	0.0021 U	0.0025 U

TABLE B-8a

Confirmation Sampling Raw Data - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW09-0814	TR-5TH-CSW10-0814	TR-5TH-CSW11-0814	TR-5TH-CSW11D-0814	TR-5TH-CSW12-0814	TR-5TH-CSW13-0814	TR-5TH-CSW14-0814	TR-5TH-CSW15-0814
Sample Date	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014	8/1/2014
Chemical Name								
Semivolatile Organic Compounds (MG/KG)								
Benzo(a)pyrene	0.027 U	0.028 U	0.018 J	0.027 U	0.028 U	0.027 U	0.034 U	0.034 U
Polychlorinated Biphenyls (MG/KG)								
Aroclor-1254	0.02 UQ	0.019 JPQ	0.02 U	0.02 U	0.021 UQ	0.02 U	0.025 U	0.025 U
Aroclor-1260	0.02 J	0.025 JQ	0.02 U	0.02 U	0.02 J	0.02 U	0.025 U	0.025 U
Total Metals (MG/KG)								
Antimony	2.56 U	2.56 UQ	2.72 U	2.47 U	0.458 J	2.26 U	2.92 U	2.53 U
Arsenic	1.28 U	2.16 J	1.36 U	0.645 J	0.544 J	1.13 U	5.1	4.31
Cobalt	0.161 J	2.09	0.17 J	0.0999 J	0.887	0.0841 J	3.67	3.87
Iron	662	5,140 Q	796	536	779	412	7,770	9,250
Lead	3.44	15.7	3.45	2.12 J	6.82	12.1	4.96	7.26
Zinc	2.95	25.1	2.3	1.42	8.44	1.96	22.4	24.1

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

Q - One or more QC criteria outside acceptance limits

MG/KG - Milligram per kilogram

U - The material was analyzed for, but not detected

TABLE B-8b

Confirmation Sampling Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5TH-CSF01-0814 8/1/14	TR-5TH-CSF02-0814 8/1/14	TR-5TH-CSF03-0814 8/1/14	TR-5TH-CSF04-0814 8/1/14	TR-5TH-CSF05-0814 8/1/14	TR-5TH-CSF05D-0814 8/1/14	TR-5TH-CSF06-0814 8/1/14	TR-5TH-CSF07-0814 8/1/14	TR-5TH-CSF08-0814 8/1/14
Chemical Name												
Volatile Organic Compounds (MG/KG)												
Acetone	NA	12000	--	0.014 JBQ	0.016 UQ	0.023 JBQ	0.0019 JBQ	0.0054 JBQ	0.013 JBQ	0.0032 JQ	0.0028 JQ	0.0071 JQ
m- and p-Xylene	--	--	--	0.0021 U	0.0025 U	0.0021 UQ	0.002 U	0.0026 U	0.0024 U	0.0021 U	0.002 U	0.0024 U
Methyl acetate	--	16000	--	0.0053 UQ	0.0063 UQ	0.0054 UQ	0.0051 UQ	0.0064 UQ	0.006 UQ	0.0053 U	0.0051 U	0.006 U
Methylene chloride	NA	57	--	0.0011 JBQ	0.0063 UQ	8.00E-04 J	0.0051 UQ	0.0064 UQ	0.006 UQ	0.0053 UQ	9.00E-04 JBQ	0.006 UQ
Toluene	5.5	820	--	0.0011 U	0.0013 U	0.0011 UQ	0.001 U	0.0013 U	0.0012 U	0.0011 U	0.001 U	0.0012 U
Xylene, total	NA	130	--	0.0021 U	0.0025 U	0.0021 UQ	0.002 U	0.0026 U	0.0024 U	0.0021 U	0.002 U	0.0024 U
Semivolatile Organic Compounds (MG/KG)												
Benzo(a)pyrene	NA	0.016	ND	0.029 U	0.027 U	0.029 U	0.034 U	0.027 U	0.027 U	0.028 U	0.027 U	0.027 U
Polychlorinated Biphenyls (MG/KG)												
Aroclor-1254	NA	1*	--	0.021 U	0.02 U	0.03 JPQ	0.025 UQ	0.017 JPQ	0.02 U	0.021 U	0.02 U	0.032 JPQ
Aroclor-1260	NA	1*	--	0.012 J	0.014 J	0.13	0.035 J	0.047	0.02 UQ	0.023 J	0.02 UQ	0.1
Total Metals (MG/KG)												
Antimony	NA	6.2	ND	2.83 U	2.01 U	2.14 U	3.23 U	2.7 U	2.39 U	3.09 U	2.03 U	2.57 U
Arsenic	5.8	0.68	3.74	1.41 U	0.571 J	1.12 J	2.69 J	0.721 J	1.06 J	1.48 J	0.486 J	0.673 J
Cobalt	0.9	4.6	4.64	0.353 U	0.0935 J	0.738	2.62	0.289 J	1.04	1.08	0.145 J	0.329 J
Iron	150	11,000	14,100	425	517	1,650	5,850	1,760	2,570	2,920	657	1,050
Lead	270	400	47.9	1.62 J	2.16	2.16	10.7	22.3	10.8	9.15	2.01 J	7.58
Zinc	1,200	4,600	87	1.36 J	1.45	8.32	20.6	10	15.9	20.2	1.68	6.97

Notes:
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 Q - One or more QC criteria outside acceptance limits
 MG/KG - Milligram per kilogram
 NA - Protection of Groundwater SRG does not apply
 ND - Non-detect
 U - The material was analyzed for, but not detected
 Shading indicates detection
Bold text indicates exceedance of Residential Health-Based PSRG
Bold box indicates exceedance of background criteria
Underlined text indicates exceedance of Protection of Groundwater PSRG

*For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-8b

Confirmation Sampling Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5TH-CSF01-0814	TR-5TH-CSF02-0814	TR-5TH-CSF09-0814	TR-5TH-CSW01-0814	TR-5TH-CSW02-0814	TR-5TH-CSW03-0814	TR-5TH-CSW04-0814	TR-5TH-CSW05-0814	TR-5TH-CSW06-0814
Sample Date				8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name												
Volatile Organic Compounds (MG/KG)												
Acetone	NA	12000	--	0.014 JBQ	0.016	0.024 JBQ	0.022 JBQ	0.0027 JBQ	0.0097 JBQ	0.0041 JBQ	0.0035 JBQ	0.026 BQ
m- and p-Xylene	--	--	--	0.0021 U	0.0025	0.0025 UQ	0.0021 U	0.0025 U	0.0026 U	0.0026 U	0.0023 U	0.0021 U
Methyl acetate	--	16000	--	0.0053 UQ	0.0063	0.0063 UQ	0.0052 U	0.0064 U	0.0064 U	0.0065 U	0.0058 U	0.0053 UQ
Methylene chloride	NA	57	--	0.0011 JBQ	0.0063	0.0014 JBQ	7.00E-04 J	1.00E-03 J	0.0064 U	0.0065 U	0.0058 U	7.00E-04 JBQ
Toluene	5.5	820	--	0.0011 U	0.0013	0.0013 U	8.00E-04 J	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0011 U
Xylene, total	NA	130	--	0.0021 U	0.0025	0.0025 U	0.0021 U	0.0025 U	0.0026 U	0.0026 U	0.0023 U	0.0021 U
Semivolatile Organic Compounds (MG/KG)												
Benzo(a)pyrene	NA	0.016	ND	0.029 U	0.027	0.027 U	0.033 U	0.033 J	0.035 U	0.032 U	0.027 U	0.029 U
Polychlorinated Biphenyls (MG/KG)												
Aroclor-1254	NA	1*	--	0.021 U	0.02	0.02 U	0.024 U	0.047 JPQ	0.026 U	0.023 U	0.02 U	0.021 U
Aroclor-1260	NA	1*	--	0.012 J	0.014	0.02 UQ	0.024 U	0.25	0.026 U	0.023 U	0.012 J	0.024 J
Total Metals (MG/KG)												
Antimony	NA	6.2	ND	2.83 U	2.01	2.72 U	3.4 U	2.54 U	3.09 U	3.2 U	2.84 U	2.46 U
Arsenic	5.8	0.68	3.74	1.41 U	0.571	1.36 U	4.84	1.81 J	4.43	1.6 U	1.42 U	1.18 J
Cobalt	0.9	4.6	4.64	0.353 U	0.0935	0.129 J	<u>3.57</u>	<u>1.44</u>	<u>3.28</u>	0.129 J	0.355 U	0.608 J
Iron	150	11,000	14,100	<u>425</u>	<u>517</u>	<u>689 Q</u>	<u>8,750</u>	<u>3,550</u>	<u>7,590</u>	<u>675</u>	<u>379</u>	<u>2,200</u>
Lead	270	400	47.9	1.62 J	2.16	2.07 J	5.52	11.6	6.33	1.87 J	0.733 J	6.73
Zinc	1,200	4,600	87	1.36 J	1.45	1.68	20.6	27.4	21.4	1.83	0.85 J	12.5

Notes:
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 Q - One or more QC criteria outside acceptance limits
 MG/KG - Milligram per kilogram
 NA - Protection of Groundwater SRG does not apply
 ND - Non-detect
 U - The material was analyzed for, but not detected
 Shading indicates detection
Bold text indicates exceedance of Residential Health-Based PSRG
Bold box indicates exceedance of background criteria
Underlined text indicates exceedance of Protection of Groundwater PSRG

*For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-8b

Confirmation Sampling Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5TH-CSF01-0814	TR-5TH-CSF02-0814	TR-5TH-CSW07-0814	TR-5TH-CSW07D-0814	TR-5TH-CSW08-0814	TR-5TH-CSW09-0814	TR-5TH-CSW10-0814	TR-5TH-CSW11-0814
Sample Date				8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name											
Volatile Organic Compounds (MG/KG)											
Acetone	NA	12000	--	0.014 JBQ	0.016	0.014 UQ	0.0038 JBQ	0.0025 JBQ	0.015 UQ	0.0042 JQ	0.013 UQ
m- and p-Xylene	--	--	--	0.0021 U	0.0025	0.0022 U	0.0024 U	0.0023 U	0.0024 U	0.0021 UQ	0.002 U
Methyl acetate	--	16000	--	0.0053 UQ	0.0063	0.0055 UQ	0.0059 UQ	0.0057 UQ	0.0059 UQ	0.0052 UQ	0.005 UQ
Methylene chloride	NA	57	--	0.0011 JBQ	0.0063	0.0055 UQ	9.00E-04 JBQ	8.00E-04 JBQ	0.0059 UQ	8.00E-04 JBQ	7.00E-04 JBQ
Toluene	5.5	820	--	0.0011 U	0.0013	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.001 UQ	0.001 U
Xylene, total	NA	130	--	0.0021 U	0.0025	0.0022 U	0.0024 U	0.0023 U	0.0024 U	0.0021 U	0.002 U
Semivolatile Organic Compounds (MG/KG)											
Benzo(a)pyrene	NA	0.016	ND	0.029 U	0.027	0.03 U	0.027 U	0.027 U	0.027 U	0.028 U	0.018 J
Polychlorinated Biphenyls (MG/KG)											
Aroclor-1254	NA	1*	--	0.021 U	0.02	0.022 U	0.02 U	0.02 U	0.02 UQ	0.019 JPQ	0.02 U
Aroclor-1260	NA	1*	--	0.012 J	0.014	0.014 J	0.02 U	0.011 J	0.02 J	0.025 JQ	0.02 U
Total Metals (MG/KG)											
Antimony	NA	6.2	ND	2.83 U	2.01	2.55 U	2.48 U	2.54 U	2.56 U	2.56 UQ	2.72 U
Arsenic	5.8	0.68	3.74	1.41 U	0.571	1.48 J	1.15 J	1.27 U	1.28 U	2.16 J	1.36 U
Cobalt	0.9	4.6	4.64	0.353 U	0.0935	1.03	0.768	0.318 U	0.161 J	2.09	0.17 J
Iron	150	11,000	14,100	425	517	2,870	2,190	505	662	5,140 Q	796
Lead	270	400	47.9	1.62 J	2.16	9.36	8.47	2.03 J	3.44	15.7	3.45
Zinc	1,200	4,600	87	1.36 J	1.45	15.5	10.2	1.22 J	2.95	25.1	2.3

Notes:
 J - Analyte present. Value may or may not be accurate or precise
 P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.
 Q - One or more QC criteria outside acceptance limits
 MG/KG - Milligram per kilogram
 NA - Protection of Groundwater SRG does not apply
 ND - Non-detect
 U - The material was analyzed for, but not detected
 Shading indicates detection
Bold text indicates exceedance of Residential Health-Based PSRG
Bold box indicates exceedance of background criteria
Underlined text indicates exceedance of Protection of Groundwater PSRG

*For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

TABLE B-8b

Confirmation Sampling Results and Exceedances - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	TR-5TH-CSF01-0814	TR-5TH-CSF02-08	TR-5TH-CSW11D-0814	TR-5TH-CSW12-0814	TR-5TH-CSW13-0814	TR-5TH-CSW14-0814	TR-5TH-CSW15-0814
Sample Date				8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name										
Volatile Organic Compounds (MG/KG)										
Acetone	NA	12000	--	0.014 JBQ	0.016	0.031 BQ	0.013 UQ	0.013 UQ	0.0067 JBQ	0.0066 JBQ
m- and p-Xylene	--	--	--	0.0021 U	0.0025	0.002 U	0.0021 U	1.00E-03 J	0.0021 U	0.0025 U
Methyl acetate	--	16000	--	0.0053 UQ	0.0063	0.021 Q	0.0052 UQ	0.005 UQ	0.0053 UQ	0.0063 UQ
Methylene chloride	NA	57	--	0.0011 JBQ	0.0063	9.00E-04 JBQ	0.0052 UQ	0.005 UQ	0.0053 UQ	0.0063 UQ
Toluene	5.5	820	--	0.0011 U	0.0013	0.001 U	0.001 U	0.001 U	0.0011 U	7.00E-04 J
Xylene, total	NA	130	--	0.0021 U	0.0025	0.002 U	0.0021 U	1.00E-03 J	0.0021 U	0.0025 U
Semivolatile Organic Compounds (MG/KG)										
Benzo(a)pyrene	NA	0.016	ND	0.029 U	0.027	0.027 U	0.028 U	0.027 U	0.034 U	0.034 U
Polychlorinated Biphenyls (MG/KG)										
Aroclor-1254	NA	1*	--	0.021 U	0.02	0.02 U	0.021 UQ	0.02 U	0.025 U	0.025 U
Aroclor-1260	NA	1*	--	0.012 J	0.014	0.02 U	0.02 J	0.02 U	0.025 U	0.025 U
Total Metals (MG/KG)										
Antimony	NA	6.2	ND	2.83 U	2.01	2.47 U	0.458 J	2.26 U	2.92 U	2.53 U
Arsenic	5.8	0.68	3.74	1.41 U	0.571	0.645 J	0.544 J	1.13 U	5.1	4.31
Cobalt	0.9	4.6	4.64	0.353 U	0.0935	0.0999 J	0.887	0.0841 J	3.67	3.87
Iron	150	11,000	14,100	425	517	536	779	412	7,770	9,250
Lead	270	400	47.9	1.62 J	2.16	2.12 J	6.82	12.1	4.96	7.26
Zinc	1,200	4,600	87	1.36 J	1.45	1.42	8.44	1.96	22.4	24.1

Notes:

J - Analyte present. Value may or may not be accurate or precise

P - Difference between the concentration on the two columns is greater than 25%; the lower of the two values is reported.

Q - One or more QC criteria outside acceptance limits

MG/KG - Milligram per kilogram

NA - Protection of Groundwater SRG does not apply

ND - Non-detect

U - The material was analyzed for, but not detected

Shading indicates detection

Bold text indicates exceedance of Residential Health-Based PSRG

Bold box indicates exceedance of background criteria

Underlined text indicates exceedance of Protection of Groundwater PSRG

*For PCBs, the unrestricted use residential PSRG of 1 mg/kg was used per REC guidance (NCDEQ, 2015).

Attachment B9
General Fill Data

General Fill Raw Analytical Results
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	HPBS01-072015
Sample Date	7/20/15
Chemical Name	
Volatile Organic Compounds (MG/KG)	
1,1,1-Trichloroethane	0.00283 U
1,1,2,2-Tetrachloroethane	0.00283 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	0.00566 U
1,1,2-Trichloroethane	0.00283 U
1,1-Dichloroethane	0.00283 U
1,1-Dichloroethene	0.00283 U
1,2,3-Trichlorobenzene	0.00283 U
1,2,4-Trichlorobenzene	0.00283 U
1,2-Dibromo-3-chloropropane	0.00566 U
1,2-Dibromoethane	0.00283 U
1,2-Dichlorobenzene	0.00283 U
1,2-Dichloroethane	0.00283 XU
1,2-Dichloropropane	0.00283 U
1,3-Dichlorobenzene	0.00283 U
1,4-Dichlorobenzene	0.00283 U
2-Butanone	0.00566 U
2-Hexanone	0.00566 U
4-Methyl-2-pentanone	0.00566 U
Acetone	0.00855 XJ
Benzene	0.00283 U
Bromochloromethane	0.00283 U
Bromodichloromethane	0.00283 U
Bromoform	0.00283 U
Bromomethane	0.00566 XU
Carbon disulfide	0.00283 U
Carbon tetrachloride	0.00283 U
Chlorobenzene	0.00283 U
Chloroethane	0.00566 U
Chloroform	0.00283 U
Chloromethane	0.00566 U
cis-1,2-Dichloroethene	0.00283 U
cis-1,3-Dichloropropene	0.00283 U
Cyclohexane	0.00283 U
Dibromochloromethane	0.00283 U
Dichlorodifluoromethane (Freon-12)	0.00566 U
Ethylbenzene	0.00283 U
Isopropylbenzene	0.00283 U
m- and p-Xylene	0.00566 U
Methyl Acetate	0.00566 U
Methylcyclohexane	0.00283 U
Methylene chloride	0.00566 U
Methyl-tert-Butyl Ether (MTBE)	0.00283 U
o-Xylene	0.00283 U
Styrene	0.00283 U
Tetrachloroethene	0.00283 U
Toluene	0.00283 U
trans-1,2-Dichloroethene	0.00283 U
trans-1,3-Dichloropropene	0.00283 U
Trichloroethene	0.00283 U
Trichlorofluoromethane (Freon-11)	0.00566 XU
Vinyl chloride	0.00283 U
Xylene, Total	0.00849 U
Semivolatile Organic Compounds (MG/KG)	
1,1-Biphenyl	0.181 U
1,2,4,5-Tetrachlorobenzene	0.00722 XU
1,4-Dioxane	0.0181 U
2,2'-Oxybis(1-chloropropane)	0.0036 U
2,3,4,6-Tetrachlorophenol	0.181 U
2,4,5-Trichlorophenol	0.181 U
2,4,6-Trichlorophenol	0.181 U
2,4-Dichlorophenol	0.181 XU
2,4-Dimethylphenol	0.722 U
2,4-Dinitrophenol	1.81 U
2,4-Dinitrotoluene	0.0036 U
2,6-Dinitrotoluene	0.0036 U
2-Chloronaphthalene	0.0036 U
2-Chlorophenol	0.181 U
2-Methylnaphthalene	0.0036 U
2-Methylphenol	0.181 U
2-Nitroaniline	0.722 U
2-Nitrophenol	0.181 XU
3,3'-Dichlorobenzidine	0.0036 U
3-Nitroaniline	0.722 U
4,6-Dinitro-2-methylphenol	0.0144 U
4-Bromophenyl-phenylether	0.181 U
4-Chloro-3-methylphenol	0.181 XU
4-Chloroaniline	0.0036 U
4-Chlorophenyl-phenylether	0.181 U
4-Methylphenol	0.181 U
4-Nitroaniline	0.722 U
4-Nitrophenol	0.722 U
Acenaphthene	0.0036 U
Acenaphthylene	0.0036 U
Acetophenone	0.181 U
Anthracene	0.0036 U
Atrazine	0.181 XU
Benzaldehyde	0.181 U
Benzo(a)anthracene	0.00326 J
Benzo(a)pyrene	0.00297 J
Benzo(b)fluoranthene	0.00546 J
Benzo(g,h,i)perylene	0.00278 J
Benzo(k)fluoranthene	0.0036 U
Bis(2-chloroethoxy)methane	0.181 U
Bis(2-chloroethyl)ether	0.0036 U
Bis(2-ethylhexyl)phthalate	0.0122 J
Butylbenzylphthalate	0.181 U
Caprolactam	0.181 U
Carbazole	0.0036 U

TABLE B-9a

General Fill Raw Analytical Results
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	HPBS01-072015
Sample Date	7/20/15
Chemical Name	
Chrysene	0.00352 J
Dibenz(a,h)anthracene	0.0036 U
Dibenzofuran	0.0036 U
Diethylphthalate	0.181 U
Dimethyl phthalate	0.181 U
Di-n-butylphthalate	0.181 U
Di-n-octylphthalate	0.00722 U
Fluoranthene	0.00706 J
Fluorene	0.0036 U
Hexachlorobenzene	0.0036 U
Hexachlorobutadiene	0.0036 U
Hexachlorocyclopentadiene	0.0181 U
Hexachloroethane	0.0036 U
Indeno(1,2,3-cd)pyrene	0.00281 J
Isophorone	0.0036 U
Naphthalene	0.0036 U
Nitrobenzene	0.0036 U
N-Nitroso-di-n-propylamine	0.0036 U
N-Nitrosodiphenylamine	0.0036 U
Pentachlorophenol	0.036 U
Phenanthrene	0.00455 J
Phenol	0.00722 U
Pyrene	0.00599 J
Pesticide/Polychlorinated Biphenyls (MG/KG)	
4,4'-DDD	0.000375 U
4,4'-DDE	0.000237 J
4,4'-DDT	0.000455 J
Aldrin	0.000375 U
alpha-BHC	0.000375 U
alpha-Chlordane	0.000375 U
Aroclor-1016	0.0092 U
Aroclor-1221	0.0092 U
Aroclor-1232	0.0092 U
Aroclor-1242	0.0092 U
Aroclor-1248	0.0092 U
Aroclor-1254	0.0092 U
Aroclor-1260	0.0092 U
Aroclor-1262	0.0092 U
Aroclor-1268	0.0092 U
beta-BHC	0.000375 U
delta-BHC	0.000375 U
Dieldrin	0.000375 U
Endosulfan I	0.000375 U
Endosulfan II	0.000375 U
Endosulfan sulfate	0.000375 U
Endrin	0.000375 U
Endrin aldehyde	0.000375 U
Endrin ketone	0.000375 U
gamma-BHC (Lindane)	0.000375 U
gamma-Chlordane	0.000374 PMJ
Heptachlor	0.000375 U
Heptachlor epoxide	0.000375 U
Methoxychlor	0.000375 U
Toxaphene	0.0243 U
Total Metals (MG/KG)	
Aluminum	13,200
Antimony	0.441 U
Arsenic	2.5
Barium	60.6
Beryllium	0.347
Cadmium	0.0841 J
Calcium	1,100
Chromium	17.7
Cobalt	3.23
Copper	5.2
Iron	7,870
Lead	7.68
Magnesium	1,320
Manganese	148
Mercury	0.029 U
Nickel	8.18
Potassium	476
Selenium	0.276 U
Silver	0.11 MU
Sodium	83.6 J
Thallium	0.221 U
Vanadium	17.5
Zinc	24

Notes:

J - Analyte present. Value may or may not be accurate or precise

M - Indicates that the matrix interfered with the quantitation of the analyte

MG/KG - Milligram per kilogram

P - Estimated; there is a greater than 40% difference between the two Gas Chromatograph (GC) columns for the detected concentrations

U - The material was analyzed for, but not detected

X - The parameter shows a potential bias on a reported concentration due to an internal calibration verification (ICV) or continuing calibration verification (CCV) exceeding the upper control limit.

TABLE B-9b

General Fill Results and Exceedances

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	Preliminary Protection of Groundwater Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	HPBS01-072015 7/20/15
Sample Date				
Chemical Name				
Volatile Organic Compounds (MG/KG)				
Acetone	24	12000	--	0.00855 XJ
Semivolatile Organic Compounds (MG/KG)				
Benzo(a)anthracene	0.18	0.16	ND	0.00326 J
Benzo(a)pyrene	0.059	0.016	ND	0.00297 J
Benzo(b)fluoranthene	0.6	0.16	ND	0.00546 J
Benzo(g,h,i)perylene	7800	--	ND	0.00278 J
Bis(2-ethylhexyl)phthalate	7.2	39	ND	0.0122 J
Chrysene	18	16	ND	0.00352 J
Fluoranthene	330	480	ND	0.00706 J
Indeno(1,2,3-cd)pyrene	2	0.16	ND	0.00281 J
Phenanthrene	68	--	ND	0.00455 J
Pyrene	220	360	ND	0.00599 J
Pesticide/Polychlorinated Biphenyls (MG/KG)				
4,4'-DDE	0.24	2	--	0.000237 J
4,4'-DDT	0.34	1.9	--	0.000455 J
gamma-Chlordane	--	--	--	0.000374 PMJ
Total Metals (MG/KG)				
Aluminum	--	15000	32000	13,200
Arsenic	5.8	0.68	3.74	2.5
Barium	580	3000	134	60.6
Beryllium	63	32	0.636	0.347
Cadmium	3	14	0.878	0.0841 J
Calcium	--	--	3600	1,100
Chromium	360,000	24,000	38.5	17.7
Cobalt	0.9	4.6	4.64	<u>3.23</u>
Copper	700	620	441	5.2
Iron	150	11000	14100	<u>7,870</u>
Lead	270	400	47.9	7.68
Magnesium	--	--	2600	1,320
Manganese	65	360	412	<u>148</u>
Nickel	130	300	16.8	8.18
Potassium	--	--	765	476
Sodium	--	--	136	83.6 J
Vanadium	6	78	31.9	<u>17.5</u>
Zinc	1200	4600	87.3	24

Notes:

Underlined text indicates exceedance of Protection of Groundwater PSRG

Bold text indicates exceedance of Residential Health-Based PSRG

Bold box indicates exceedance of background criteria

J - Analyte present. Value may or may not be accurate or precise

M - Indicates that the matrix interfered with the quantitation of the analyte

MG/KG - Milligram per kilogram

ND - Not detected

P - Estimated; there is a greater than 40% difference between the two Gas Chromatograph (GC) columns for the detected concentrations

X - The parameter shows a potential bias on a reported concentration due to an internal calibration verification (ICV) or continuing calibration verification (CCV) exceeding the upper control limit.

Shading indicates detection

Attachment B10
Topsoil Data

Topsoil Raw Analytical Results

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	HPDTA-TS-02
Sample Date	10/5/2015
Chemical Name	
Volatile Organic Compounds (ug/kg)	
Dichlorodifluoromethane	5 U
Chloromethane	5 U
Vinyl Chloride	5 U
Bromomethane	5 U
Chloroethane	5 U
Trichlorofluoromethane	5 U
1,1-Dichloroethene	2.5 U
Methylene Chloride	12 U
trans-1,2-Dichloroethene	2.5 U
1,1-Dichloroethane	2.5 U
cis-1,2-Dichloroethene	2.5 U
1,2-Dichloroethylene (Total)	5 U
2,2-Dichloropropane	2.5 U
Chloroform	2.5 U
Bromochloromethane	2.5 U
1,1,1-Trichloroethane	2.5 U
1,2-Dichloroethane	2.5 U
1,1-Dichloropropene	2.5 U
Carbon Tetrachloride	2.5 U
Benzene	2.5 U
1,2-Dichloropropane	2.5 U
Trichloroethene	2.5 U
Dibromomethane	2.5 U
Bromodichloromethane	2.5 U
cis-1,3-Dichloropropene	2.5 U
Toluene	2.5 U
trans-1,3-Dichloropropene	2.5 U
1,1,2-Trichloroethane	2.5 U
1,3-Dichloropropane	2.5 U
Dibromochloromethane	2.5 U
Tetrachloroethene	2.5 U
1,2-Dibromoethane	2.5 U
Chlorobenzene	2.5 U
1,1,1,2-Tetrachloroethane	2.5 U
Ethylbenzene	2.5 U
Bromoform	2.5 U
Styrene	2.5 U
1,1,2,2-Tetrachloroethane	2.5 U
1,2,3-Trichloropropane	2.5 U
Isopropylbenzene	2.5 U
Bromobenzene	2.5 U
2-Chlorotoluene	2.5 U
N-Propylbenzene	2.5 U
4-Chlorotoluene	2.5 U
1,3,5-Trimethylbenzene	2.5 U
tert-Butylbenzene	2.5 U
1,2,4-Trichlorobenzene	2.5 U
sec-Butylbenzene	2.5 U
1,3-Dichlorobenzene	2.5 U
p-Isopropyltoluene	2.5 U
1,4-Dichlorobenzene	2.5 U
1,2-Dichlorobenzene	2.5 U
N-Butylbenzene	2.5 U
1,2-Dibromo-3-Chloropropane	2.5 U
1,2,4-Trimethylbenzene	2.5 U
Naphthalene	2.5 U
Hexachlorobutadiene	2.5 U
1,2,3-Trichlorobenzene	2.5 U
Methyl tert-butyl Ether	2.5 U
Acetone	12 U
2-Butanone	12 U
4-Methyl-2-Pentanone	12 U
2-Hexanone	12 U
m+p-Xylenes	5 U
o-Xylene	2.5 U
Xylenes (Total)	7.4 U
1,3,5-Trichlorobenzene	2.5 U
Vinyl Acetate	2.5 U
Carbon Disulfide	2.5 U
Diethyl Ether	2.5 U
Tetrahydrofuran	2.5 U
Semivolatile Organic Compounds (ug/kg)	
Phenol	240 U
Bis(2-Chloroethyl)Ether	240 U
2-Chlorophenol	240 U
1,3-Dichlorobenzene	240 U
1,4-Dichlorobenzene	240 U
1,2-Dichlorobenzene	240 U

Topsoil Raw Analytical Results

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	HPDTA-TS-02
Sample Date	10/5/2015
Chemical Name	
2-Methylphenol	240 U
2,2'-Oxybis(1-Chloropropane)	240 U
3&4-Methylphenol	240 U
N-Nitroso-Di-N-Propylamine	240 U
Hexachloroethane	240 U
Nitrobenzene	240 U
Isophorone	240 U
2-Nitrophenol	240 U
2,4-Dimethylphenol	240 U
Bis(2-Chloroethoxy)Methane	240 U
2,4-Dichlorophenol	240 U
1,2,4-Trichlorobenzene	240 U
Naphthalene	240 U
4-Chloroaniline	240 U
Hexachlorobutadiene	240 U
4-Chloro-3-Methylphenol	240 U
2-Methylnaphthalene	240 U
Hexachlorocyclopentadiene	240 U
2,4,6-Trichlorophenol	240 U
2,4,5-Trichlorophenol	610 U
2-Chloronaphthalene	240 U
2-Nitroaniline	610 U
Dimethyl Phthalate	240 U
Acenaphthylene	240 U
2,6-Dinitrotoluene	240 U
3-Nitroaniline	610 U
Acenaphthene	240 U
2,4-Dinitrophenol	610 U
4-Nitrophenol	610 U
Dibenzofuran	240 U
2,4-Dinitrotoluene	240 U
Diethylphthalate	240 U
4-Chlorophenyl-Phenylether	240 U
Fluorene	240 U
4-Nitroaniline	610 U
4,6-Dinitro-2-Methylphenol	610 U
N-Nitrosodiphenylamine	240 U
4-Bromophenyl-Phenylether	240 U
Hexachlorobenzene	240 U
Pentachlorophenol	610 U
Phenanthrene	240 U
Anthracene	240 U
Carbazole	240 U
Di-N-Butylphthalate	240 U
Fluoranthene	240 U
Pyrene	240 U
Butylbenzylphthalate	240 U
3,3'-Dichlorobenzidine	240 U
Benzo(a)anthracene	240 U
Chrysene	240 U
Bis(2-Ethylhexyl)Phthalate	240 U
Di-N-Octylphthalate	240 U
Benzo(b)fluoranthene	240 U
Benzo(k)fluoranthene	240 U
Benzo(a)pyrene	240 U
Indeno(1,2,3-cd)pyrene	240 U
Dibenzo(a,h)anthracene	240 U
Benzo(g,h,i)perylene	240 U
Pesticide/Polychlorinated Biphenyls (ug/kg)	
alpha-BHC	0.88 U
gamma-BHC	0.88 U
Heptachlor	0.88 U
Aldrin	0.88 U
beta-BHC	0.88 U
delta-BHC	0.88 U
Heptachlor Epoxide	0.88 U
Endosulfan I	0.88 U
Gamma-Chlordane	0.88 U
Alpha-Chlordane	0.88 U
4,4'-DDE	1.2 J
Dieldrin	1.7 U
Endrin	1.7 U
4,4'-DDD	1.7 U
Endosulfan II	1.7 U
4,4'-DDT	1.6 J
Endrin Aldehyde	1.7 U
Endosulfan Sulfate	1.7 U
Methoxychlor	8.8 U

Topsoil Raw Analytical Results*TRDA RA Construction Completion/RA Completion Report**Harvey Point Defense Testing Activity**Hertford, North Carolina*

Sample ID	HPDTA-TS-02
Sample Date	10/5/2015
Chemical Name	
Endrin Ketone	1.7 U
Toxaphene	17 U
Aroclor-1016	8.8 U
Aroclor-1221	8.8 U
Aroclor-1232	10 U
Aroclor-1242	8.8 U
Aroclor-1248	8.8 U
Aroclor-1254	8.8 U
Aroclor-1260	8.8 U
Total Metals (mg/kg)	
ALUMINUM	7470
ANTIMONY	0.038 J
ARSENIC	0.94
BARIUM	21.2
BERYLLIUM	0.142
CADMIUM	0.042 J
CALCIUM	496 Q
CHROMIUM	7.66
COBALT	0.852
COPPER	2.03
IRON	2140
LEAD	7.8
MAGNESIUM	473
MANGANESE	20.6 B
MERCURY	0.026 J
NICKEL	2.8
POTASSIUM	299
SELENIUM	0.26 J
SILVER	0.015 J
SODIUM	21.6 J
THALLIUM	0.063 J
VANADIUM	7.83
ZINC	12.5
Wet Chemistry	
Chloride (mg/kg)	12 J
Organic Matter Content (pct)	1.4
Solids - Filterable residue (mg/L)	750
Specific Conductivity (umhos/cm)	39
Electrical Conductivity (umhos/cm) (from Clemson)	260
TOC (mg/kg)	7800
Total Solids (pct)	85
pH (soil) (pH units)	5.7
pH (soil) (pH units) (from Clemson)	5.9
Soluble Salt (mg/kg) (calculated) ¹	332.8
Sodium Adsorption Ratio	5.61

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

Q - One or more QC criteria recovered outside acceptance limits

U - The material was analyzed for, but not detected

mg/kg - Milligram per kilogram

mg/L - Milligram per liter

pct - percent

ug/kg - Microgram per kilogram

umhos/cm - microhmhos per centimeter

¹Soluble salt was calculated as [soluble salt (mg/kg) = 1,280xEC (mmhos/cm)]http://www.clemson.edu/public/regulatory/ag_svc_lab/soil_testing/salinity.html

Topsoil Results and Exceedances

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	Soil Background Criteria	Topsoil Screening Criteria	HPDTA-TS-02 10/5/2015
Sample Date					
Chemical Name					
Volatile Organic Compounds (ug/kg) No Detections					
Semivolatile Organic Compounds (ug/kg) No Detections					
Pesticide/Polychlorinated Biphenyls (ug/kg)					
4,4'-DDE	240	2,000	--	--	1.2 J
4,4'-DDT	340	1,900	--	--	1.6 J
Total Metals (mg/kg)					
ALUMINUM	--	15,000	32,000	--	7470
ANTIMONY	0.9	6.2	ND	--	0.038 J
ARSENIC	5.8	0.68	3.74	--	0.94
BARIUM	580	3,000	134	--	21.2
BERYLLIUM	63	32	0.636	--	0.142
CADMIUM	3	14	0.878	--	0.042 J
CALCIUM	--	--	3,600	--	496 Q
CHROMIUM	360,000	24,000	38.5	--	7.66
COBALT	0.9	4.6	4.64	--	0.852
COPPER	700	620	441	--	2.03
IRON	150	11,000	14,100	--	<u>2,140</u>
LEAD	270	400	47.9	--	7.8
MAGNESIUM	--	--	2,600	--	473
MANGANESE	65	360	412	--	20.6 B
MERCURY	1	1.9	0.0366	--	0.026 J
NICKEL	130	300	16.8	--	2.8
POTASSIUM	--	--	765	--	299
SELENIUM	2.1	78	ND	--	0.26 J
SILVER	3.4	78	ND	--	0.015 J
SODIUM	--	--	136	--	21.6 J
THALLIUM	0.28	0.16	1.29	--	0.063 J
VANADIUM	6	78	31.9	--	7.83
ZINC	1,200	4,600	87.3	--	12.5
Wet Chemistry					
Chloride (mg/kg)	--	--	--	--	12 J
Organic Matter Content (pct)	--	--	--	1.5	1.4
Solids - Filterable residue (mg/L)	--	--	--	--	750
Specific Conductivity (umhos/cm)	--	--	--	--	39
Electrical Conductivity (umhos/cm) (from Clemson)	--	--	--	--	260
TOC (mg/kg)	--	--	--	--	7800
Total Solids (pct)	--	--	--	--	85
pH (soil) (pH units) (from Clemson)	--	--	--	6 - 7.5	5.9
Soluble Salt (mg/kg) (calculated) ¹	--	--	--	< 500	332.8
Sodium Adsorption Ratio	--	--	--	< 12	5.61

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

Q - One or more QC criteria recovered outside acceptance limits

mg/kg - Milligram per kilogram

mg/L - Milligram per liter

ND - Non-detect

pct - percent

ug/kg - Microgram per kilogram

umhos/cm - microhmhos per centimeter

¹Soluble salt was calculated as [soluble salt (mg/kg) = 1,280xEC (mmhos/cm)]

(http://www.clemson.edu/public/regulatory/ag_svc_lab/soil_testing/salinity.html)

Shading indicates detection

Bold text indicates exceedance of Residential Health-Based PSRG**Bold box indicates exceedance of background criteria or Topsoil Screening Criteria, as applicable**Underlined text indicates exceedance of Protection of Groundwater PSRG

Attachment B11
Reprocessed VOC Confirmation Sampling Data
- 5th Street Disposal Area

TABLE B-11a
 Reprocessed VOC Confirmation Sampling RAW Analytical
 Results - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSF01-0814new	TR-5TH-CSF01-0814old	TR-5TH-CSF02-0814new	TR-5TH-CSF02-0814old	TR-5TH-CSF03-0814new	TR-5TH-CSF03-0814old	TR-5TH-CSF04-0814new	TR-5TH-CSF04-0814old	TR-5TH-CSF05-0814new	TR-5TH-CSF05-0814old	TR-5TH-CSF05D-0814new
Sample Date	8/1/14 13:10	8/1/14 13:10	8/1/14 13:15	8/1/14 13:15	8/1/14 13:20	8/1/14 13:20	8/1/14 13:30	8/1/14 13:30	8/1/14 13:35	8/1/14 13:35	8/1/14 13:35
Chemical Name											
Volatile Organic Compounds (UG/KG)											
1,1,1-Trichloroethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,1,2,2-Tetrachloroethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.1 UQ	NS	1.3 UQ	NS	1.1 UQ	NS	1 UQ	NS	1.3 UQ	NS	1.2 UQ
1,1,2-Trichloroethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,1-Dichloroethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,1-Dichloroethene	1.1 UQ	NS	1.3 UQ	NS	1.1 UQ	NS	1 UQ	NS	1.3 UQ	NS	1.2 UQ
1,2,3-Trichlorobenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,2,4-Trichlorobenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,2-Dibromo-3-chloropropane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,2-Dibromoethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,2-Dichlorobenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,2-Dichloroethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,2-Dichloropropane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,3-Dichlorobenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
1,4-Dichlorobenzene	1.1 U	1.1 U	1.3 U	1.3 U	1.1 UQ	1.1 U	1 U	1 U	1.3 U	1.3 U	1.2 U
1,4-Dioxane	53 UQ	NS	63 UQ	NS	54 UQ	NS	51 UQ	NS	64 UQ	NS	60 UQ
2-Butanone	2.7 U	NS	3.1 U	NS	2.7 UQ	NS	2.6 U	NS	3.2 U	NS	3 U
2-Hexanone	2.7 UQ	NS	3.1 UQ	NS	2.7 UQ	NS	2.6 UQ	NS	3.2 UQ	NS	3 UQ
4-Methyl-2-pentanone	2.7 U	NS	3.1 U	NS	2.7 UQ	NS	2.6 U	NS	3.2 U	NS	3 U
Acetone	14 JBQ	NS	16 UQ	NS	23 JBQ	NS	1.9 JBQ	NS	5.4 JBQ	NS	13 JBQ
Benzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Bromochloromethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Bromodichloromethane	1.1 UQ	NS	1.3 UQ	NS	1.1 UQ	NS	1 UQ	NS	1.3 UQ	NS	1.2 UQ
Bromoform	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Bromomethane	5.3 U	NS	6.3 U	NS	5.4 UQ	NS	5.1 U	NS	6.4 U	NS	6 U
Carbon disulfide	5.3 U	NS	6.3 U	NS	5.4 UQ	NS	5.1 U	NS	6.4 U	NS	6 U
Carbon tetrachloride	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Chlorobenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Chloroethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Chloroform	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Chloromethane	1.1 UQ	NS	1.3 UQ	NS	1.1 UQ	NS	1 UQ	NS	1.3 UQ	NS	1.2 UQ
cis-1,2-Dichloroethene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
cis-1,3-Dichloropropene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Cyclohexane	1.1 UQ	NS	1.3 UQ	NS	1.1 UQ	NS	1 UQ	NS	1.3 UQ	NS	1.2 UQ
Dibromochloromethane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Dichlorodifluoromethane (Freon-12)	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Ethylbenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Isopropylbenzene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
m- and p-Xylene	2.1 U	NS	2.5 U	NS	2.1 UQ	NS	2 U	NS	2.6 U	NS	2.4 U
Methyl acetate	5.3 UQ	NS	6.3 UQ	NS	5.4 UQ	NS	5.1 UQ	NS	6.4 UQ	NS	6 UQ
Methylcyclohexane	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Methylene chloride	1.1 JBQ	NS	6.3 UQ	NS	0.8 J	NS	5.1 UQ	NS	6.4 UQ	NS	6 UQ
Methyl-tert-butyl ether (MTBE)	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
o-Xylene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Styrene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Tetrachloroethene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Toluene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
trans-1,2-Dichloroethene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
trans-1,3-Dichloropropene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Trichloroethene	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Trichlorofluoromethane (Freon-11)	1.1 U	NS	1.3 U	NS	1.1 UQ	NS	1 U	NS	1.3 U	NS	1.2 U
Vinyl chloride	1.1 UQ	NS	1.3 UQ	NS	1.1 UQ	NS	1 UQ	NS	1.3 UQ	NS	1.2 UQ
Xylene, total	2.1 U	NS	2.5 U	NS	2.1 UQ	NS	2 U	NS	2.6 U	NS	2.4 U

Notes:
 B - Analyte also detected in an associated laboratory blank
 J - Analyte present. Value may or may not be accurate or precise
 NS - Not sampled
 Q - One or more QC criteria recovered outside acceptance limits
 U - The material was analyzed for, but not detected
 UG/KG - Microgram per kilogram
 Shading indicates unreliable result

TABLE B-11a
 Reprocessed VOC Confirmation Sampling RAW Analytical
 Results - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSF05D-0814old	TR-5TH-CSF06-0814new	TR-5TH-CSF06-0814old	TR-5TH-CSF07-0814new	TR-5TH-CSF07-0814old	TR-5TH-CSF08-0814new	TR-5TH-CSF08-0814old	TR-5TH-CSF09-0814new	TR-5TH-CSF09-0814old	TR-5TH-CSW01-0814new	TR-5TH-CSW01-0814old
Sample Date	8/1/14 13:35	8/1/14 13:45	8/1/14 13:45	8/1/14 13:50	8/1/14 13:50	8/1/14 14:00	8/1/14 14:00	8/1/14 14:05	8/1/14 14:05	8/1/14 12:10	8/1/14 12:10
Chemical Name											
Volatile Organic Compounds (UG/KG)											
1,1,1-Trichloroethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,1,2,2-Tetrachloroethane	NS	1.1 UQ	NS	1 UQ	NS	1.2 UQ	NS	1.3 U	NS	1 U	NS
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	NS	1.1 UQ	NS	1 UQ	NS	1.2 UQ	NS	1.3 UQ	NS	1 UQ	NS
1,1,2-Trichloroethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,1-Dichloroethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,1-Dichloroethene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
1,2,3-Trichlorobenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
1,2,4-Trichlorobenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
1,2-Dibromo-3-chloropropane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,2-Dibromoethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,2-Dichlorobenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
1,2-Dichloroethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,2-Dichloropropane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
1,3-Dichlorobenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
1,4-Dichlorobenzene	1.2 U	1.1 U	1.1 U	1 U	1 U	1.2 U	1.2 U	1.3 UQ	1.3 UQ	1 U	1 U
1,4-Dioxane	NS	53 UQ	NS	51 UQ	NS	60 UQ	NS	63 UQ	NS	52 UQ	NS
2-Butanone	NS	2.6 U	NS	2.5 U	NS	3 U	NS	3.1 UQ	NS	2.6 U	NS
2-Hexanone	NS	2.6 U	NS	2.5 U	NS	3 U	NS	3.1 UQ	NS	2.6 U	NS
4-Methyl-2-pentanone	NS	2.6 U	NS	2.5 U	NS	3 U	NS	3.1 UQ	NS	2.6 U	NS
Acetone	NS	3.2 JQ	NS	2.8 JQ	NS	7.1 JQ	NS	24 JBQ	NS	22 JBQ	NS
Benzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Bromochloromethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Bromodichloromethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Bromoform	NS	1.1 UQ	NS	1 UQ	NS	1.2 UQ	NS	1.3 U	NS	1 U	NS
Bromomethane	NS	5.3 U	NS	5.1 U	NS	6 U	NS	6.3 U	NS	5.2 U	NS
Carbon disulfide	NS	5.3 UQ	NS	5.1 UQ	NS	6 UQ	NS	6.3 U	NS	5.2 U	NS
Carbon tetrachloride	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Chlorobenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Chloroethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Chloroform	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Chloromethane	NS	1.1 UQ	NS	1 UQ	NS	1.2 UQ	NS	1.3 UQ	NS	1 U	NS
cis-1,2-Dichloroethene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
cis-1,3-Dichloropropene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Cyclohexane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Dibromochloromethane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Dichlorodifluoromethane (Freon-12)	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Ethylbenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Isopropylbenzene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
m- and p-Xylene	NS	2.1 U	NS	2 U	NS	2.4 U	NS	2.5 UQ	NS	2.1 U	NS
Methyl acetate	NS	5.3 U	NS	5.1 U	NS	6 U	NS	6.3 UQ	NS	5.2 U	NS
Methylcyclohexane	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Methylene chloride	NS	5.3 UQ	NS	0.9 JBQ	NS	6 UQ	NS	1.4 JBQ	NS	0.7 J	NS
Methyl-tert-butyl ether (MTBE)	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
o-Xylene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Styrene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Tetrachloroethene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Toluene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	0.8 J	NS
trans-1,2-Dichloroethene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
trans-1,3-Dichloropropene	NS	1.1 UQ	NS	1 UQ	NS	1.2 UQ	NS	1.3 U	NS	1 U	NS
Trichloroethene	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 UQ	NS	1 U	NS
Trichlorofluoromethane (Freon-11)	NS	1.1 U	NS	1 U	NS	1.2 U	NS	1.3 U	NS	1 U	NS
Vinyl chloride	NS	1.1 UQ	NS	1 UQ	NS	1.2 UQ	NS	1.3 UQ	NS	1 UQ	NS
Xylene, total	NS	2.1 U	NS	2 U	NS	2.4 U	NS	2.5 U	NS	2.1 U	NS

Notes:
 B - Analyte also detected in an associated laboratory blank
 J - Analyte present. Value may or may not be accurate or precise
 NS - Not sampled
 Q - One or more QC criteria recovered outside acceptance limits
 U - The material was analyzed for, but not detected
 UG/KG - Microgram per kilogram
 Shading indicates unreliable result

TABLE B-11a
 Reprocessed VOC Confirmation Sampling RAW Analytical
 Results - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW02-0814new	TR-5TH-CSW02-0814old	TR-5TH-CSW03-0814new	TR-5TH-CSW03-0814old	TR-5TH-CSW04-0814new	TR-5TH-CSW04-0814old	TR-5TH-CSW05-0814new	TR-5TH-CSW05-0814old	TR-5TH-CSW06-0814new	TR-5TH-CSW06-0814old	TR-5TH-CSW07-0814new
Sample Date	8/1/14 12:15	8/1/14 12:15	8/1/14 12:20	8/1/14 12:20	8/1/14 12:30	8/1/14 12:30	8/1/14 12:35	8/1/14 12:35	8/1/14 12:40	8/1/14 12:40	8/1/14 12:50
Chemical Name											
Volatile Organic Compounds (UG/KG)											
1,1,1-Trichloroethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,1,2,2-Tetrachloroethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1.3 UQ	NS	1.3 UQ	NS	1.3 UQ	NS	1.2 UQ	NS	1.1 UQ	NS	1.1 UQ
1,1,2-Trichloroethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,1-Dichloroethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,1-Dichloroethene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 UQ	NS	1.1 UQ
1,2,3-Trichlorobenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,2,4-Trichlorobenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,2-Dibromo-3-chloropropane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,2-Dibromoethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,2-Dichlorobenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,2-Dichloroethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,2-Dichloropropane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,3-Dichlorobenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
1,4-Dichlorobenzene	1.3 U	1.2 U	1.2 U	1.1 U	1.1 U	1.1 U					
1,4-Dioxane	64 UQ	NS	64 UQ	NS	65 UQ	NS	58 UQ	NS	53 UQ	NS	55 UQ
2-Butanone	3.2 U	NS	3.2 U	NS	3.2 U	NS	2.9 U	NS	2.6 U	NS	2.8 U
2-Hexanone	3.2 U	NS	3.2 U	NS	3.3 U	NS	2.9 U	NS	2.6 UQ	NS	2.8 UQ
4-Methyl-2-pentanone	3.2 U	NS	3.2 U	NS	3.3 U	NS	2.9 U	NS	2.6 U	NS	2.8 U
Acetone	2.7 JBQ	NS	9.7 JBQ	NS	4.1 JBQ	NS	3.5 JBQ	NS	26 BQ	NS	14 UQ
Benzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Bromochloromethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Bromodichloromethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 UQ	NS	1.1 UQ
Bromoform	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Bromomethane	6.4 U	NS	6.4 U	NS	6.5 U	NS	5.8 U	NS	5.3 U	NS	5.5 U
Carbon disulfide	6.4 U	NS	6.4 U	NS	6.5 U	NS	5.8 U	NS	5.3 U	NS	5.5 U
Carbon tetrachloride	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Chlorobenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Chloroethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Chloroform	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Chloromethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 UQ	NS	1.1 UQ
cis-1,2-Dichloroethene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
cis-1,3-Dichloropropene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Cyclohexane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 UQ	NS	1.1 UQ
Dibromochloromethane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Dichlorodifluoromethane (Freon-12)	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Ethylbenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Isopropylbenzene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
m- and p-Xylene	2.5 U	NS	2.6 U	NS	2.6 U	NS	2.3 U	NS	2.1 U	NS	2.2 U
Methyl acetate	6.4 U	NS	6.4 U	NS	6.5 U	NS	5.8 U	NS	5.3 UQ	NS	5.5 UQ
Methylcyclohexane	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Methylene chloride	1 J	NS	6.4 U	NS	6.5 U	NS	5.8 U	NS	0.7 JBQ	NS	5.5 UQ
Methyl-tert-butyl ether (MTBE)	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
o-Xylene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Styrene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Tetrachloroethene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Toluene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
trans-1,2-Dichloroethene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
trans-1,3-Dichloropropene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Trichloroethene	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Trichlorofluoromethane (Freon-11)	1.3 U	NS	1.3 U	NS	1.3 U	NS	1.2 U	NS	1.1 U	NS	1.1 U
Vinyl chloride	1.3 UQ	NS	1.3 UQ	NS	1.3 UQ	NS	1.2 UQ	NS	1.1 UQ	NS	1.1 UQ
Xylene, total	2.5 U	NS	2.6 U	NS	2.6 U	NS	2.3 U	NS	2.1 U	NS	2.2 U

Notes:
 B - Analyte also detected in an associated laboratory blank
 J - Analyte present. Value may or may not be accurate or precise
 NS - Not sampled
 Q - One or more QC criteria recovered outside acceptance limits
 U - The material was analyzed for, but not detected
 UG/KG - Microgram per kilogram
 Shading indicates unreliable result

TABLE B-11a
 Reprocessed VOC Confirmation Sampling RAW Analytical
 Results - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW07-0814old	TR-5TH-CSW07D-0814new	TR-5TH-CSW07D-0814old	TR-5TH-CSW08-0814new	TR-5TH-CSW08-0814old	TR-5TH-CSW09-0814new	TR-5TH-CSW09-0814old	TR-5TH-CSW10-0814new	TR-5TH-CSW10-0814old	TR-5TH-CSW11-0814new	TR-5TH-CSW11-0814old
Sample Date	8/1/14 12:50	8/1/14 12:50	8/1/14 12:50	8/1/14 12:55	8/1/14 12:55	8/1/14 13:00	8/1/14 13:00	8/1/14 11:30	8/1/14 11:30	8/1/14 11:35	8/1/14 11:35
Chemical Name											
Volatile Organic Compounds (UG/KG)											
1,1,1-Trichloroethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,1,2,2-Tetrachloroethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	NS	1.2 UQ	NS	1.1 UQ	NS	1.2 UQ	NS	1 UQ	NS	1 UQ	NS
1,1,2-Trichloroethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
1,1-Dichloroethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,1-Dichloroethene	NS	1.2 UQ	NS	1.1 UQ	NS	1.2 UQ	NS	1 UQ	NS	1 UQ	NS
1,2,3-Trichlorobenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,2,4-Trichlorobenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,2-Dibromo-3-chloropropane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
1,2-Dibromoethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,2-Dichlorobenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,2-Dichloroethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
1,2-Dichloropropane	NS	1.1 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,3-Dichlorobenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
1,4-Dichlorobenzene	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1 UQ	1 UQ	1 U	1 U
1,4-Dioxane	NS	59 UQ	NS	57 UQ	NS	59 UQ	NS	52 UQ	NS	50 UQ	NS
2-Butanone	NS	3 U	NS	2.8 U	NS	2.9 U	NS	2.6 UQ	NS	2.5 U	NS
2-Hexanone	NS	3 UQ	NS	2.8 UQ	NS	2.9 UQ	NS	2.6 UQ	NS	2.5 UQ	NS
4-Methyl-2-pentanone	NS	3 U	NS	2.8 U	NS	2.9 U	NS	2.6 UQ	NS	2.5 U	NS
Acetone	NS	3.8 JBQ	NS	2.5 JBQ	NS	15 UQ	NS	4.2 JQ	NS	13 UQ	NS
Benzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Bromochloromethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Bromodichloromethane	NS	1.2 UQ	NS	1.1 UQ	NS	1.2 UQ	NS	1 U	NS	1 UQ	NS
Bromoform	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Bromomethane	NS	5.9 U	NS	5.7 U	NS	5.9 U	NS	5.2 UQ	NS	5 U	NS
Carbon disulfide	NS	5.9 U	NS	5.7 U	NS	5.9 U	NS	5.2 UQ	NS	5 U	NS
Carbon tetrachloride	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Chlorobenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Chloroethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
Chloroform	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
Chloromethane	NS	1.2 UQ	NS	1.1 UQ	NS	1.2 UQ	NS	1 UQ	NS	1 UQ	NS
cis-1,2-Dichloroethene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
cis-1,3-Dichloropropene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Cyclohexane	NS	1.2 UQ	NS	1.1 UQ	NS	1.2 UQ	NS	1 UQ	NS	1 UQ	NS
Dibromochloromethane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
Dichlorodifluoromethane (Freon-12)	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
Ethylbenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Isopropylbenzene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
m- and p-Xylene	NS	2.4 U	NS	2.3 U	NS	2.4 U	NS	2.1 UQ	NS	2 U	NS
Methyl acetate	NS	5.9 UQ	NS	5.7 UQ	NS	5.9 UQ	NS	5.2 UQ	NS	5 UQ	NS
Methylcyclohexane	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Methylene chloride	NS	0.9 JBQ	NS	0.8 JBQ	NS	5.9 UQ	NS	0.8 JBQ	NS	0.7 JBQ	NS
Methyl-tert-butyl ether (MTBE)	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
o-Xylene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Styrene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Tetrachloroethene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
Toluene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
trans-1,2-Dichloroethene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
trans-1,3-Dichloropropene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Trichloroethene	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 UQ	NS	1 U	NS
Trichlorofluoromethane (Freon-11)	NS	1.2 U	NS	1.1 U	NS	1.2 U	NS	1 U	NS	1 U	NS
Vinyl chloride	NS	1.2 UQ	NS	1.1 UQ	NS	1.2 UQ	NS	1 UQ	NS	1 UQ	NS
Xylene, total	NS	2.4 U	NS	2.3 U	NS	2.4 U	NS	2.1 U	NS	2 U	NS

Notes:
 B - Analyte also detected in an associated laboratory blank
 J - Analyte present. Value may or may not be accurate or precise
 NS - Not sampled
 Q - One or more QC criteria recovered outside acceptance limits
 U - The material was analyzed for, but not detected
 UG/KG - Microgram per kilogram
 Shading indicates unreliable result

TABLE B-11a
 Reprocessed VOC Confirmation Sampling RAW Analytical
 Results - 5th Street Disposal Area
 TRDA RA Construction Completion/RA Completion Report
 Harvey Point Defense Testing Activity
 Hertford, North Carolina

Sample ID	TR-5TH-CSW11D-0814new	TR-5TH-CSW11D-0814old	TR-5TH-CSW12-0814new	TR-5TH-CSW12-0814old	TR-5TH-CSW13-0814new	TR-5TH-CSW13-0814old	TR-5TH-CSW14-0814new	TR-5TH-CSW14-0814old	TR-5TH-CSW15-0814new	TR-5TH-CSW15-0814old
Sample Date	8/1/14 11:35	8/1/14 11:35	8/1/14 11:40	8/1/14 11:40	8/1/14 11:45	8/1/14 11:45	8/1/14 11:50	8/1/14 11:50	8/1/14 12:00	8/1/14 12:00
Chemical Name										
Volatile Organic Compounds (UG/KG)										
1,1,1-Trichloroethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,1,2,2-Tetrachloroethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	1 UQ	NS	1 UQ	NS	1 UQ	NS	1.1 UQ	NS	1.3 UQ	NS
1,1,2-Trichloroethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,1-Dichloroethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,1-Dichloroethene	1 UQ	NS	1 UQ	NS	1 UQ	NS	1.1 UQ	NS	1.3 UQ	NS
1,2,3-Trichlorobenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,2,4-Trichlorobenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,2-Dibromo-3-chloropropane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,2-Dibromoethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,2-Dichlorobenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,2-Dichloroethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,2-Dichloropropane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,3-Dichlorobenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U	1.1 U	1.3 U	1.3 U
1,4-Dioxane	51 UQ	NS	52 UQ	NS	50 UQ	NS	53 UQ	NS	63 UQ	NS
2-Butanone	2.5 U	NS	2.6 U	NS	2.5 U	NS	2.7 U	NS	3.2 U	NS
2-Hexanone	2.5 UQ	NS	2.6 UQ	NS	2.5 UQ	NS	2.7 UQ	NS	3.2 UQ	NS
4-Methyl-2-pentanone	2.5 U	NS	2.6 U	NS	2.5 U	NS	2.7 U	NS	3.2 U	NS
Acetone	31 BQ	NS	13 UQ	NS	13 UQ	NS	6.7 JBQ	NS	6.6 JBQ	NS
Benzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Bromochloromethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Bromodichloromethane	1 UQ	NS	1 UQ	NS	1 UQ	NS	1.1 UQ	NS	1.3 UQ	NS
Bromoform	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Bromomethane	5.1 U	NS	5.2 U	NS	5 U	NS	5.3 U	NS	6.3 U	NS
Carbon disulfide	5.1 U	NS	5.2 U	NS	5 U	NS	5.3 U	NS	6.3 U	NS
Carbon tetrachloride	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Chlorobenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Chloroethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Chloroform	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Chloromethane	1 UQ	NS	1 UQ	NS	1 UQ	NS	1.1 UQ	NS	1.3 UQ	NS
cis-1,2-Dichloroethene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
cis-1,3-Dichloropropene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Cyclohexane	1 UQ	NS	1 UQ	NS	1 UQ	NS	1.1 UQ	NS	1.3 UQ	NS
Dibromochloromethane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Dichlorodifluoromethane (Freon-12)	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Ethylbenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Isopropylbenzene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
m- and p-Xylene	2 U	NS	2.1 U	NS	1 J	NS	2.1 U	NS	2.5 U	NS
Methyl acetate	21 Q	NS	5.2 UQ	NS	5 UQ	NS	5.3 UQ	NS	6.3 UQ	NS
Methylcyclohexane	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Methylene chloride	0.9 JBQ	NS	5.2 UQ	NS	5 UQ	NS	5.3 UQ	NS	6.3 UQ	NS
Methyl-tert-butyl ether (MTBE)	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
o-Xylene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Styrene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Tetrachloroethene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Toluene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	0.7 J	NS
trans-1,2-Dichloroethene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
trans-1,3-Dichloropropene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Trichloroethene	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Trichlorofluoromethane (Freon-11)	1 U	NS	1 U	NS	1 U	NS	1.1 U	NS	1.3 U	NS
Vinyl chloride	1 UQ	NS	1 UQ	NS	1 UQ	NS	1.1 UQ	NS	1.3 UQ	NS
Xylene, total	2 U	NS	2.1 U	NS	1 J	NS	2.1 U	NS	2.5 U	NS

Notes:
 B - Analyte also detected in an associated laboratory blank
 J - Analyte present. Value may or may not be accurate or precise
 NS - Not sampled
 Q - One or more QC criteria recovered outside acceptance limits
 U - The material was analyzed for, but not detected
 UG/KG - Microgram per kilogram
 Shading indicates unreliable result

TABLE B-11b

Reprocessed VOC Confirmation Sampling

Results - 5th Street Disposal Area

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	Protection of Groundwater Preliminary Soil Remediation Goal (PSRG) (September 2015)	Residential Health-Based PSRG (September 2015)	TR-5TH-CSF01-0814new	TR-5TH-CSF03-0814new	TR-5TH-CSF04-0814new	TR-5TH-CSF05-0814new	TR-5TH-CSF05D-0814new
Sample Date			8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name							
Volatile Organic Compounds (UG/KG)							
Acetone	24,000	12,000,000	14 JBQ	23 JBQ	1.9 JBQ	5.4 JBQ	13 JBQ
m- and p-Xylene	--	120,000	2.1 U	2.1 UQ	2 U	2.6 U	2.4 U
Methyl acetate	--	16,000,000	5.3 UQ	5.4 UQ	5.1 UQ	6.4 UQ	6 UQ
Methylene chloride	23	56,000	1.1 JBQ	0.8 J	5.1 UQ	6.4 UQ	6 UQ
Toluene	5,500	820,000	1.1 U	1.1 UQ	1 U	1.3 U	1.2 U
Xylene, total	5,800	130,000	2.1 U	2.1 UQ	2 U	2.6 U	2.4 U

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

NS - Not sampled

Q - One or more QC criteria recovered outside acceptance limit:

U - The material was analyzed for, but not detected

UG/KG - Microgram per kilogram

Bold text indicates detection

TABLE B-11b

Reprocessed VOC Confirmation Sampling

Results - 5th Street Disposal Area

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	TR-5TH-CSF06-0814new	TR-5TH-CSF07-0814new	TR-5TH-CSF08-0814new	TR-5TH-CSF09-0814new	TR-5TH-CSW01-0814new	TR-5TH-CSW02-0814new	TR-5TH-CSW03-0814new
Sample Date	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name							
Volatile Organic Compounds (UG/KG)							
Acetone	3.2 JQ	2.8 JQ	7.1 JQ	24 JBQ	22 JBQ	2.7 JBQ	9.7 JBQ
m- and p-Xylene	2.1 U	2 U	2.4 U	2.5 UQ	2.1 U	2.5 U	2.6 U
Methyl acetate	5.3 U	5.1 U	6 U	6.3 UQ	5.2 U	6.4 U	6.4 U
Methylene chloride	5.3 UQ	0.9 JBQ	6 UQ	1.4 JBQ	0.7 J	1 J	6.4 U
Toluene	1.1 U	1 U	1.2 U	1.3 U	0.8 J	1.3 U	1.3 U
Xylene, total	2.1 U	2 U	2.4 U	2.5 U	2.1 U	2.5 U	2.6 U

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

NS - Not sampled

Q - One or more QC criteria recovered outside acceptance limit:

U - The material was analyzed for, but not detected

UG/KG - Microgram per kilogram

Bold text indicates detection

TABLE B-11b

Reprocessed VOC Confirmation Sampling

Results - 5th Street Disposal Area

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	TR-5TH-CSW04-0814new	TR-5TH-CSW05-0814new	TR-5TH-CSW06-0814new	TR-5TH-CSW07-0814new	TR-5TH-CSW07D-0814new	TR-5TH-CSW08-0814new	TR-5TH-CSW09-0814new
Sample Date	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name							
Volatile Organic Compounds (UG/KG)							
Acetone	4.1 JBQ	3.5 JBQ	26 BQ	14 UQ	3.8 JBQ	2.5 JBQ	15 UQ
m- and p-Xylene	2.6 U	2.3 U	2.1 U	2.2 U	2.4 U	2.3 U	2.4 U
Methyl acetate	6.5 U	5.8 U	5.3 UQ	5.5 UQ	5.9 UQ	5.7 UQ	5.9 UQ
Methylene chloride	6.5 U	5.8 U	0.7 JBQ	5.5 UQ	0.9 JBQ	0.8 JBQ	5.9 UQ
Toluene	1.3 U	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.2 U
Xylene, total	2.6 U	2.3 U	2.1 U	2.2 U	2.4 U	2.3 U	2.4 U

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

NS - Not sampled

Q - One or more QC criteria recovered outside acceptance limit:

U - The material was analyzed for, but not detected

UG/KG - Microgram per kilogram

Bold text indicates detection

TABLE B-11b

Reprocessed VOC Confirmation Sampling

Results - 5th Street Disposal Area

TRDA RA Construction Completion/RA Completion Report

Harvey Point Defense Testing Activity

Hertford, North Carolina

Sample ID	TR-5TH-CSW10-0814new	TR-5TH-CSW11-0814new	TR-5TH-CSW11D-0814new	TR-5TH-CSW13-0814new	TR-5TH-CSW14-0814new	TR-5TH-CSW15-0814new
Sample Date	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14	8/1/14
Chemical Name						
Volatile Organic Compounds (UG/KG)						
Acetone	4.2 JQ	13 UQ	31 BQ	13 UQ	6.7 JBQ	6.6 JBQ
m- and p-Xylene	2.1 UQ	2 U	2 U	1 J	2.1 U	2.5 U
Methyl acetate	5.2 UQ	5 UQ	21 Q	5 UQ	5.3 UQ	6.3 UQ
Methylene chloride	0.8 JBQ	0.7 JBQ	0.9 JBQ	5 UQ	5.3 UQ	6.3 UQ
Toluene	1 UQ	1 U	1 U	1 U	1.1 U	0.7 J
Xylene, total	2.1 U	2 U	2 U	1 J	2.1 U	2.5 U

Notes:

B - Analyte also detected in an associated laboratory blank

J - Analyte present. Value may or may not be accurate or precise

NS - Not sampled

Q - One or more QC criteria recovered outside acceptance limit:

U - The material was analyzed for, but not detected

UG/KG - Microgram per kilogram

Bold text indicates detection

Attachment C
Transportation and Disposal Documentation

Attachment C is provided electronically on the attached CD.

Attachment D
Well Abandonment Records

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

James William Madson

Well Contractor Name (or well owner personally abandoning well on his/her property)

4214-C

NC Well Contractor Certification Number

Osage of Virginia, Inc

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.) if known

3. Well use (check well use):

Water Supply Well:

- | | |
|--|--|
| <input type="checkbox"/> Agricultural | <input type="checkbox"/> Municipal/Public |
| <input type="checkbox"/> Geothermal (Heating/Cooling Supply) | <input type="checkbox"/> Residential Water Supply (single) |
| <input type="checkbox"/> Industrial/Commercial | <input type="checkbox"/> Residential Water Supply (shared) |
| <input type="checkbox"/> Irrigation | |

Non-Water Supply Well:

- | | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Monitoring | <input type="checkbox"/> Recovery |
|--|-----------------------------------|

Injection Well:

- | | |
|--|---|
| <input type="checkbox"/> Aquifer Recharge | <input type="checkbox"/> Groundwater Remediation |
| <input type="checkbox"/> Aquifer Storage and Recovery | <input type="checkbox"/> Salinity Barrier |
| <input type="checkbox"/> Aquifer Test | <input type="checkbox"/> Stormwater Drainage |
| <input type="checkbox"/> Experimental Technology | <input type="checkbox"/> Subsidence Control |
| <input type="checkbox"/> Geothermal (Closed Loop) | <input type="checkbox"/> Tracer |
| <input type="checkbox"/> Geothermal (Heating/Cooling Return) | <input type="checkbox"/> Other (explain under 7g) |

4. Date well(s) abandoned: 7/30/14

5a. Well location:

Harvey Point Defense Base

Facility Owner Name

Facility ID# (if applicable)

2835 Harvey Point Rd, Hertford, NC 27944

Physical Address, City, and Zip

Perquimans

County

Parcel Identification No (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:

(if well field, one lat/long is sufficient)

36.10462589DD N 76.33486390 DD W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form

6a. Well ID#: TR-2ND-MW01

6b. Total well depth: 27 (ft.)

6c. Borehole diameter: 2 (in.)

6d. Water level below ground surface: 8.35 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): 7 (ft.)

6g. Screen length (if known): 20 (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: one (1)

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 3 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Neat Cement Grout | <input type="checkbox"/> Bentonite Chips or Pellets |
| <input type="checkbox"/> Sand Cement Grout | <input type="checkbox"/> Dry Clay |
| <input type="checkbox"/> Concrete Grout | <input type="checkbox"/> Drill Cuttings |
| <input checked="" type="checkbox"/> Specialty Grout | <input type="checkbox"/> Gravel |
| <input type="checkbox"/> Bentonite Slurry | <input type="checkbox"/> Other (explain under 7g) |

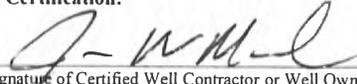
7f. For each material selected above, provide amount of materials used:

<u>40 lbs Portland Cement</u>	<u>4 gallons H2O</u>
<u>4 lbs Bentonite</u>	<u>(all amounts estimated)</u>

7g. Provide a brief description of the abandonment procedure:

25' tremie pipe and a Airplaco Handy-Grout HG-9 hand operated pump were used to pump the grout mix. 5' of casing and concrete pad removed during excavation activities

8. Certification:


Signature of Certified Well Contractor or Well Owner

8/10/14

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. **For All Wells:** Submit this form within 30 days of completion of well abandonment to the following

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. **For Injection Wells:** In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. **For Water Supply & Injection Wells:** In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned



NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3544

1. WELL CONTRACTOR:

Joshua Ellingworth
Well Contractor (Individual) Name
Parratt-Wolff, Inc.
Well Contractor Company Name
501 Millstone Drive
Street Address
Hillsborough NC 27278
City or Town State Zip Code

(919) 644-2814
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# _____
OTHER ASSOCIATED PERMIT#(if applicable) _____
SITE WELL ID #(if applicable) TR-2ND-MW01

3. WELL USE (Check One Box) Monitoring Municipal/Public
Industrial/Commercial Agricultural Recovery Injection
Irrigation Other (list use) _____
DATE DRILLED 6/10-6/11/13

4. WELL LOCATION:

2nd Street
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: Hertford COUNTY Perquimans
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
 Slope Valley Flat Ridge Other _____
LATITUDE 36 ° ' " DMS OR 36.10462589 DD
LONGITUDE 76 ° ' " DMS OR 76.33486390 DD
Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Harvey Point Defense Testin
Facility Name Facility ID# (if applicable)
2835 Harvey Point Road
Street Address
Hertford NC 27944
City or Town State Zip Code
Contact Name _____
Mailing Address _____
City or Town State Zip Code

() _____
Area code Phone number

6. WELL DETAILS:

- a. TOTAL DEPTH: 27.0'
- b. DOES WELL REPLACE EXISTING WELL? YES NO
- c. WATER LEVEL Below Top of Casing: 13.0 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 2.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A
f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):
Top N/A Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____

7. CASING: Depth	Diameter	Thickness/Weight	Material
Top <u>0</u> Bottom <u>7.0</u>	Ft. <u>2"</u>	<u>Sch40</u>	<u>PVC</u>
Top _____ Bottom _____	Ft. _____	_____	_____
Top _____ Bottom _____	Ft. _____	_____	_____

8. GROUT: Depth	Material	Method
Top <u>0</u> Bottom <u>3.0</u>	Ft. <u>Portland</u>	<u>Tremie</u>
Top <u>3.0</u> Bottom <u>5.0</u>	Ft. <u>Bentonite</u>	<u>Tremie</u>
Top _____ Bottom _____	Ft. _____	_____

9. SCREEN: Depth	Diameter	Slot Size	Material
Top <u>7.0</u> Bottom <u>27.0</u>	Ft. <u>2</u> in.	<u>.010</u> in.	<u>PVC</u>
Top _____ Bottom _____	Ft. _____ in.	_____ in.	_____
Top _____ Bottom _____	Ft. _____ in.	_____ in.	_____

10. SAND/GRAVEL PACK: Depth	Size	Material
Top <u>5.0</u> Bottom <u>27.0</u>	Ft. <u>#1</u>	<u>Sand</u>
Top _____ Bottom _____	Ft. _____	_____
Top _____ Bottom _____	Ft. _____	_____

11. DRILLING LOG	Formation Description
Top _____ Bottom <u>0 / 4.0'</u>	<u>Brown/tan, moist, silty SAND & CLAY</u>
_____ / _____	_____
Top _____ Bottom <u>4.0 / 8.0</u>	<u>Green/tan, moist CLAY; some sand</u>
_____ / _____	_____
Top _____ Bottom <u>8.0 / 12.0</u>	<u>Green, wet CLAY; some sand</u>
_____ / _____	_____
Top _____ Bottom <u>12.0 / 16.0</u>	<u>Brown/tan, moist, sandy CLAY</u>
_____ / _____	_____
Top _____ Bottom <u>16.0 / 20.0</u>	<u>Brown/tan, wet, fine/medium, silty SAND</u>
_____ / _____	_____
Top _____ Bottom <u>28.0 / 32.0</u>	<u>Blue/gray, moist CLAY; some silt</u>
_____ / _____	_____
Top _____ Bottom <u>32.0 / 36.0</u>	<u>Brown/tan, wet, fine/medium</u>

12. REMARKS:
SAND; trace silt

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

Joshua Ellingworth 7/13/13
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE
Joshua Ellingworth
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

For Internal Use ONLY.

1. Well Contractor Information:

James William Madson

Well Contractor Name (or well owner personally abandoning well on his/her property)

4214-C

NC Well Contractor Certification Number

Osage of Virginia, Inc

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.) if known

3. Well use (check well use):

Water Supply Well:	
<input type="checkbox"/> Agricultural	<input type="checkbox"/> Municipal/Public
<input type="checkbox"/> Geothermal (Heating/Cooling Supply)	<input type="checkbox"/> Residential Water Supply (single)
<input type="checkbox"/> Industrial/Commercial	<input type="checkbox"/> Residential Water Supply (shared)
<input type="checkbox"/> Irrigation	
Non-Water Supply Well:	
<input checked="" type="checkbox"/> Monitoring	<input type="checkbox"/> Recovery
Injection Well:	
<input type="checkbox"/> Aquifer Recharge	<input type="checkbox"/> Groundwater Remediation
<input type="checkbox"/> Aquifer Storage and Recovery	<input type="checkbox"/> Salinity Barrier
<input type="checkbox"/> Aquifer Test	<input type="checkbox"/> Stormwater Drainage
<input type="checkbox"/> Experimental Technology	<input type="checkbox"/> Subsidence Control
<input type="checkbox"/> Geothermal (Closed Loop)	<input type="checkbox"/> Tracer
<input type="checkbox"/> Geothermal (Heating/Cooling Return)	<input type="checkbox"/> Other (explain under 7g)

4. Date well(s) abandoned: 7/30/14

5a. Well location:

Harvey Point Defense Base

Facility/Owner Name

Facility ID# (if applicable)

2835 Harvey Point Rd, Hertford, NC 27944

Physical Address, City, and Zip

Perquimans

County

Parcel Identification No (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36.10449587DD N 76.33535206 DD W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form

6a. Well ID#: TR-2ND-MW02

6b. Total well depth: 27 (ft.)

6c. Borehole diameter: 2 (in.)

6d. Water level below ground surface: 7.90 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): 7 (ft.)

6g. Screen length (if known): 20 (ft.)

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: one (1)

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 3 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Neat Cement Grout | <input type="checkbox"/> Bentonite Chips or Pellets |
| <input type="checkbox"/> Sand Cement Grout | <input type="checkbox"/> Dry Clay |
| <input type="checkbox"/> Concrete Grout | <input type="checkbox"/> Drill Cuttings |
| <input checked="" type="checkbox"/> Specialty Grout | <input type="checkbox"/> Gravel |
| <input type="checkbox"/> Bentonite Slurry | <input type="checkbox"/> Other (explain under 7g) |

7f. For each material selected above, provide amount of materials used:

40 lbs Portland Cement 4 gallons H2O
4 lbs Bentonite (all amounts estimated)

7g. Provide a brief description of the abandonment procedure:

25' tremie pipe and a Airplaco Handy-Grout HG-9 hand operated pump were used to pump the grout mix. 5' of casing and concrete pad removed during excavation activities

8. Certification:


Signature of Certified Well Contractor or Well Owner

8/10/14

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. **For All Wells:** Submit this form within 30 days of completion of well abandonment to the following

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. **For Injection Wells:** In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. **For Water Supply & Injection Wells:** In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.



NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3544

1. WELL CONTRACTOR:

Joshua Ellingworth
Well Contractor (Individual) Name
Parratt-Wolff, Inc.
Well Contractor Company Name
501 Millstone Drive
Street Address
Hillsborough NC 27278
City or Town State Zip Code

(919) 644-2814
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# _____

OTHER ASSOCIATED PERMIT#(if applicable) _____

SITE WELL ID #(if applicable) TR-2ND-MW02

3. WELL USE (Check One Box) Monitoring Municipal/Public
Industrial/Commercial Agricultural Recovery Injection
Irrigation Other (list use) _____
DATE DRILLED 6/11/13

4. WELL LOCATION:

2nd Street
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hertford COUNTY Perquimans

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
 Slope Valley Flat Ridge Other _____

LATITUDE 36 ° ' " DMS OR 36.10449587 DD

LONGITUDE 76 ° ' " DMS OR 76.33535206 DD

Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Harvey Point Defense Test
Facility Name Facility ID# (if applicable)

2835 Harvey Point Road
Street Address

Hertford NC 27944
City or Town State Zip Code

Contact Name _____

Mailing Address _____

City or Town State Zip Code _____

() _____
Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 27.0'

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: 12.0 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 2.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A

f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):
Top N/A Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____

7. CASING:	Depth	Diameter	Thickness/Weight	Material
Top	<u>0</u>	Bottom <u>7.0</u>	Ft. <u>2"</u>	<u>Sch40 PVC</u>
Top	_____	Bottom _____	Ft. _____	_____
Top	_____	Bottom _____	Ft. _____	_____

8. GROUT:	Depth	Material	Method
Top	<u>0</u>	Bottom <u>3.0</u>	Ft. <u>Portland</u> <u>Tremie</u>
Top	<u>3.0</u>	Bottom <u>5.0</u>	Ft. <u>Bentonite</u> <u>Tremie</u>
Top	_____	Bottom _____	Ft. _____

9. SCREEN:	Depth	Diameter	Slot Size	Material
Top	<u>7.0</u>	Bottom <u>27.0</u>	Ft. <u>2</u> in. <u>.010</u> in.	<u>PVC</u>
Top	_____	Bottom _____	Ft. _____ in. _____ in.	_____
Top	_____	Bottom _____	Ft. _____ in. _____ in.	_____

10. SAND/GRAVEL PACK:	Depth	Size	Material
Top	<u>5.0</u>	Bottom <u>27.0</u>	Ft. <u>#1</u> <u>Sand</u>
Top	_____	Bottom _____	Ft. _____
Top	_____	Bottom _____	Ft. _____

11. DRILLING LOG	Top	Bottom	Formation Description
	<u>0</u>	<u>4.0'</u>	<u>Black/brown, moist, silty, fine/medium SAND; some gravel</u>
	<u>8.0</u>	<u>12.0</u>	<u>Green/gray, moist silty CLAY; little fine/medium sand</u>
	<u>12.0</u>	<u>16.0</u>	<u>Brown/tan, wet, silty, fine/medium SAND</u>
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

12. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER
[Signature] 7/13/13
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Joshua Ellingworth
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

James William Madson

Well Contractor Name (or well owner personally abandoning well on his/her property)

4214-C

NC Well Contractor Certification Number

Osage of Virginia, Inc

Company Name

2. Well Construction Permit #:

List all applicable well permits (i.e. County, State, Variance, Injection, etc.) if known

3. Well use (check well use):

Water Supply Well:

- | | |
|--|--|
| <input type="checkbox"/> Agricultural | <input type="checkbox"/> Municipal/Public |
| <input type="checkbox"/> Geothermal (Heating/Cooling Supply) | <input type="checkbox"/> Residential Water Supply (single) |
| <input type="checkbox"/> Industrial/Commercial | <input type="checkbox"/> Residential Water Supply (shared) |
| <input type="checkbox"/> Irrigation | |

Non-Water Supply Well:

- | | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Monitoring | <input type="checkbox"/> Recovery |
|--|-----------------------------------|

Injection Well:

- | | |
|--|---|
| <input type="checkbox"/> Aquifer Recharge | <input type="checkbox"/> Groundwater Remediation |
| <input type="checkbox"/> Aquifer Storage and Recovery | <input type="checkbox"/> Salinity Barrier |
| <input type="checkbox"/> Aquifer Test | <input type="checkbox"/> Stormwater Drainage |
| <input type="checkbox"/> Experimental Technology | <input type="checkbox"/> Subsidence Control |
| <input type="checkbox"/> Geothermal (Closed Loop) | <input type="checkbox"/> Tracer |
| <input type="checkbox"/> Geothermal (Heating/Cooling Return) | <input type="checkbox"/> Other (explain under 7g) |

4. Date well(s) abandoned: 7/23/14

5a. Well location:

Harvey Point Defense Base

Facility/Owner Name

Facility ID# (if applicable)

2835 Harvey Point Rd, Hertford, NC 27944

Physical Address, City, and Zip

Perquimans

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36.10343400 DD N 76.33073866 DD W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

6a. Well ID#: TR-5TH-MW01

6b. Total well depth: 27 (ft.)

6c. Borehole diameter: 2 (in.)

6d. Water level below ground surface: 4.20 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): 7 (ft.)

6g. Screen length (if known): 20 (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: one (1)

For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 4 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Neat Cement Grout | <input type="checkbox"/> Bentonite Chips or Pellets |
| <input type="checkbox"/> Sand Cement Grout | <input type="checkbox"/> Dry Clay |
| <input type="checkbox"/> Concrete Grout | <input type="checkbox"/> Drill Cuttings |
| <input checked="" type="checkbox"/> Specialty Grout | <input type="checkbox"/> Gravel |
| <input type="checkbox"/> Bentonite Slurry | <input type="checkbox"/> Other (explain under 7g) |

7f. For each material selected above, provide amount of materials used:

40 lbs Portland Cement 4 gallons H2O
4 lbs Bentonite (all amounts estimated)

7g. Provide a brief description of the abandonment procedure:

25' tremie pipe and a Airplaco Handy-Grout HG-9
hand operated pump were used to pump the grout mix.
7' of casing and concrete pad removed during
excavation activities

8. Certification:


Signature of Certified Well Contractor or Well Owner

7/23/14
Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. **For All Wells:** Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Resources, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. **For Injection Wells:** In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Resources, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. **For Water Supply & Injection Wells:** In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.



NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3544

1. WELL CONTRACTOR:

Joshua Ellingworth
Well Contractor (Individual) Name
Parratt-Wolff, Inc.
Well Contractor Company Name
501 Millstone Drive
Street Address
Hillsborough NC 27278
City or Town State Zip Code
(919) 644-2814
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# _____
OTHER ASSOCIATED PERMIT#(if applicable) _____
SITE WELL ID #(if applicable) TR-5TH-MW01

3. WELL USE (Check One Box) Monitoring Municipal/Public
Industrial/Commercial Agricultural Recovery Injection
Irrigation Other (list use) _____
DATE DRILLED 6/12/13

4. WELL LOCATION:

5th Street
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: Hertford COUNTY Perquimans
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
 Slope Valley Flat Ridge Other _____
LATITUDE 36 ° ' " DMS OR 36.10343400 DD
LONGITUDE 76 ° ' " DMS OR 76.33073866 DD

Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Harvey Point Defense Test
Facility Name Facility ID# (if applicable) _____
2835 Harvey Point Road
Street Address
Hertford NC 27944
City or Town State Zip Code
Contact Name _____
Mailing Address _____
City or Town State Zip Code

() _____
Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 27.0'
b. DOES WELL REPLACE EXISTING WELL? YES NO
c. WATER LEVEL Below Top of Casing: 5.0 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 2.0 FT. Above Land Surface*

*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): N/A METHOD OF TEST N/A
f. DISINFECTION: Type N/A Amount N/A

g. WATER ZONES (depth):

Top <u>N/A</u>	Bottom _____	Top _____	Bottom _____
Top _____	Bottom _____	Top _____	Bottom _____
Top _____	Bottom _____	Top _____	Bottom _____

7. CASING: Depth	Diameter	Thickness/Weight	Material
Top <u>0</u> Bottom <u>7.0</u> Ft. <u>2"</u>		<u>Sch40</u>	<u>PVC</u>
Top _____ Bottom _____ Ft. _____			
Top _____ Bottom _____ Ft. _____			

8. GROUT: Depth	Material	Method
Top <u>0</u> Bottom <u>3.0</u> Ft. <u>Portland</u>		<u>Tremie</u>
Top <u>3.0</u> Bottom <u>5.0</u> Ft. <u>Bentonite</u>		<u>Tremie</u>
Top _____ Bottom _____ Ft. _____		

9. SCREEN: Depth	Diameter	Slot Size	Material
Top <u>7.0</u> Bottom <u>27.0</u> Ft. <u>2</u> in. <u>.010</u> in. <u>PVC</u>			
Top _____ Bottom _____ Ft. _____ in. _____ in. _____			
Top _____ Bottom _____ Ft. _____ in. _____ in. _____			

10. SAND/GRAVEL PACK: Depth	Size	Material
Top <u>5.0</u> Bottom <u>27.0</u> Ft. <u>#1</u> <u>Sand</u>		
Top _____ Bottom _____ Ft. _____		
Top _____ Bottom _____ Ft. _____		

11. DRILLING LOG	Formation Description
Top _____ Bottom <u>0 / 4.0'</u>	<u>Brown, moist, silty, fine/medium SAND</u>
Top _____ Bottom <u>8.0 / 12.0</u>	<u>Green/gray, wet, fine/medium SILT & SAND</u>
Top _____ Bottom <u>12.0 / 16.0</u>	<u>Brown/tan, wet, silty, fine/medium SAND</u>
Top _____ Bottom _____	

12. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Joshua Ellingworth 7/13/13
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Attachment E
DGM Reports

Attachment E1
2nd Street Disposal Area DGM Report

GPR
MAGNETICS
ELECTROMAGNETICS
SEISMICS
RESISTIVITY
UTILITY LOCATION
UXO DETECTION
BOREHOLE CAMERA
STAFF SUPPORT

GEOPHYSICAL INVESTIGATION REPORT

Towers Road Disposal Areas (2nd Street Disposal Area)

Hertford, North Carolina

Dates of Investigation:
October 29th, 2015

FINAL
12 January 2016

NEW YORK
225 N. Route 303
Suite 102
Congers
New York 10920
(845) 268-1800
(845) 268-1802 Fax

VIRGINIA
P.O. Box 7325
Charlottesville
Virginia 22906
(434) 978-3187
(434) 973-9791 Fax

Prepared for
CH2M HILL
5701 Cleveland Street, Suite 200
Virginia Beach, VA 23462

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	BACKGROUND AND OBJECTIVES	1
1.2	SCOPE OF WORK	1
1.3	SITE LOCATION AND DESCRIPTION	1
2.0	EQUIPMENT	3
2.1	GEONICS EM31-MK2	3
2.2	TRIMBLE GEO XH GPS	4
3.0	METHODS	5
3.1	SUMMARY OF WORK PERFORMED	5
3.2	DIGITAL GEOPHYSICAL MAPPING	5
3.2.1	EM31-MK2 Survey	5
3.3	DATA PROCESSING	5
3.3.1	Raw Data Transfer	5
3.3.2	Preprocessing	6
3.3.3	Final Processing	6
3.3.4	Data Deliverables	6
4.0	QUALITY CONTROL	7
4.1	PERFORMANCE CRITERIA AND MEASURED QUALITY OBJECTIVES (MQOs)	7
4.1.1	Down-line Data Density (Along Line)	7
4.1.2	Survey Coverage (Across Line)	7
4.1.3	DGM System Data Repeatability	7
4.2	QUALITY CONTROL TESTS	7
4.2.1	Background and Spike Test	7
4.2.2	Vibration Test	8
4.2.3	Dynamic Response Test	8
5.0	RESULTS	9
5.1	QUALITY CONTROL	9
5.2	EM31-MK2 SURVEY	10
6.0	CONCLUSIONS	11
7.0	REFERENCES	12
	APPENDIX A: Sample Quality Control Figures	
	APPENDIX B: EM31-MK2 Final Site Mosaics	
	COMPACT DISC: Project Deliverables	

LIST OF TABLES

Table 1: EM31 Static Tests Mean Response Values	9
Table 2: EM31 Dynamic Tests Results	9

CD CONTENTS

- Raw Data
 - Field notes and database forms
 - Raw geophysical data files
 - Preprocessed data XYZ files
 - GPS data points
- Processed Data
 - Final processed XYZ files
 - Final repeat XYZ, map, and PDF plots
 - PDF and Geosoft color-contoured maps of geophysical data
 - Dynamic Repeatability processed XYZ, PDF and Geosoft color-contoured map
 - Static, cable shake, and personnel test processed XYZ, map, and PDF plots
- Mosaic
 - PDF and Geosoft map formats
- Report
 - Microsoft Word and PDF formats

ACRONYMS AND ABBREVIATIONS

ASCII	American Standard Code for Information Interchange
CD	Compact Disc
cm	Centimeter
DGM	Digital Geophysical Mapping
EM	Electromagnetic
ft	Feet
FTP	File Transfer Protocol
GLONASS	Globalnaya Navigazionnaya Sputnikovaya Sistema
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response
Hz	Hertz
in	Inch
IRA	Interim Remedial Action
m	Meter
MPC	Measured Performance Criteria
MQOs	Measured Quality Objectives
mS/m	milliSiemens per meter
NAEVA	NAEVA Geophysics, Inc.
NMEA	National Marine Electronics Association
OSHA	Occupational Safety and Health Administration
ppt	Parts Per Thousand
QC	Quality Control
RI	Remedial Investigation
sft	U.S. Survey Feet

1.0 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

NAEVA Geophysics, Inc. (NAEVA) conducted digital geophysical mapping (DGM) utilizing the EM31-MK2 (EM31) for CH2M HILL at the 2nd Street Disposal Area (part of the Towers Road Disposal Areas) located in Hertford, North Carolina on October 29th, 2015. The survey was conducted over an approximate 0.7 acre-area in support of an ongoing interim remedial action (IRA) to address wastes and impacted soils. An initial DGM survey was performed in 2013 at the site to delineate the lateral extent of suspected buried wastes. Excavations were conducted by CH2M HILL, based on the geophysical results to characterize and remove the wastes.

The objective of this follow-up DGM survey was to assess whether potential wastes remain in place below the excavation floor. During the Phase I of the Remedial Investigation (RI) metallic and non-metallic wastes, debris, munitions items and underground metallic utilities were identified within the investigation area footprint. This report summarizes the equipment, methods, and results of the geophysical investigation.

1.2 SCOPE OF WORK

NAEVA's personnel organization for the project consisted of a Field Geophysicist and Field Geo-Technician on-site with support from the Project Geophysicist, and Geophysical Data Processors at NAEVA's Charlottesville, Virginia office. NAEVA on-site personnel had 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training, with current (annual) 8-hour refresher training. NAEVA's geophysical functions included the following:

- Mobilization of qualified personnel and geophysical equipment;
- Daily quality control (QC) of geophysical data and positioning equipment;
- EM31 survey of approximately 0.7 acres at 5 foot (ft) line spacing;
- Data processing, analysis, and preparation of data deliverables;
- Database management and reporting.

1.3 SITE LOCATION AND DESCRIPTION

At the time of the follow-up DGM survey, the 2th Street Disposal Area contained exposed underground metallic utilities, documented cultural features (mud holes, trees, soil piles, silt fences, Magazine, 55 gallon drums and potential buried utility), and several large pits resulting from intrusive operations. Prior to the follow-up DGM survey, a silt-fence was erected and served as the DGM survey area boundary. Excavated wastes were deposited in piles on the west side of the site.

The area of investigation is primarily open, with a small portion containing moderate to dense canopy cover. The majority of the 2nd Street Disposal Area is primarily an unvegetated dirt field. The geology consists of sandy soils and lesser amounts of silt and clay, with groundwater reportedly encountered as shallow as 5 ft below ground surface. During intrusive operations, an estimated 2 to 6 ft of waste and soil were removed from portions of the footprint, resulting in a loose and uneven surface.

Munitions items had been previously encountered at the 2nd Street Disposal Area. CH2M HILL UXO personnel were on site in the event additional munitions items were encountered during the DGM survey.

2.0 EQUIPMENT

2.1 GEONICS EM31-MK2

The Geonics EM31-MK2 consists of boom-mounted coplanar electromagnetic transmitter and receiver coils that are mounted at a fixed distance of 12 ft apart. A current applied to the transmitter coil produces a time-varying magnetic field, which induces small secondary currents within the earth. These currents generate a secondary magnetic field, which is detected along with the primary field by the receiver coil. The instrument provides an output of both the quadrature phase (conductivity) and in-phase components of the induced electromagnetic field, which are recorded simultaneously. The in-phase component is primarily used in searching for buried metal, measuring in units of relative parts per thousand (ppt) of the Earth's magnetic field. A negative response is most often expected over areas of shallow buried metal debris in the conductivity measurement. For the in-phase measurement both a large negative and/or positive value could reflect buried metal. It should be noted that the relatively large coil separation of the EM31 gives the in-phase component a low susceptibility to discreet metallic items or small concentrations of metal. The quadrature-phase measures electrical conductivity in milliSiemens per meter (mS/m). Electrical conductivity is a function of porosity, conductivity of included soil moisture, degree of saturation, and the type of soil and rock. The absolute values of terrain conductivity are not usually diagnostic, but their spatial variations are important. The ability to identify lateral variations in the shallow subsurface makes quadrature-phase EM31 data very useful in mapping subsurface changes across a site.

EM31 data were collected along parallel transects spaced nominally 5 ft apart at a rate of 5 readings per second. The EM31 was carried at a height of approximately 2.8 ft above ground surface and was operated in the vertical dipole mode, where the maximum depth of investigation is approximately 18 ft. In this mode, the greatest contribution to the instrument response comes from materials in the 3 to 9 ft depth range. Data were recorded using an Allegro CX field computer running the EM31MK2 acquisition software.

2.2 TRIMBLE GEO XH GPS

Positional data were recorded during the DGM survey using a Trimble Geo XH GPS handheld unit. The Geo XH handheld was positioned in the middle of the EM31 instrument. With this system, a target resolution of approximately 2 meters can generally be expected. The Trimble Geo XH GPS is a 220-channel GPS receiver that uses L1, L2, L2C, L2E, Globalnaya Navigazionnaya Sputnikovaya Sistema (GLONASS) and Galileo satellite frequencies. Floodlight was enabled on the unit to reduce satellite shadow. The result is improved positioning in areas near buildings and trees. Under ideal conditions, a horizontal accuracy of 0.75 meters can be expected when 5 or more satellites are visible. The accuracy of the GPS rover depends largely on the number and position of available satellites, which may be obstructed by local features such as buildings or dense tree cover. During data collection, the handheld was set to output a GGA National Marine Electronics Association (NMEA) string at 1 Hz via Bluetooth, which is stored in the DGM data file using Geonics' EM31MK2 software. For this survey, GPS positions were provided in North Carolina State Plane, North American Datum of 1983 (NAD83), U.S. Survey Feet (sft). The positions of site features relevant to the interpretation of the DGM results were recorded using the GeoXH.

3.0 METHODS

3.1 SUMMARY OF WORK PERFORMED

The NAEVA field team mobilized on the 28^h of October and commenced EM31 DGM production work on the 29th following site orientation. The team demobilized the next day following completion of planned field activities at the 2nd Street Disposal Area.

The daily schedule, based on a 10-hour workday, was as follows, unless otherwise noted in daily work logs:

- Morning safety meeting;
- Equipment setup and 15-minute instrument warm-up;
- Instrument calibration, function checks and quality control (QC) checks;
- DGM using EM31;
- End of day function and QC checks;
- Disassemble and store equipment.

3.2 DIGITAL GEOPHYSICAL MAPPING

3.2.1 EM31 Survey

EM31 data were collected in auto mode at a rate of 5 readings per second along nominal 5 ft spaced transects. Ropes marked with 5 ft intervals were used to help maintain straight lines and coverage during collection. Data collection lines were oriented in a general north-south direction. Repeat data were collected for each dataset for QC purposes.

3.3 DATA PROCESSING

3.3.1 Raw Data Transfer

DGM data were transferred from the Allegro to a field computer for initial data quality assessments and editing. Initial data processing was performed by the field team, which included reviewing data for integrity, repeatability, and completeness. Using DAT31W software, the EM31 data were positioned and exported to an American Standard Code for Information Exchange two (ASCII) file. Coverage and anomalous instrument response was checked in the field using Surfer by Golden Software. Once the in-field review was completed, the data were transferred to NAEVA's Charlottesville, Virginia office via CH2M HILL's File Transfer Protocol (FTP) site for processing, analysis, and QC using Geosoft's Oasis montaj software. Final processed data were uploaded to the CH2M HILL FTP site.

3.3.2 Preprocessing

Converted raw data files were imported into Geosoft's Oasis montaj (Geosoft) to perform the following:

- Review and finalize all QC tests prior to processing of the DGM data for that day;
- Conversion of geodetic coordinates to North Carolina State Plane coordinates, NAD83, U.S. Survey Feet;
- Evaluate data density;
- Apply lag correction based on daily QC checks;
- Generate preliminary contour map(s) from gridded data;
- Generate preliminary original versus repeat profiles;
- Generate formatted ASCII files containing preprocessed data.

3.3.3 Final Processing

After completion of preprocessing, the data were further evaluated and processed to generate final processed data files. Final processing steps included:

- Evaluation and refinement of lag correction;
- Additional digital filtering and enhancement, as necessary;
- Generation of formatted ASCII files containing processed data;
- Generation of final maps for each area displaying contoured gridded data and culture;
- Generation of final original versus repeat profiles.

3.3.4 Data Deliverables

Raw data was submitted within 24 hours of collection, processed QC data was submitted daily and processed data for the site was submitted as completed (within SOW guidelines). The hard copy of this report contains a compact disc with all data deliverables.

Processed data deliverables included:

- ASCII and Geosoft .GDB formats of processed data
 - Data were lag corrected;
 - Data were geo-referenced using the NAD83 North Carolina State Plane, U.S. Survey Feet;
 - ASCII format delimited fields as x, y, v1, v2, etc., (where x and y are project coordinates, and v1, v2, v3, etc., are the instrument readings; the last data field is a time stamp);
- Gridded quadrature and inphase response maps in Geosoft packed map and PDF formats with anomaly selections shown and labeled at a readable scale;

4.0 QUALITY CONTROL

4.1 PERFORMANCE CRITERIA AND MEASURED QUALITY OBJECTIVES (MQOs)

4.1.1 Down-line Data Density (Along Line)

The criterion for down-line data densities along the survey transect was to have sufficient data collected along each transect to achieve the project objective. Maximum permissible spacing between data points was 2 feet unless an obstruction or hazard was present. A spacing greater than this would not meet the MQO in the work plan. This was evaluated in Geosoft by analyzing data point separation along each survey line.

4.1.2 Survey Coverage (Across Line)

The criterion for coverage was that the lane spacing varied by no more than 2x the intended lane spacing of 5 ft, unless an obstruction or hazard was present. This results in a maximum permissible lane spacing of 10 ft for the EM31 survey. The survey footprint was determined in Geosoft.

4.1.3 DGM System Data Repeatability

The criterion for DGM data repeatability was that response amplitudes recorded in repeat survey profiles was similar to the original production data. Approximately 2% of the survey area was repeated at the end of the day. Because of the intrinsic difficulty of following the exact path for collecting repeat data, the results from this test were qualitatively evaluated.

4.2 QUALITY CONTROL TESTS

4.2.1 Background and Spike Test

Static background tests were performed at the start and end of the day. The test was conducted in an area that appeared to be relatively free of sources of metallic interference with the EM31 kept stationary. The purpose of these tests was to assess background response and determine whether unusual levels of instrument noise existed in the data from the start of the day through the end of the day. The measured performance criteria (MPC) was no data spikes greater than ± 5 mS/m from mean value in quadrature and ± 2 ppt from mean value in in-phase.

4.2.2 Vibration Test

A vibration (i.e. cable shake) test was performed at the start of the day. The test was conducted by recording data for at least 30 seconds with the EM31 at the intended survey height. During data collection, the operator shook the instrument cables and connections while observing for noise spikes. The purpose of this test was to identify potential malfunctioning parts in order to avoid unwanted noise in the data as the operator is walking around the site with the instrument. The MPC was no data spikes greater than ± 5 mS/m from mean value in quadrature and ± 2 ppt from mean value in in-phase.

4.2.3 Dynamic Response Test

The dynamic response test was performed at the beginning and end of the day in order to demonstrate the instrument consistently detected a known metallic object. The dynamic test consisted of collecting data over a storm drain and a background line that appeared to be free of responses from metal.

5.0 RESULTS

5.1 QUALITY CONTROL

Static and dynamic response test data met the MQOs and QC criteria for the DGM survey at the 2nd Street Disposal Area (Tables 1 and 2, respectively). The vibration test also met the QC requirements for the survey.

Table 1: EM31 Static Tests Mean Response Values

EM31 Static Tests			
Date	File Name	Collection Height Conductivity mS/m (Mean)	Collection Height Inphase ppt (Mean)
10/29/2015	1029QC1	35.7	-.7
10/29/2015	1029QC2	37.3	-1.01

Table 2: EM31 Dynamic Tests Results

EM31 Dynamic Tests						
Date	File Name	Conductivity mS/m (Over Storm Drain)	Conductivity mS/m (background line) (mean)	Inphase ppt Over Storm Drain)	Inphase ppt (background line) (mean)	Comments
10/29/2015	1029IVS1	-20.2	22.6	-20.47	-0.01	Over Storm Drain & Background Line
10/29/2015	1029IVS2	-7.7	23.14	-20.12	-0.07	Over Storm Drain & Background Line

DGM data points met the data density criteria of 2 foot spacing as well as the coverage criteria of 10 feet spacing or less. Sample QC test images for the static tests, dynamic tests and cable shake & personnel test can be found in **Appendix A**.

5.2 EM31 SURVEY

At the 2nd Street Disposal Area (**Figures 1 and 2 in Appendix B**), there was an elevated response in the conductivity in the north central area of the site. Also a conductive low exists in the east central area which roughly corresponds to a mounded area. Both areas may represent potentially localized buried wastes and are identified as such on **Figures 1 and 2**. In the southeastern corner of the area, there is a large response area identified and labeled on both **Figures 1 and 2** as 55 gallon drums and magazine. In the 2013 survey results, this area contained a metallic utility. The inphase results map shows isolated low amplitude anomaly locations, along with the large response in the area in the southeast that contains the drums and magazine. The anomalous areas for both the inphase and conductivity are circled on the mosaics.

6.0 CONCLUSIONS

NAEVA successfully performed EM31 follow-up DGM and data analysis at the Towers Road Disposal Areas 2nd Street Disposal Area located in Hertford, North Carolina in accordance with the project Work Plan. Project performance criteria and MQOs were met for the survey. The EM31 data also met the QC criteria for the survey. Although no widespread areas of suspected wastes appear to be evident within the EM31 survey area, localized anomaly locations are identified in **Figures 1 and 2**, which may represent isolated wastes or buried debris.

7.0 REFERENCES

Geonics Limited (1999, December). EM31-MK2 Ground Conductivity Meter Data Logger Operating Instructions, Version 2.00.

CH2M HILL. 2013. Geophysical Survey Work Plan, Towers Road Disposal Areas, Hertford, North Carolina. CTO-0020. January

Appendix A

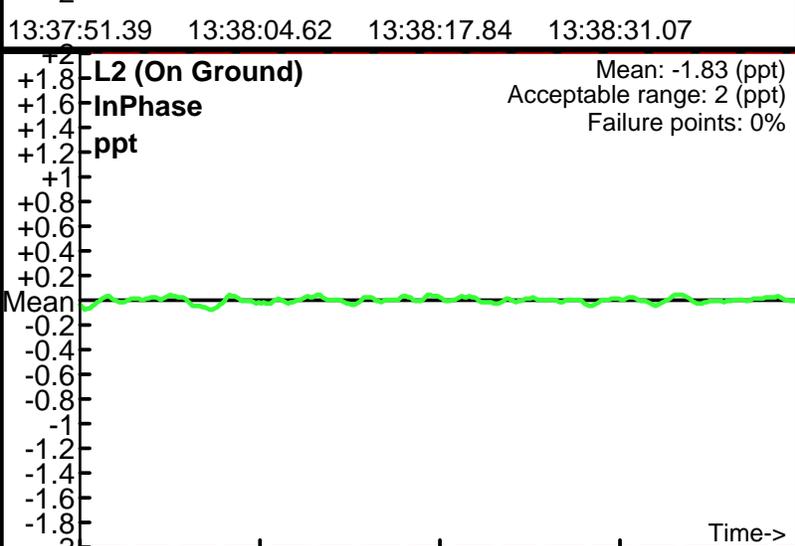
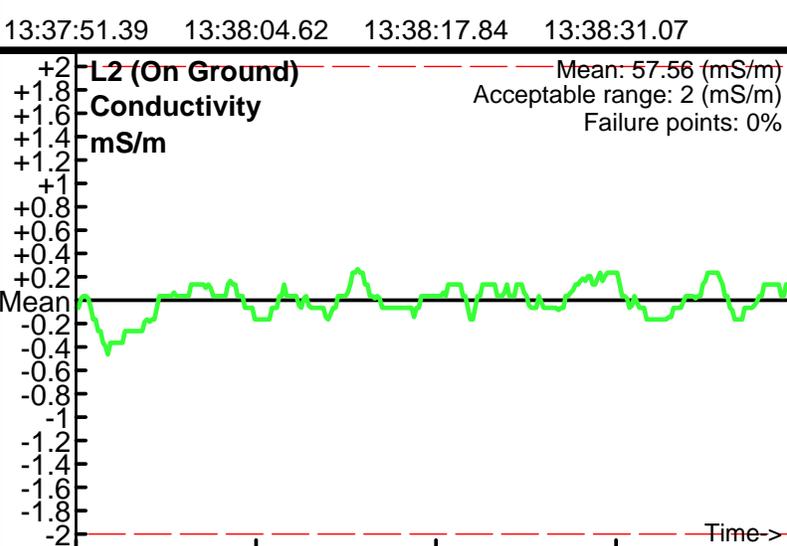
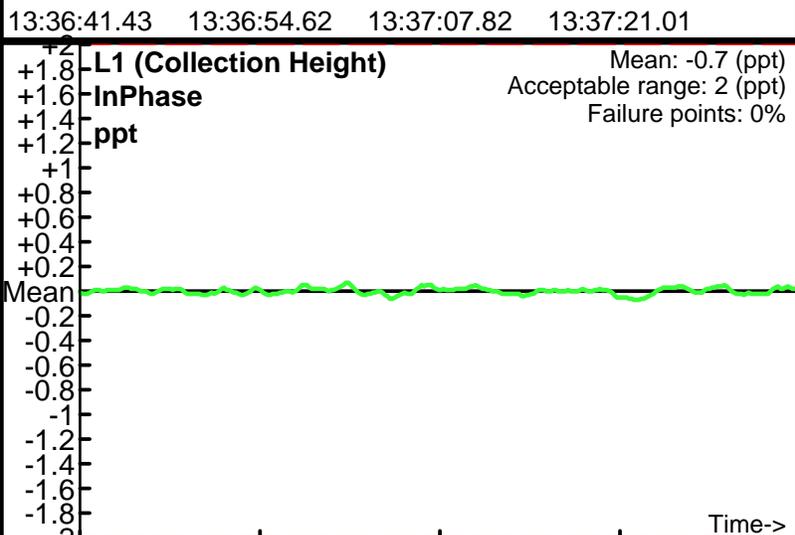
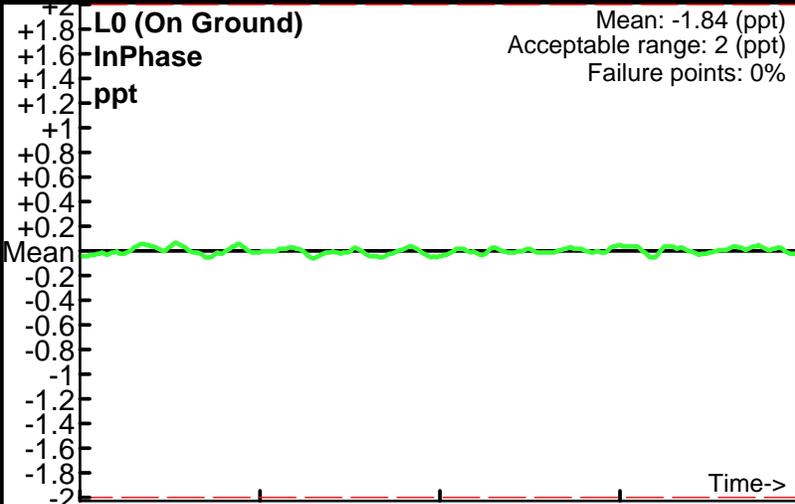
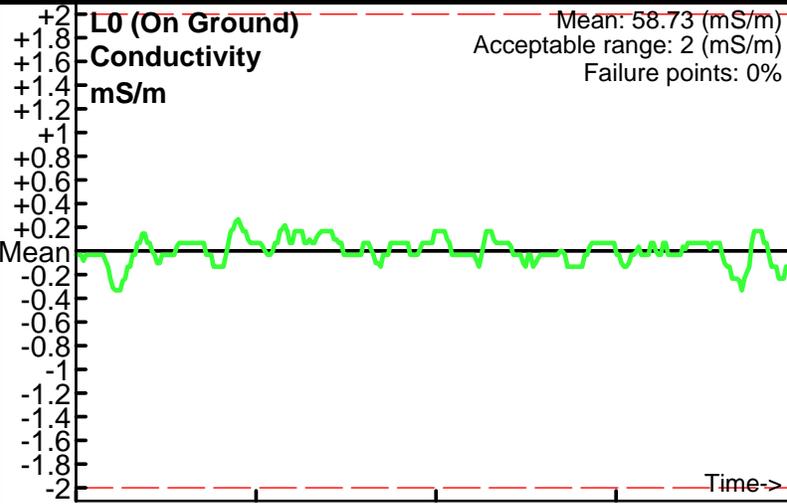
Quality Control Tests

Static Calibration Test

Project: Hertford, NC
Equipment: EM31-MK2
Grid/Location: QC Area

QC1 test
Operator: Geo 1
Date: 10/29/2015

● Outside range
--- Acceptable limits

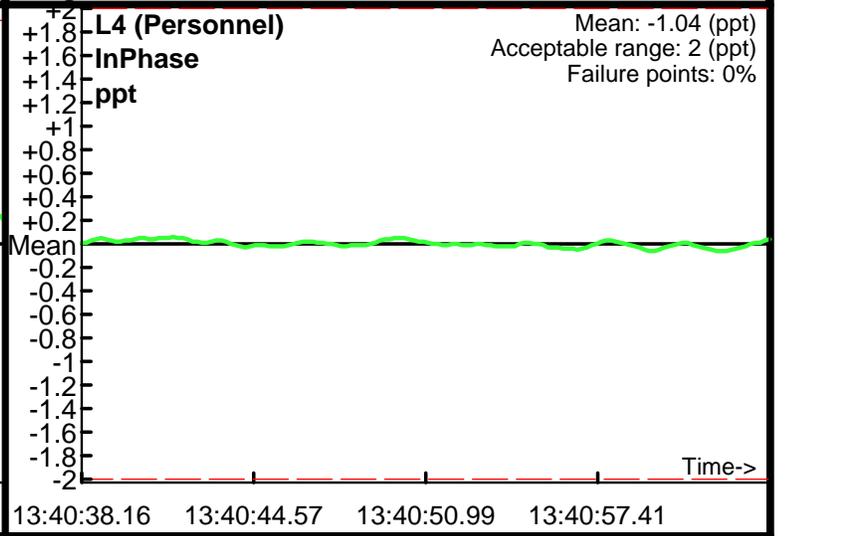
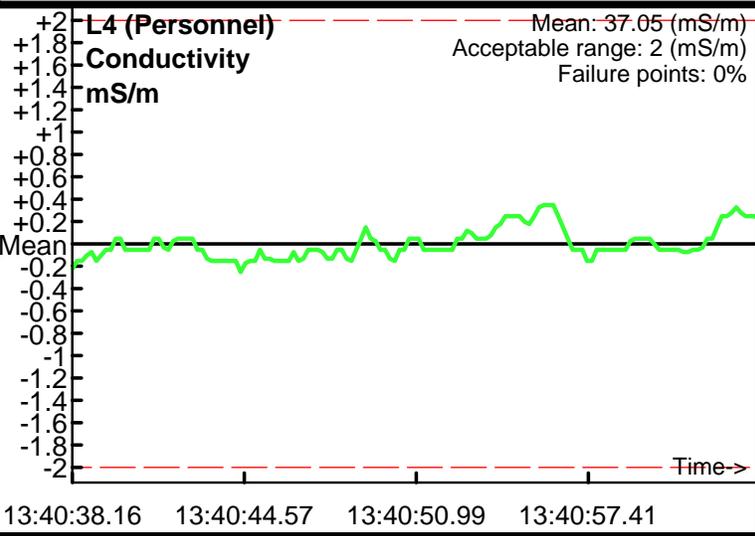
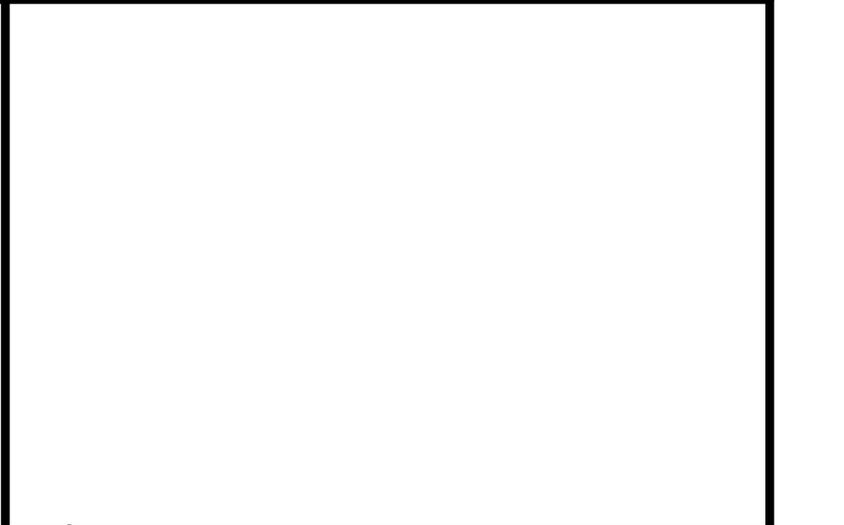
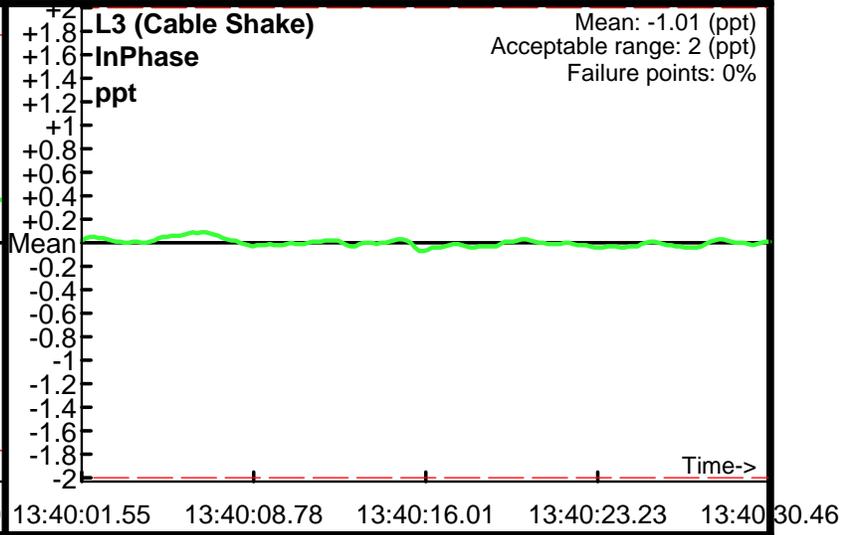
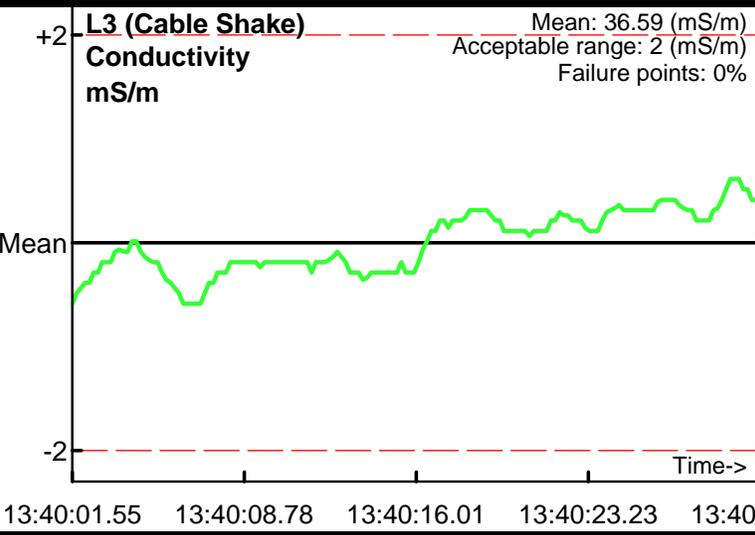


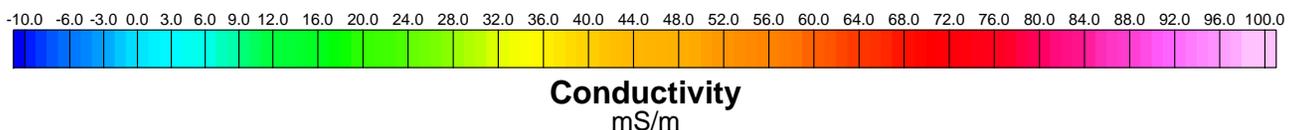
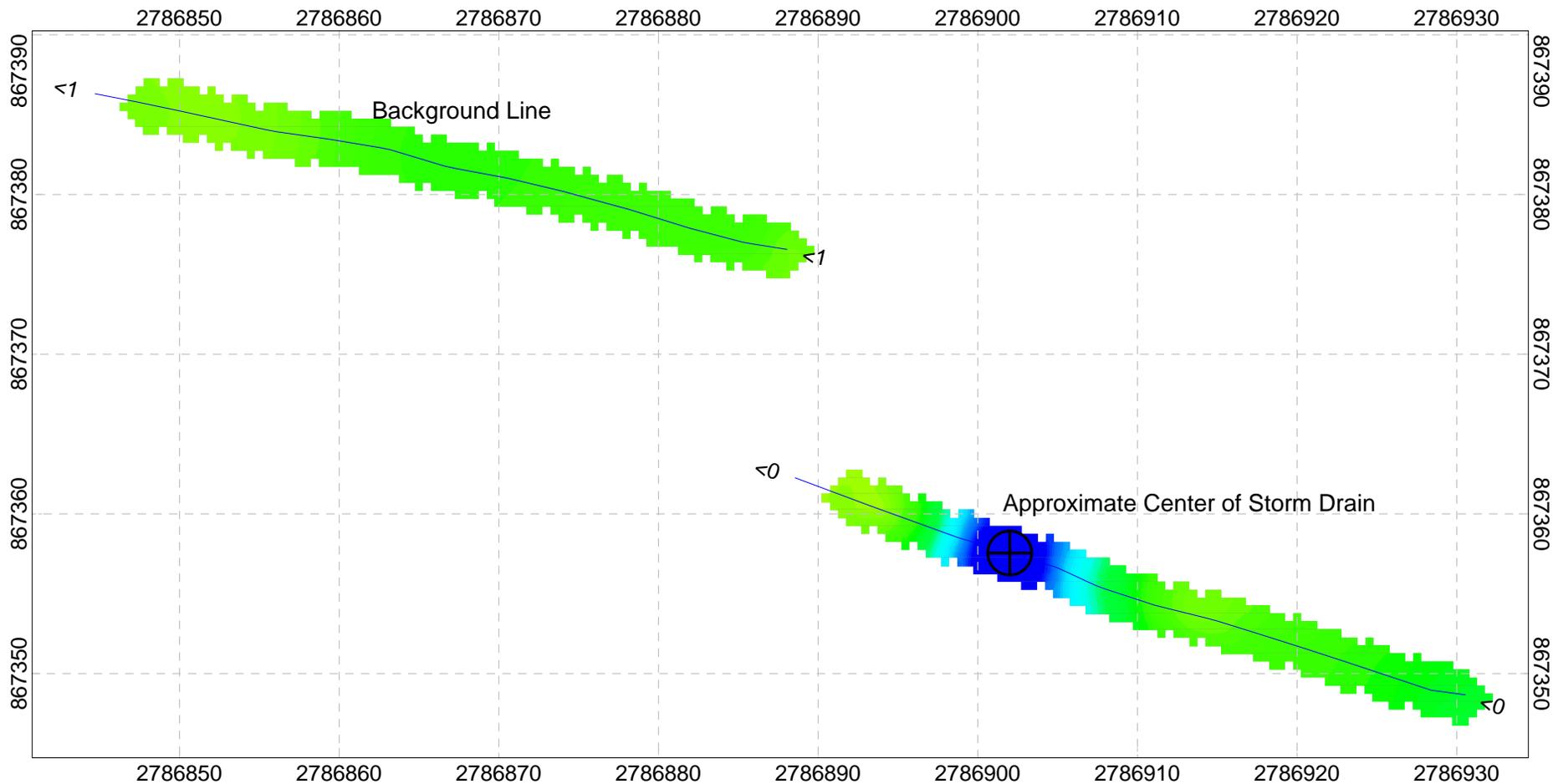
Static Calibration Test

Project: Hertford, NC
 Equipment: EM31-MK2
 Grid/Location: QC Area

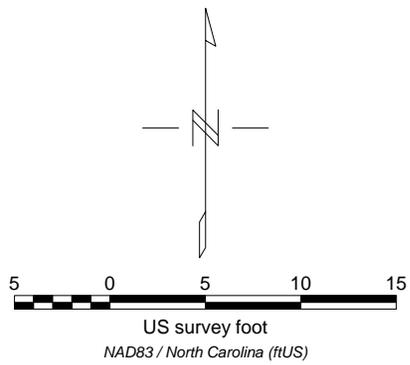
QC1 test
 Operator: Geo 1
 Date: 10/29/2015

● Outside range
 --- Acceptable limits

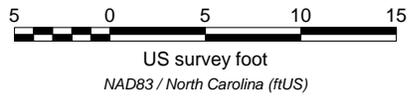
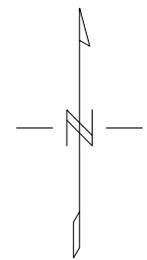
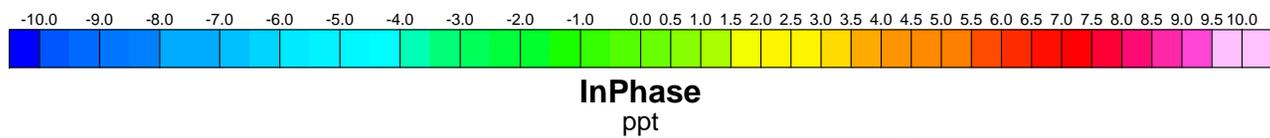
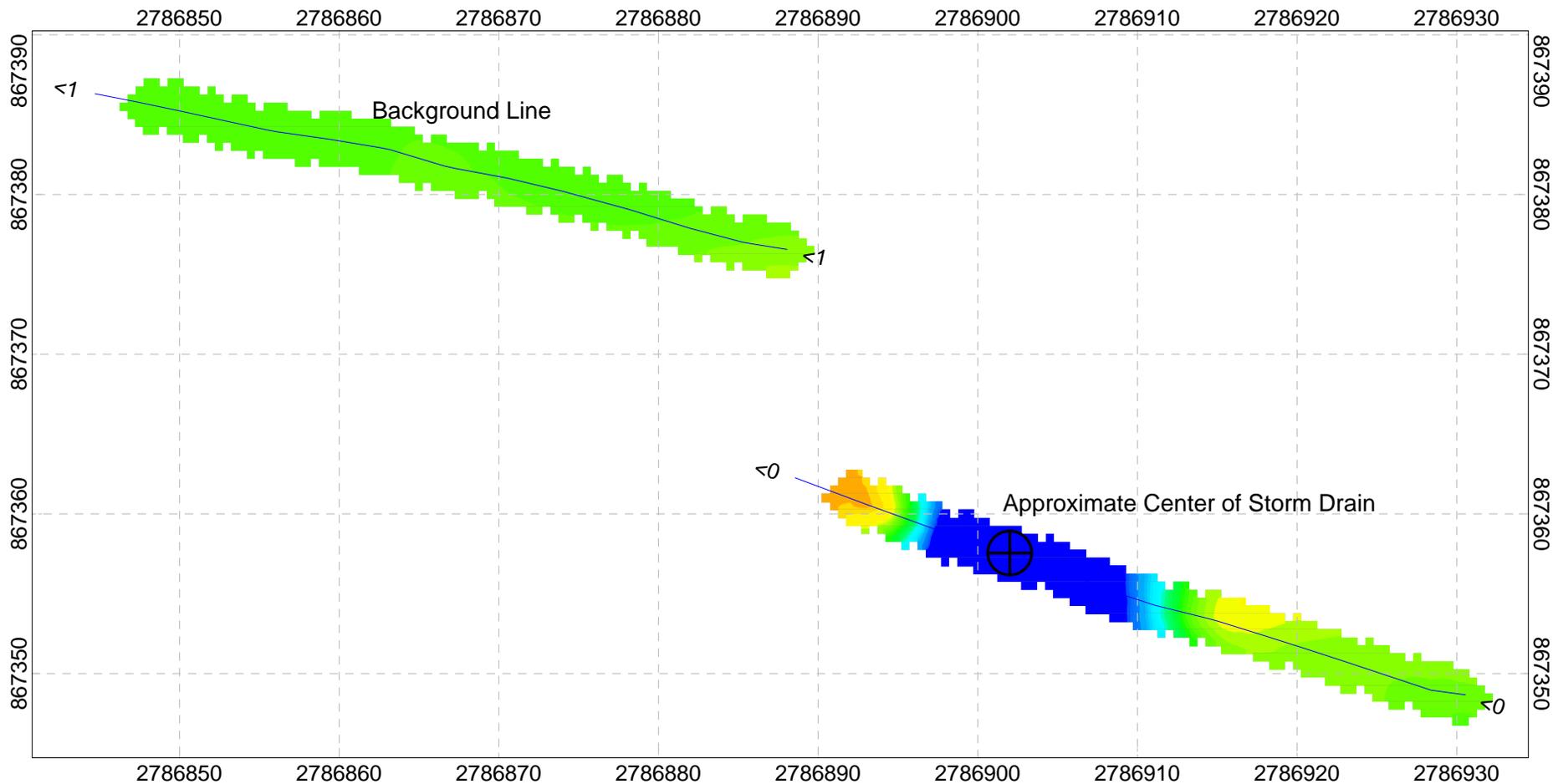




Conductivity
mS/m

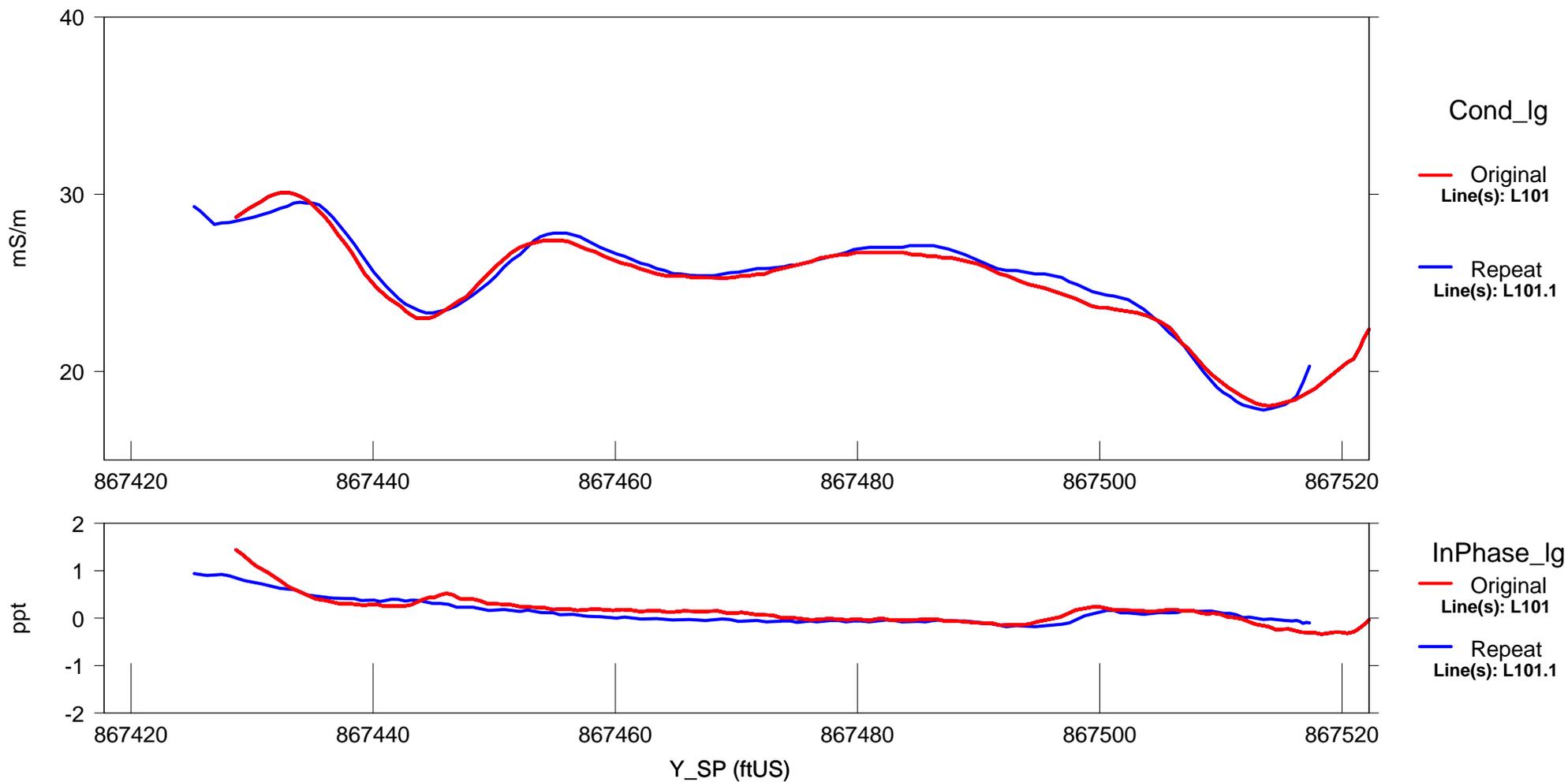


CH2M HILL
EM31 Conductivity Response Test - 1029IVS1 Towers Road Disposal Area - 2nd Street Hertford, North Carolina
Date of Survey: 10/29/2015



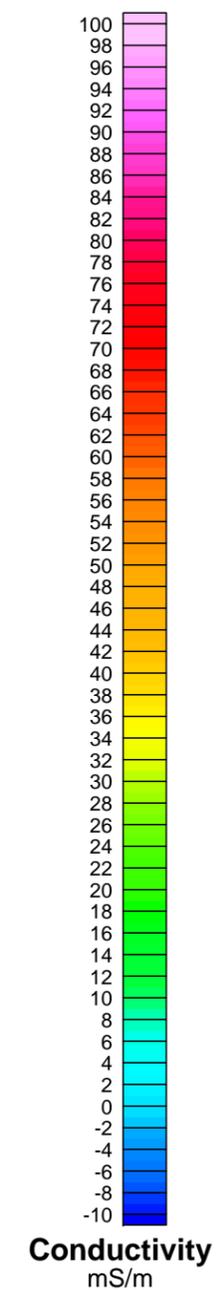
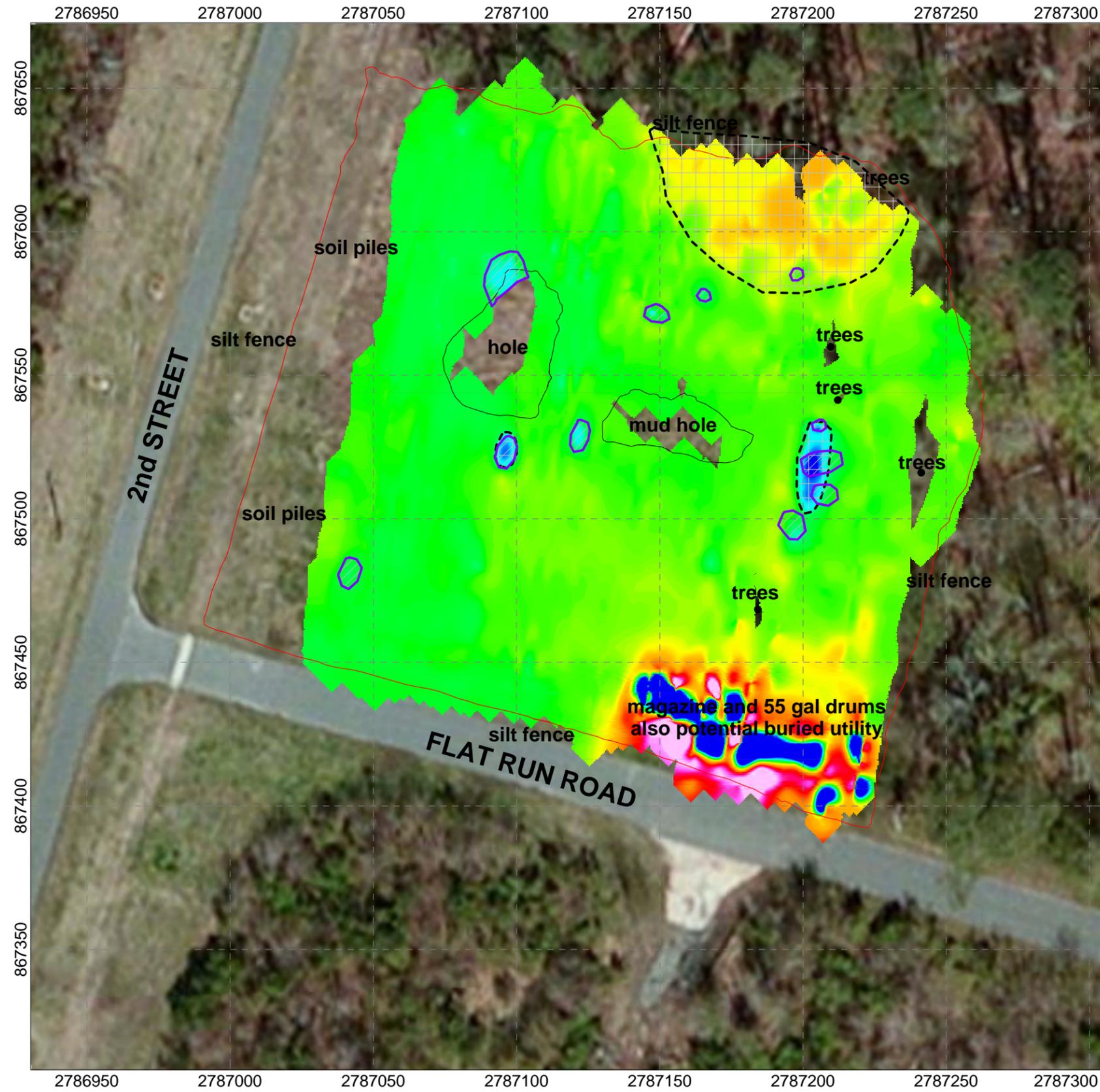
CH2M HILL
EM31 InPhase Response Test - 1029IVS1 Towers Road Disposal Area - 2nd Street Hertford, North Carolina
Date of Survey: 10/29/2015

2nd St Site EM31 Repeat Line L101 Towers Road Disposal Area, Hertford, NC



Appendix B

EM31-MK2 Final Site Mosaics



- Legend
- Silt Fence
 - Culture
 - Anomalous Area - Inphase (from EM31 Inphase data)
 - Anomalous Area - Conductivity (from EM31 Conductivity data)

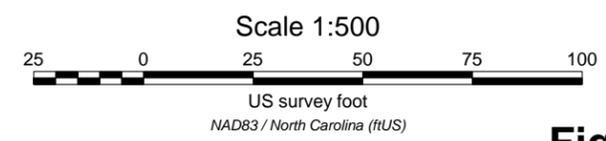
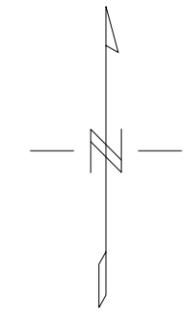
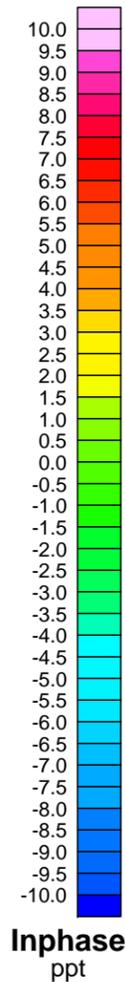
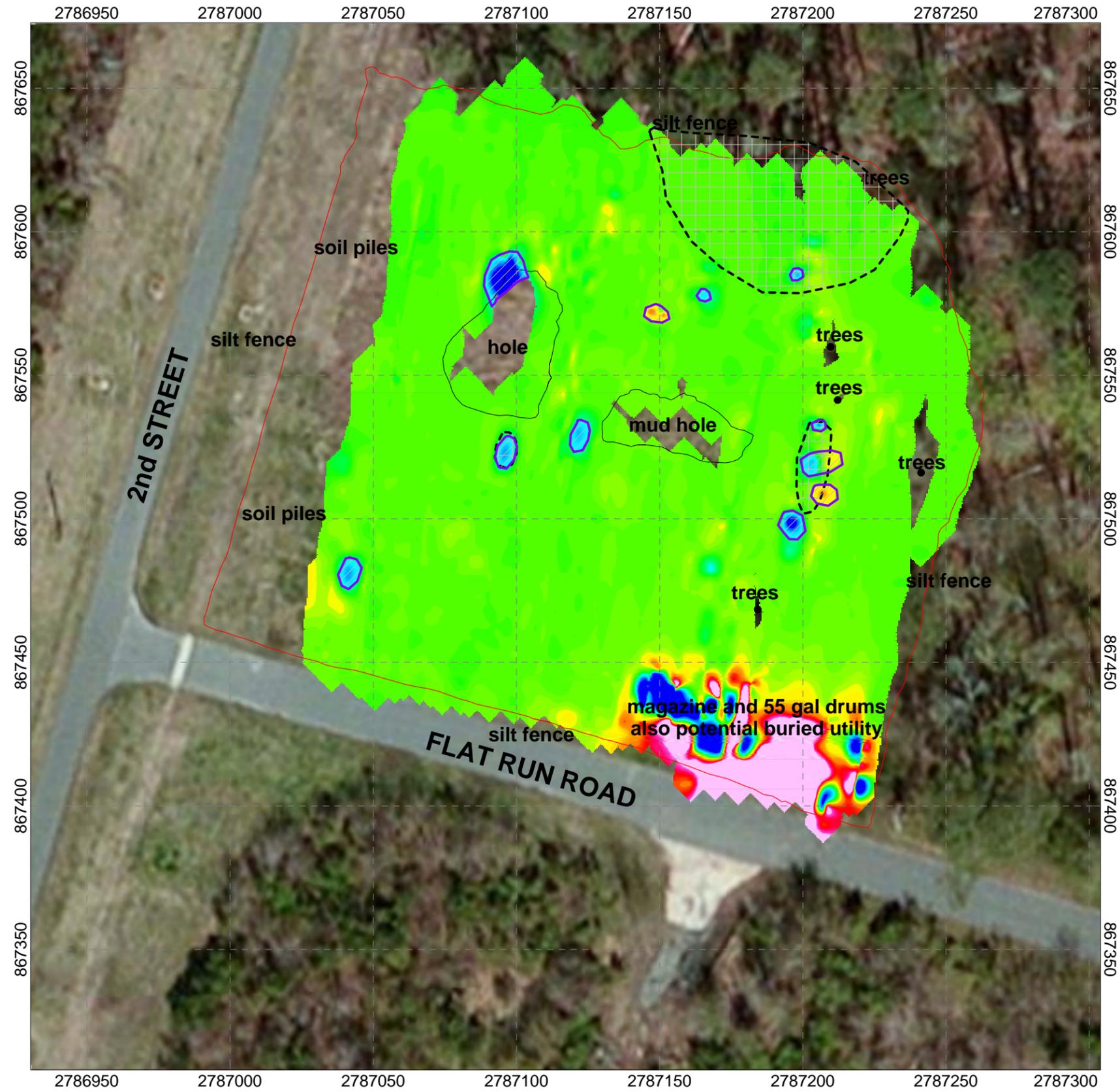


Figure 1

Client: CH2M HILL
EM31 Conductivity Towers Road Disposal Areas 2nd Street Disposal Area Hertford, North Carolina
Date of Survey: 10/29/2015



- Legend
- Silt Fence
 - Culture
 - Anomalous Area - Inphase (from EM31 Inphase data)
 - Anomalous Area - Conductivity (from EM31 Conductivity data)

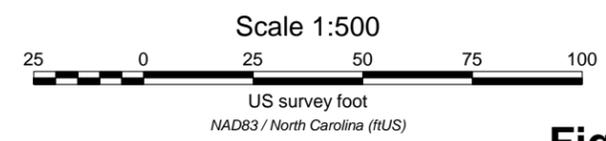
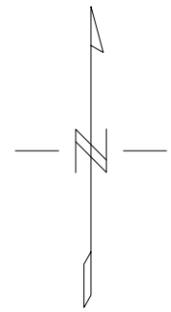


Figure 2

Client: CH2M HILL
EM31 InPhase Towers Road Disposal Areas 2nd Street Disposal Area Hertford, North Carolina
Date of Survey: 10/29/2015

Attachment E2
5th Street Disposal Area DGM Report

GPR
MAGNETICS
ELECTROMAGNETICS
SEISMICS
RESISTIVITY
UTILITY LOCATION
UXO DETECTION
BOREHOLE CAMERA
STAFF SUPPORT

GEOPHYSICAL INVESTIGATION REPORT

Towers Road Disposal Areas (5th Street Disposal Area)

Hertford, North Carolina

Dates of Investigation:
July 31st, 2014

FINAL
27 January 2016

NEW YORK
225 N. Route 303
Suite 102
Congers
New York 10920
(845) 268-1800
(845) 268-1802 Fax

VIRGINIA
P.O. Box 7325
Charlottesville
Virginia 22906
(434) 978-3187
(434) 973-9791 Fax

Prepared for
CH2M HILL
5701 Cleveland Street, Suite 200
Virginia Beach, VA 23462

TABLE OF CONTENTS

LIST OF TABLES	II
ACRONYMS AND ABBREVIATIONS	III
1.0 INTRODUCTION	1
1.1 BACKGROUND AND OBJECTIVES	1
1.2 SCOPE OF WORK	1
1.3 SITE LOCATION AND DESCRIPTION	2
2.0 EQUIPMENT	3
2.1 GEONICS EM31-MK2	3
2.2 TRIMBLE RTK GPS	4
3.0 METHODS	5
3.1 SUMMARY OF WORK PERFORMED	5
3.2 DIGITAL GEOPHYSICAL MAPPING	5
3.2.1 EM31-MK2 Survey	5
3.3 DATA PROCESSING	6
3.3.1 Raw Data Transfer	6
3.3.2 Preprocessing	6
3.3.3 Final Processing	6
3.3.4 Data Deliverables	7
4.0 QUALITY CONTROL	8
4.1 PERFORMANCE CRITERIA AND MEASURED QUALITY OBJECTIVES (MQOS)	8
4.1.1 Down-line Data Density (Along Line)	8
4.1.2 Survey Coverage (Across Line)	8
4.1.3 DGM System Data Repeatability	8
4.2 QUALITY CONTROL TESTS	8
4.2.1 Background and Spike Test	8
4.2.2 Vibration Test	9
4.2.3 Dynamic Response Test	9
5.0 RESULTS	10
5.1 QUALITY CONTROL	10
5.2 EM31 SURVEY	10
6.0 CONCLUSIONS	12
7.0 REFERENCES	13
APPENDIX A: Sample Quality Control Figures	
APPENDIX B: EM31-MK2 Final Site Mosaics	

LIST OF TABLES

Table 1: GPS control points in North Carolina State Plane, U.S. Survey Feet	4
Table 2: GPS QC Check Point Results	4
Table 3: EM31 Static Tests Mean Response Values	10
Table 4: EM31 Dynamic Tests Results	10

ACRONYMS AND ABBREVIATIONS

ASCII	American Standard Code for Information Interchange
cm	Centimeter
DGM	Digital Geophysical Mapping
EM	Electromagnetic
EM31	Geonics EM31-MK2
ft	Feet
FTP	File Transfer Protocol
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response
Hz	Hertz
in	Inch
IRA	Interim Remedial Action
m	Meter
MEC	Munitions and Explosives of Concern
MPC	Measured Performance Criteria
MQOs	Measured Quality Objectives
mS/m	milliSiemens per meter
NAEVA	NAEVA Geophysics, Inc.
NMEA	National Marine Electronics Association
OSHA	Occupational Safety and Health Administration
ppt	Parts Per Thousand
QC	Quality Control
RI	Remedial Investigation
RTK	Real-Time Kinematic
sft	U.S. Survey Feet
UHF	Ultra High Frequency

1.0 INTRODUCTION

1.1 BACKGROUND AND OBJECTIVES

NAEVA Geophysics, Inc. (NAEVA) conducted digital geophysical mapping (DGM) utilizing the EM31-MK2 (EM31) for CH2M HILL at the 5th Street Disposal Area (part of the Towers Road Disposal Areas) located in Hertford, North Carolina from July 30th – July 31st, 2014, in support of an interim remedial action (IRA) to address wastes and impacted soils. The survey area totaled approximately 0.65 acres. An initial DGM survey was performed in 2013 at the site to delineate the lateral extent of suspected buried wastes. Excavations were conducted by CH2M HILL, based on the geophysical results to characterize and remove the wastes.

The objective of the follow-up DGM survey was to assess whether potential wastes, debris, or obstructions remained in place below the excavation floor. The identified footprint following Phase I of the Remedial Investigation (RI), contained buried metallic and non-metallic waste, debris, obstructions (e.g. former building foundations), and underground metallic utilities. This report summarizes the equipment, methods, and results of the geophysical investigation.

1.2 SCOPE OF WORK

NAEVA's personnel organization for the project consisted of a Field Geophysicist and Field Geo-Technician on-site with support from the Project Geophysicist, and Geophysical Data Processors at NAEVA's Charlottesville, Virginia office. NAEVA on-site personnel had 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training, with current (annual) 8-hour refresher training. NAEVA's geophysical functions included the following:

- Mobilization of qualified personnel and geophysical equipment;
- Daily quality control (QC) of geophysical data and positioning equipment;
- EM31 Digital Geophysical Mapping (DGM) of 0.65 acres at 5 foot (ft) line spacing;
- Data processing, analysis, and preparation of data deliverables;
- Database management and reporting.

1.3 SITE LOCATION AND DESCRIPTION

At the time of the follow-up DGM survey, the 5th Street Disposal Area included a concrete pad, exposed underground metallic utilities, and several large pits resulting from intrusive operations. Prior to the follow-up DGM survey, a silt-fence was erected and served as the boundary for the survey area. The survey area was primarily flat and open, with a small portion containing moderate to heavy tree canopy. The geology reportedly consisted of sandy soils and lesser amounts of silt and clay, with groundwater encountered as shallow as 5 ft below ground surface. During intrusive operations, an estimated 2 to 6 ft of waste and soil was removed from portions of the site, resulting in a loose and uneven surface across much of the survey area.

Munitions and explosives of concern (MEC) and material potentially presenting an explosive hazard (MPPEH) were assumed to not be a factor for the geophysical survey at these sites.

2.0 EQUIPMENT

2.1 GEONICS EM31-MK2

The Geonics EM31-MK2 consists of boom-mounted coplanar electromagnetic transmitter and receiver coils that are mounted at a fixed distance of 12 ft apart. A current applied to the transmitter coil produces a time-varying magnetic field, which induces small secondary currents within the earth. These currents generate a secondary magnetic field, which is detected along with the primary field by the receiver coil. The instrument provides an output of both the quadrature phase (conductivity) and in-phase components of the induced electromagnetic field, which are recorded simultaneously. The in-phase component is primarily used in searching for buried metal, measuring in units of relative parts per thousand (ppt) of the Earth's magnetic field. A negative response is most often expected over areas of shallow buried metal debris in the conductivity measurement. For the in-phase measurement both a large negative and/or positive value could reflect buried metal. It should be noted that the relatively large coil separation of the EM31 gives the in-phase component a low susceptibility to discreet metallic items or small concentrations of metal. The quadrature-phase measures electrical conductivity in milliSiemens per meter (mS/m). Electrical conductivity is a function of porosity, conductivity of included soil moisture, degree of saturation, and the type of soil and rock. The absolute values of terrain conductivity are not usually diagnostic, but their spatial variations are important. The ability to identify lateral variations in the shallow subsurface makes quadrature-phase EM31 data very useful in mapping subsurface changes across a site.

EM31 data were collected along parallel transects spaced nominally 5 ft apart at a rate of 10 readings per second. The EM31 was carried at a height of approximately 2.8 ft above ground surface and was operated in the vertical dipole mode, where the maximum depth of investigation is approximately 18 ft. In this mode, the greatest contribution to the instrument response comes from materials in the 3 to 9 ft depth range. Data were recorded using an Allegro CX field computer running the EM31MK2 acquisition software.

2.2 TRIMBLE RTK GPS

The geophysical data were positioned using a Trimble R8 Global Positioning System (GPS) base station and a separate R8 rover receiver, operating in Real-Time Kinematic (RTK) mode. The corners of the local grids established by the DGM field team were recorded using GPS, along with relevant cultural features and the survey boundary. Where possible, the Trimble R8 was used for the real-time acquisition of positional data during DGM. In areas of heavy tree cover, the geophysical data were collected in local (X,Y) coordinates using the established grid corners, where the positions were warped during data processing to geodetic coordinates using the as-staked grid corner coordinates.

The Trimble R8 GPS is a 24-channel dual frequency RTK receiver that uses GLONASS, L1, L2C and L5 satellite frequencies. The GPS base station was setup on a location with unknown coordinates and positional readings were recorded for a period of 5 hours. These recorded locations were then uploaded to Trimble Centerpoint RTX post-processing service and a corrected coordinate was provided having accuracy to within a few centimeters (cm) of the true coordinate (Table 1). Real-time corrections are broadcast to the roving R8 receiver via a radio link using a TDL-450 Ultra High Frequency (UHF) radio modem. This system provides positional corrections at a rate of one Hertz (Hz), with an accuracy of approximately 3 centimeter (cm) horizontal and 5 cm vertical when a minimum of five satellites are available. The accuracy of the GPS rover depends largely on the accuracy of the base station and the number of satellites visible, which may be obstructed by local features such as buildings or heavy tree cover.

Table 1: GPS control points in North Carolina State Plane, U.S. Survey Feet

Control Point ID	Easting (sft)	Northing (sft)
Base	2788298.760	866960.276
Gpsqc1	2788323.680	866904.023

Using the points in Table 1, a reoccupation test was performed to demonstrate the RTK GPS was working properly. The result of this reoccupation test is shown in Table 2.

Table 2: GPS QC Check Point Results

Control Point ID	Known Location		Surveyed Location		Offset (ft)
	Easting (sft)	Northing (sft)	Easting (sft)	Northing (sft)	
GPSQC1	2788328.40	866912.34	2788328.36	866912.34	0.04

3.0 METHODS

3.1 SUMMARY OF WORK PERFORMED

The NAEVA field team mobilized on the 29th of July and commenced EM31 DGM production work on the 31th following site orientation. The team demobilized the next day following completion of planned field activities for the 5th Street Disposal Area.

The onsite work schedule, based on a 10-hour workday, was as follows, unless otherwise noted in the daily logs:

- Morning safety meeting;
- Equipment setup and 15-minute instrument warm-up;
- Instrument calibration, function checks and quality control (QC) checks;
- DGM using EM31;
- End of day function checks and QC checks;
- Verify data coverage;
- Disassemble equipment and demobilize from site.

3.2 DIGITAL GEOPHYSICAL MAPPING

3.2.1 EM31-MK2 Survey

EM31 data were collected in auto mode at a rate of 10 readings per second along nominal 5 ft spaced transects. Grids containing little to no tree cover were collected with the Trimble R8 rover receiver mounted to a backpack worn by the EM31 operator and positioned in the middle of the EM31. Ropes marked with 5 ft intervals were used to help maintain straight lines and coverage during collection.

In areas where reliable use of GPS was not possible, positioning was maintained using fiducial methods, with markers (i.e. digital tags) inserted in the data stream at known intervals along each survey line within the grids. Vinyl-stem flags were used to mark these intervals. Lines were numbered according to the local grid and the operator walked at an even pace, pressing the fiducial button as the center of the EM31 passed over each flag.

During data collection, obstructions and relevant site features were documented in the field notes. Lines were oriented in an east-west direction for collection. Repeat data were collected for each dataset for QC purposes.

3.3 DATA PROCESSING

3.3.1 Raw Data Transfer

DGM data were transferred from data loggers to a field computer for initial data quality assessments and editing. Initial data processing was performed by the field team, which included reviewing data for integrity, repeatability, and completeness. Using DAT31W software, the EM31 data were positioned and exported to an American Standard Code for Information Exchange two (ASCII) file. Once the in-field review was completed, the data were transferred to NAEVA's Charlottesville, Virginia office via CH2M HILL's File Transfer Protocol (FTP) site for processing, analysis, and QC using Geosoft's Oasis montaj (Geosoft) software. Final processed data were uploaded to the CH2M HILL FTP site.

3.3.2 Preprocessing

Converted raw data files were imported into Geosoft to perform the following:

- Review and finalize all QC tests prior to processing the DGM data;
- Warping local (X,Y) coordinates to North Carolina State Plane coordinates, North American Datum 1983 (NAD83), U.S. Survey Feet;
- Evaluate data density;
- Apply lag correction based on daily QC tests;
- Generate preliminary contour map(s) from gridded data;
- Generate preliminary original versus repeat profiles;
- Generate formatted ASCII files containing preprocessed data.

3.3.3 Final Processing

After completion of preprocessing, the data were further evaluated and processed to generate final processed data files. Final processing steps included:

- Evaluation and refinement of lag correction;
- Additional digital filtering and enhancement, as necessary;
- Generation of formatted ASCII files containing processed data;
- Generation of final maps for each area displaying contoured gridded data and relevant site features;
- Generation of final original versus repeat profiles.

3.3.4 Data Deliverables

Daily data deliverables were organized by and submitted as completed. The final report and data package provided to CH2M HILL includes all data and information gathered at the site: raw DGM instrument and GPS files, pre-processed data, processed data, maps in PDF and native file format, QC tests plotted in PDF and native file formats and field notes.

Processed data deliverables included:

- ASCII and Geosoft .GDB formats of processed data
 - Data were lag corrected
 - Data were geo-referenced using the NAD83 North Carolina State Plane, U.S Survey Feet
 - ASCII format delimited fields as x, y, v1, v2, etc., (where x and y are project coordinates, and v1, v2, v3, etc., are the instrument readings; the last data field is a time stamp)
- Gridded quadrature and in-phase response maps in Geosoft packed map and PDF formats with anomaly selections shown and labeled at a readable scale

4.0 QUALITY CONTROL

4.1 PERFORMANCE CRITERIA AND MEASURED QUALITY OBJECTIVES (MQOs)

4.1.1 Down-line Data Density (Along Line)

The criterion for down-line data densities along the survey transect was to have sufficient data collected along each transect to achieve the project objective. Maximum permissible spacing between data points was 2 feet unless an obstruction or hazard was present. A spacing greater than this would not meet the MQO that is specified in the work plan. This was evaluated in Geosoft by analyzing data point separation along each survey line.

4.1.2 Survey Coverage (Across Line)

The criterion for coverage was that the lane spacing varied by no more than 2x the intended lane spacing of 5 feet, unless an obstruction or hazard was present. This results in a maximum permissible lane spacing of 10 ft for the EM31 survey. The survey footprint was determined in Geosoft.

4.1.3 DGM System Data Repeatability

The criterion for DGM data repeatability was that response amplitudes recorded in repeat survey profiles was similar to the original production data. Approximately 2% of the survey area was repeated at the end of the day. Because of the intrinsic difficulty of following the exact path for collecting repeat data, the results from this test were qualitatively evaluated.

4.2 QUALITY CONTROL TESTS

4.2.1 Background and Spike Test

Static background tests were performed at the start and end of each survey day. The test was conducted in an area that was relatively free of sources of interference, and the EM31 remained stationary. The purpose of these tests was to assess background response and determine whether unusual levels of instrument noise existed in the data from the start of the day through the end of the day. The MPC was no excessive data spikes greater than ± 5 mS/m from mean value in quadrature and ± 2 ppt from mean value in in-phase.

4.2.2 Vibration Test

A vibration (i.e. cable shake) test was performed at the start of the day. The test was conducted by recording data for at least 1 minute with the EM31. During data collection, the operator shook the instrument cables and connections while observing for noise spikes. The purpose of this test was to identify potential malfunctioning parts in order to avoid unwanted noise in the data as the operator is walking around the site with the instrument. The MPC was no data spikes greater than ± 5 mS/m from mean value in quadrature and ± 2 ppt from mean value in in-phase.

4.2.3 Dynamic Response Test

The dynamic response test was performed at the beginning and end of the survey day in order to demonstrate the instrument consistently detected a known metallic object. The dynamic test consisted of collecting data past an elevated utility box since no culverts or other large subsurface objects were identified onsite. The end-of-day dynamic test was collected in the opposite direction (SE to NW) from the start-of-day dynamic test (NW to SE). As a result of this change in direction, the position of the operator resulted in the EM31 being farther from the utility box in one of the passes (the EM31 is carried to the side of the operator). Therefore, there is a decrease in response between the two tests. However, the results of the test meet the MPC because the MPC intended to demonstrate the EM31 consistently respond to the metallic feature used in the test.

5.0 RESULTS

5.1 QUALITY CONTROL

Background static tests were within the acceptable range, and standard response data showed consistent detection throughout the investigation (Table 3). The cable shake exhibited no interference as a result of cable motion. The dynamic response test results also demonstrated repeatability in the instrument response (Table 4).

Table 3: EM31 Static Tests Mean Response Values

EM31 Static Tests			
Date	File Name	Collection Height Conductivity mS/m (Mean)	Collection Height In-phase ppt (Mean)
7/31/2014	0731QC1	16.68	2.47
7/31/2014	0731QC2	18.45	1.71

Table 4: EM31 Dynamic Tests Results

EM31 Dynamic Response Tests				
Date	File Name	Conductivity mS/m (1st Pass)	In-phase ppt (1st Pass)	Comments
7/31/2014	0731DYN1	53.00	7.59	Test Item= utility box (collected NW to SE)
7/31/2014	0731DYN2	33.80	0.06	Test Item = utility box (collected SE to NW)
Dynamic tests 0731DYN1 and 0731DYN2 were collected next to a utility box. During 0731DYN1 (collected NW to SE) the instrument passed directly by the box. During 0731DYN2 (Collected SE to NW) the operator was located between the instrument and the utility box. This is believed to account for the lower response in 0731DYN2.				

DGM data points met data density criteria of 2 foot spacing as well as the coverage criteria of 10 feet spacing or less. Sample QC test images for the static test, vibration, personal and dynamic test as well as a report documenting MPCs can be found in **Appendix A**.

5.2 EM31 SURVEY

At the 5th Street Disposal Area (**Figures 1 and 2 in Appendix B**), the EM31 was locally influenced by existing site features. Two linear anomalies appear in both the conductivity and the in-phase data east of the concrete slab, with one feature running E-W, and one feature running N-S. These linear anomalies are characteristic of underground utilities and are labeled on **Figures 1 and 2** as “Suspected Utility”.

Two areas are identified with a hatched pattern on the maps as “Anomalous Area”. The anomalous area with a larger footprint is possibly influenced by the two suspected utilities in the vicinity of the anomalous area, as well as the concrete slab and additional utilities that may extend parallel to Flat Run Road. The anomalous area with the smaller footprint may represent a portion of concrete slab not exposed. It is also noteworthy that this area is adjacent to a previously investigated “Potential Waste/Debris Area” from the initial DGM survey conducted in 2013.

6.0 CONCLUSIONS

NAEVA successfully performed EM31 follow-up DGM and data analysis at the Towers Road Disposal Areas 5th Street Disposal Area located in Hertford, North Carolina in accordance with the project Work Plan. Project performance criteria and MQOs were successfully met for the survey. The EM31 data also met the QC criteria for the survey.

Two anomalous features were identified within the DGM survey area – one smaller feature to the north-west of the concrete slab, and one larger feature bordering the silt fence and Flat Run Road. The nature of these anomalous areas cannot be readily determined from the DGM data but may be associated with the existing concrete slab, underground utilities or remaining buried wastes.

7.0 REFERENCES

Geonics Limited (1999, December). EM31-MK2 Ground Conductivity Meter Data Logger Operating Instructions, Version 2.00.

CH2M HILL. 2014. Geophysical Survey Work Plan, Interim Remedial Action Plan and Preconstruction Report, Towers Road Disposal Areas – Waste and Soil, Harvey Point Defense Testing Activity, Hertford, North Carolina. CTO-0017. April.

Appendix A

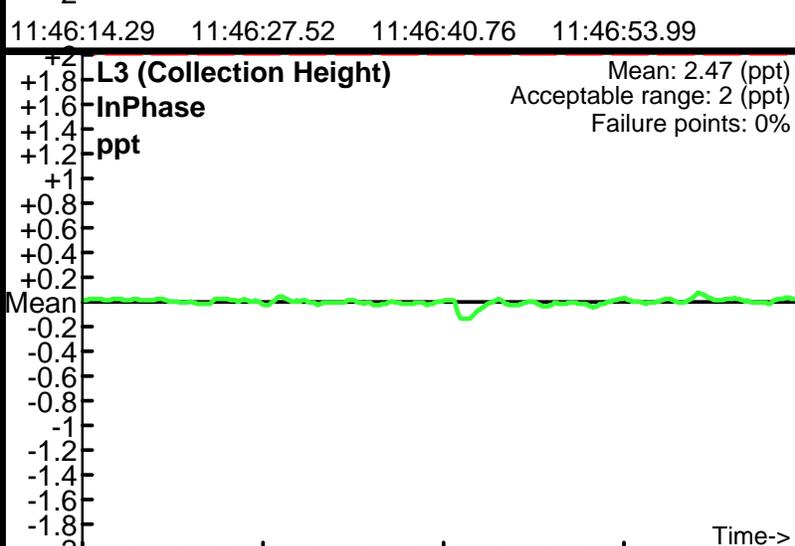
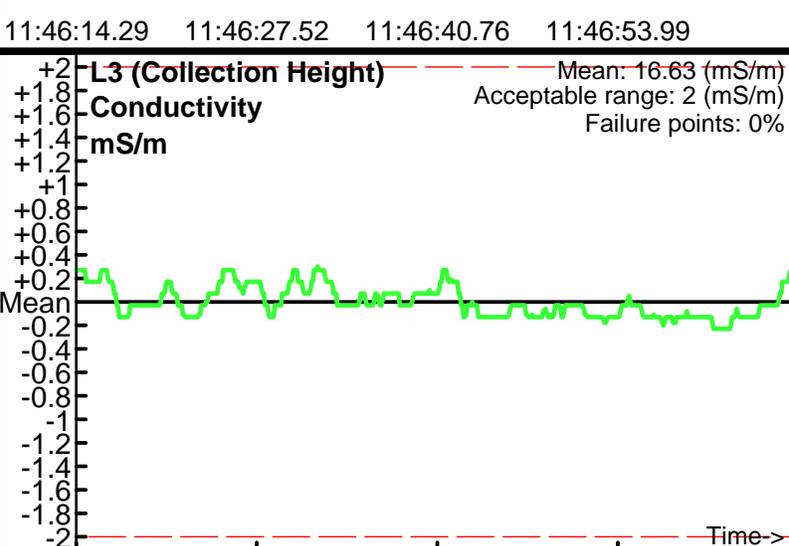
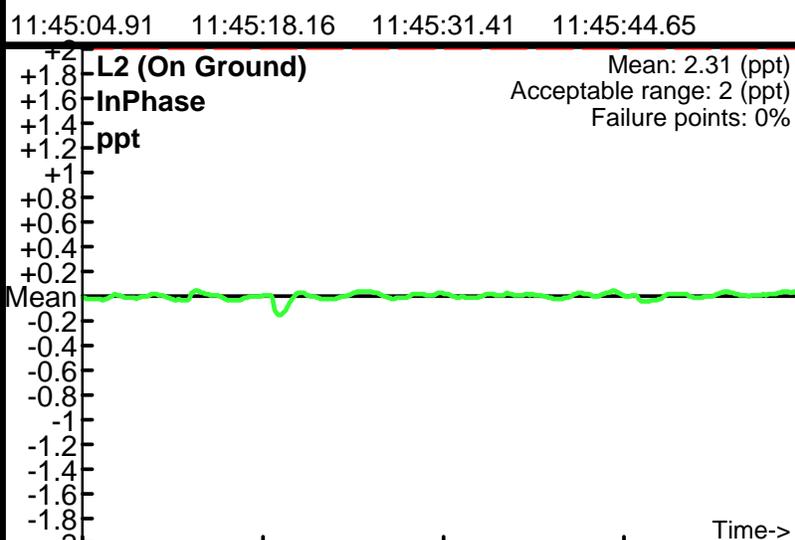
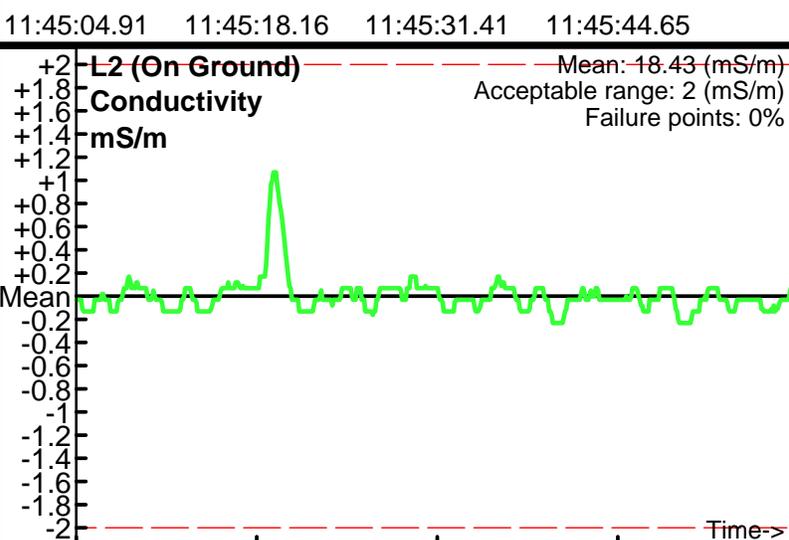
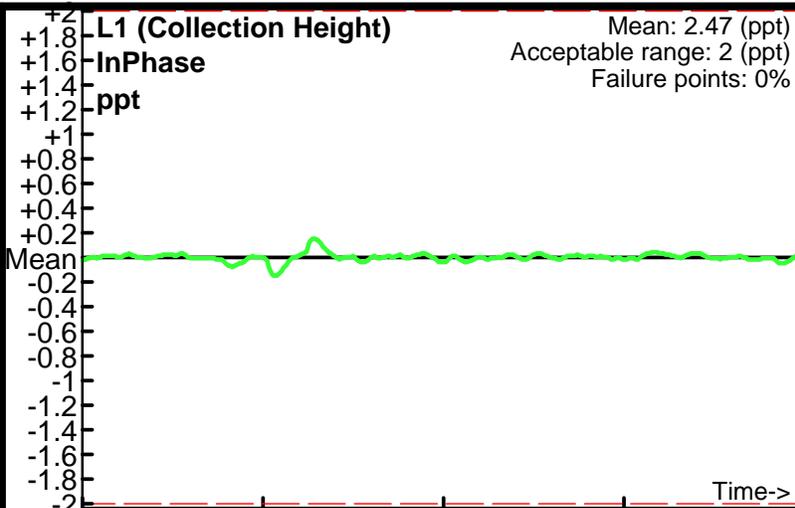
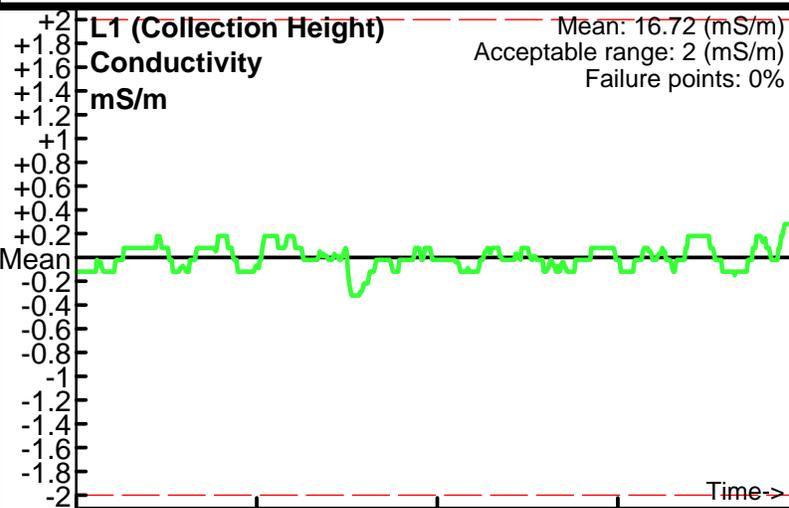
Quality Control Tests and Processing Report

Static Calibration Test

Project: Hertford, NC
Equipment: Magnetometers
Grid/Location: QC Area

QC1 test
Operator: Geo 1
Date: 07/31/2014

● Outside range
— Acceptable limits

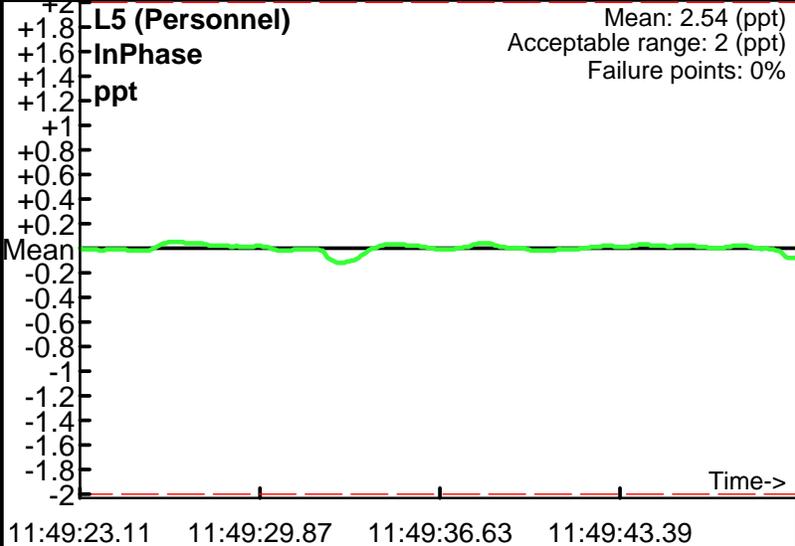
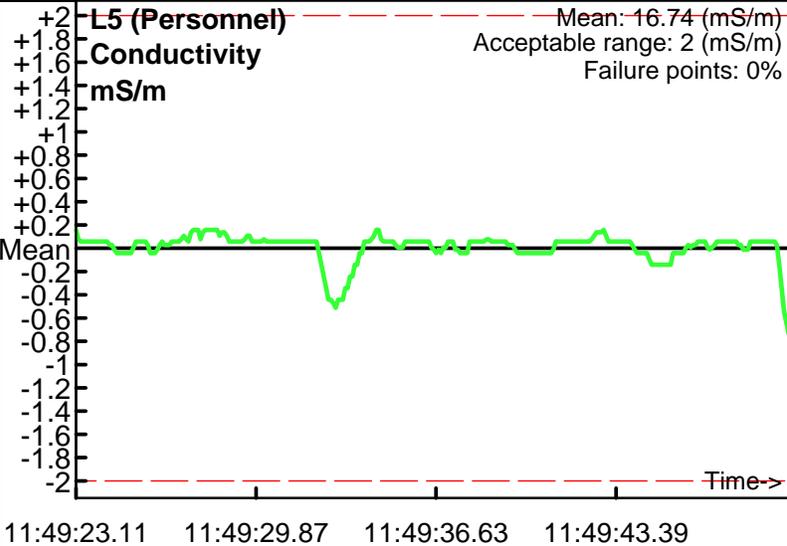
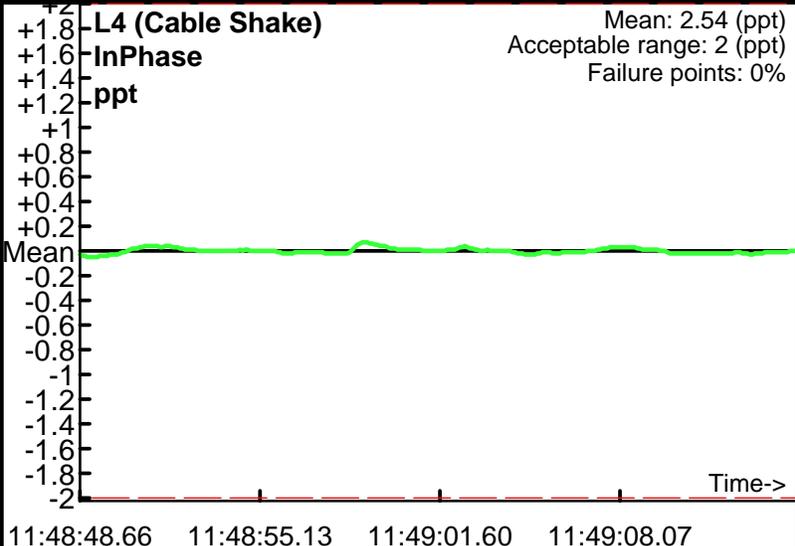
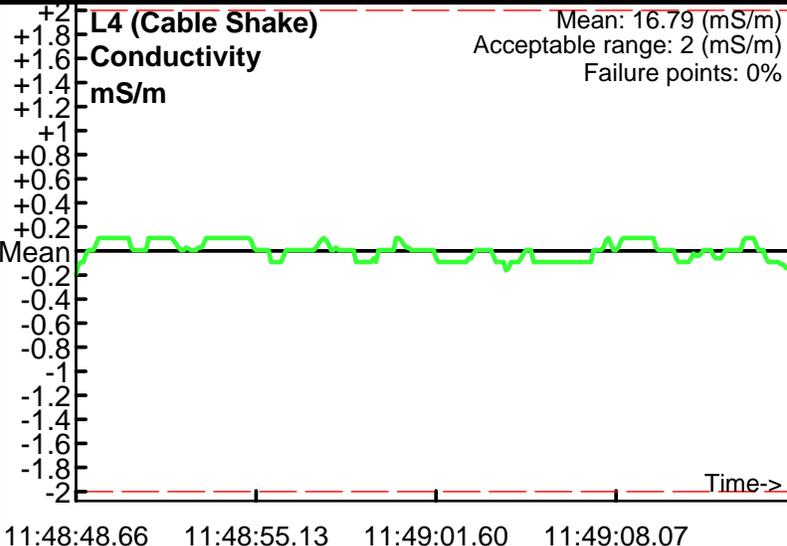


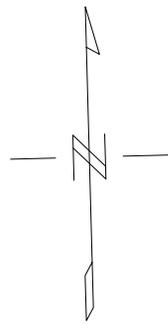
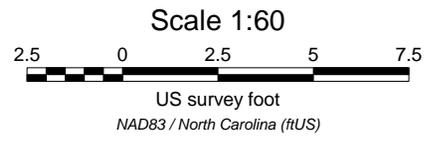
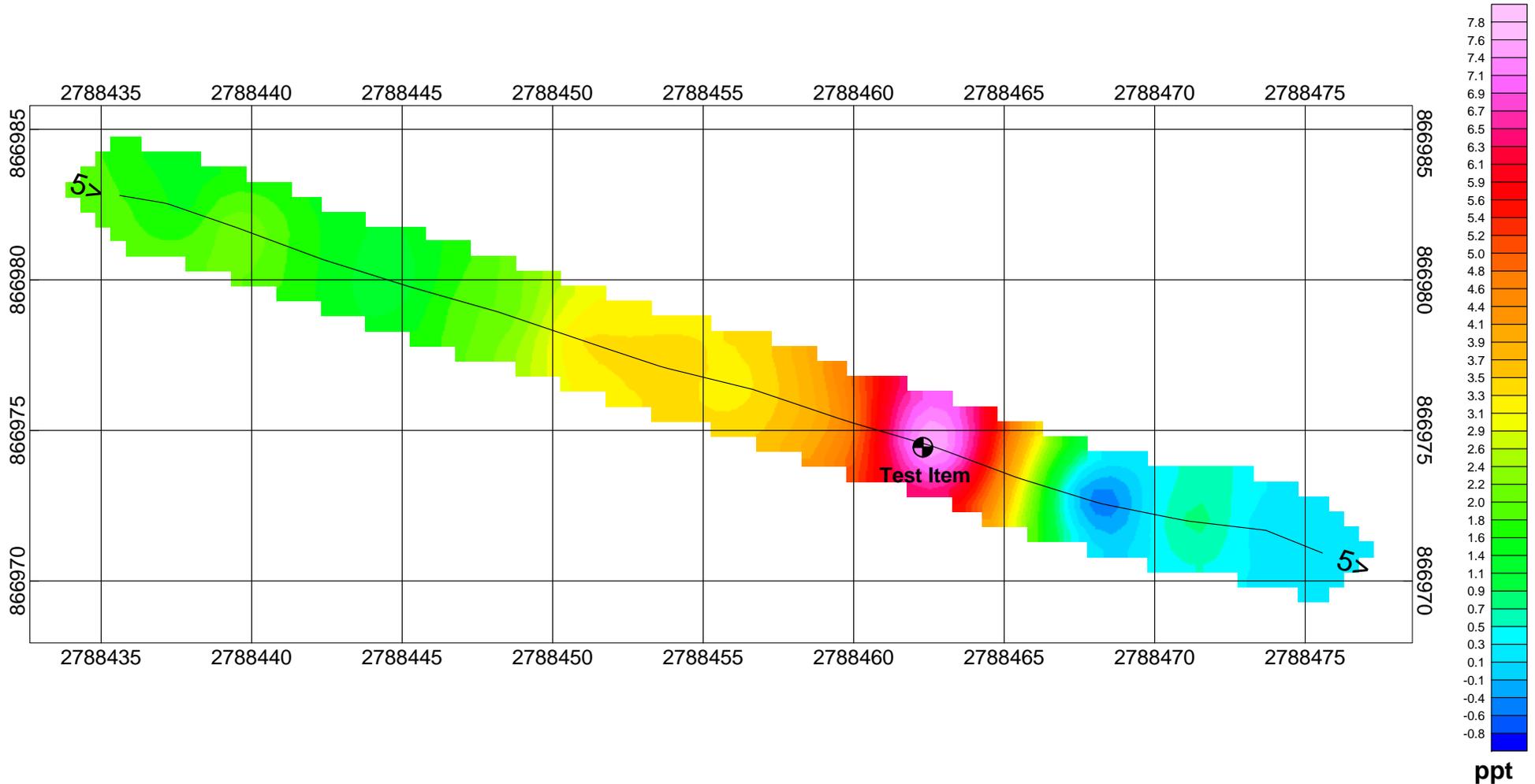
Cable Shake & Personnel Tests

Project: Hertford, NC
Equipment: Magnetometers
Grid/Location: QC Area

QC1 test
Operator: Geo 1
Date: 07/31/2014

● Outside range
- - - Acceptable limits



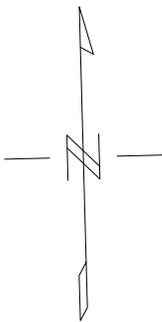
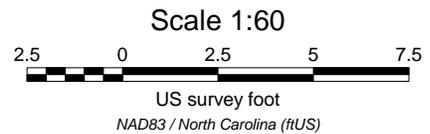
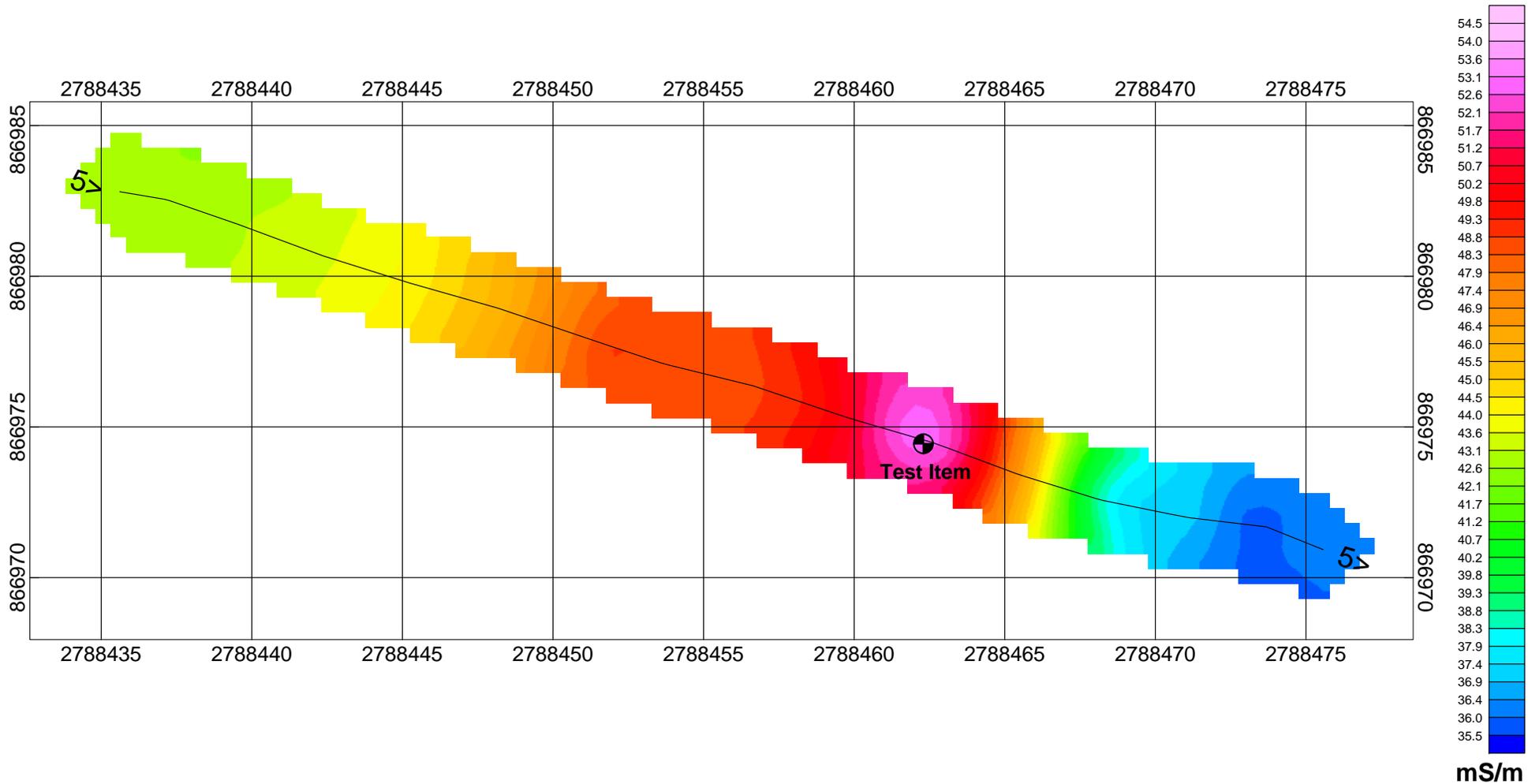


NAEVA GEOPHYSICS INC.
 THE LEADER IN SUBSURFACE DETECTION
 Subsurface Geophysical Surveys

Client: CH2M Hill

EM31 InPhase Dynamic Test - 0731DYN1
 Towers Road Disposal Area
 Hertford, North Carolina

Date of Survey: 07/31/2014



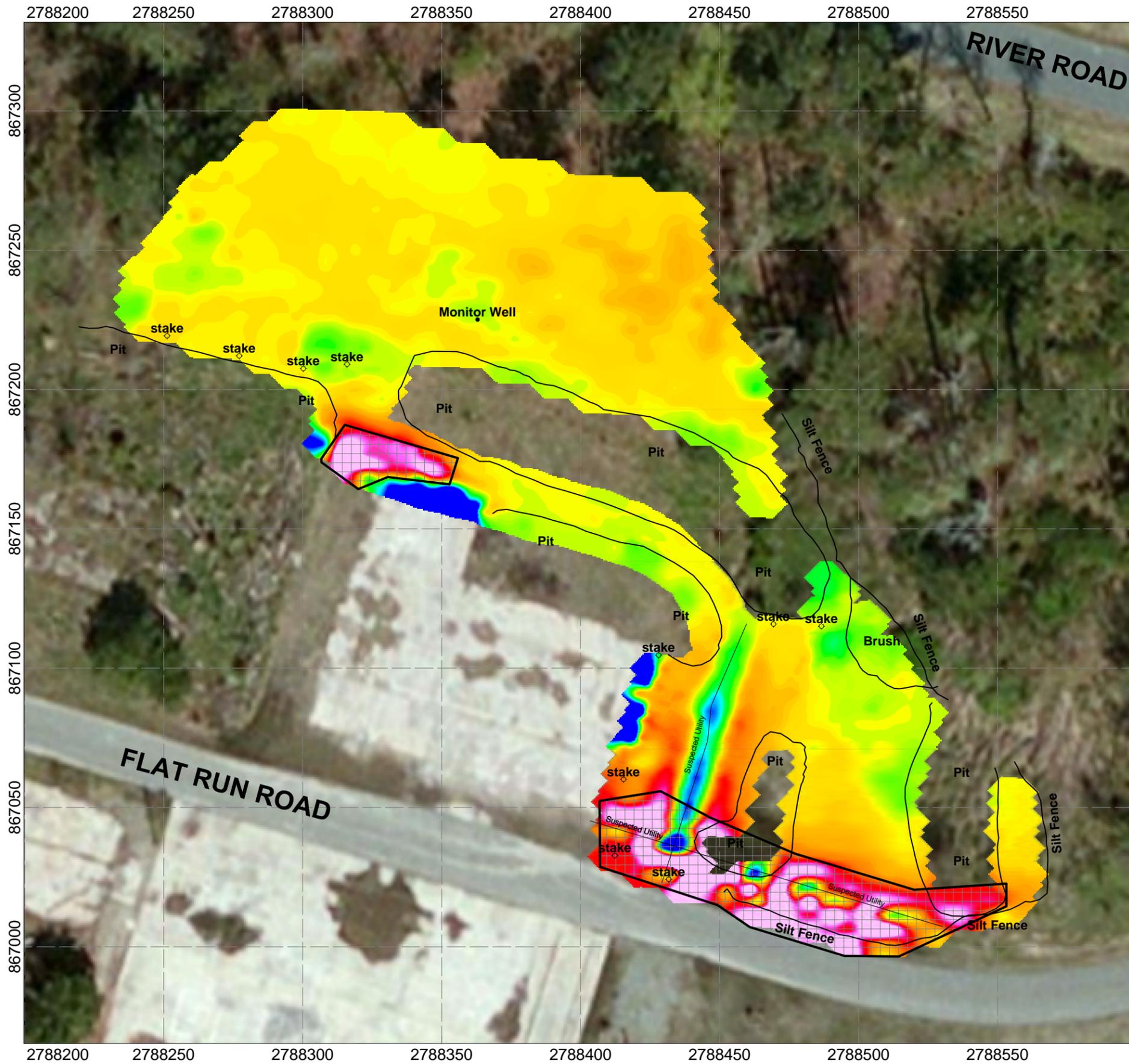
Final Data Delivery Report

Processing Information

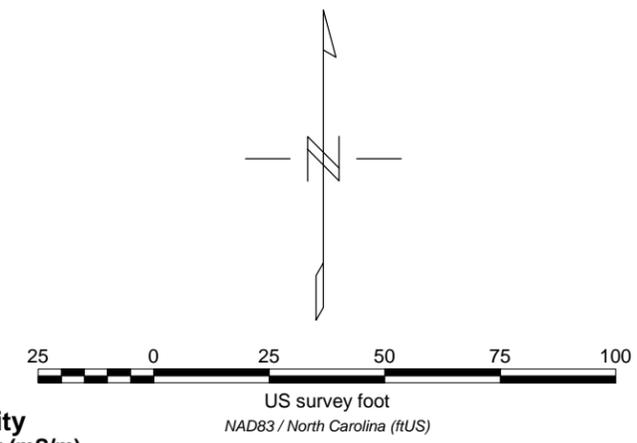
Site ID:	Towers Road Disposal Area, Hertford, NC
Grid Block Id:	5th_St
Grids within Grid block:	5th_St
Date of Collection:	7/31/2014
Raw associated QC Files:	0731QC1, 0731QC2, 0731DYN1, 0731DYN2
Raw Data Files:	Grid1, Grid1R, Grid2, Grid2R, Grid3, Grid3R
Field Note Files:	Grid3_notes.pdf (for fiducial (locals) DGM - Grid 3)
Misc. Files:	hertford.csv (X/Y NOT Corrected. GPS Culture, base point and GPS QC Check), Report_4003016.pdf (GPS X/Y Correction from Trimble), Corrected_Values_for_GPS.xlsx (excel spreadsheet for GPS X/Y Corrections)
Processor:	Cora Blits
Data Processing Software:	Geosoft Oasis Montaj with UX-detect
Has header been added to file?	Yes
File Contains Grids as Stated?	Yes
Data translated from local coordinates?	Yes (applicable to Grid 3 data only)
Line gaps have been accounted for?	n/a
Coordinates are correct?	Yes
Background noise was reasonable?	Yes
Crosstrack distance btwn lines acceptable?	Yes
Downline density OK?	Yes
Mean Sample Separation (Downline):	0.25ft
% of points outside downline data DQO:	0.00%
% of grid covered:	n/a
Lag correction:	Lag of 2 applied to grids 1 and 2 (GPS DGM). Lag of 9 applied to grid 3 (Fiducial/Locals DGM).
Leveling:	n/a
Filters:	n/a
Gridding Method:	Minimum Curvature
Gridding Cell Size:	0.5
Gridding Blanking Distance:	5 (large blanking distance used to interpolate between wide spaced lines)
Anomaly Selection details:	n/a
Processed Data file Names:	5th_St.xyz
Map File Names:	5th_St_Conductivity.map, 5th_St_InPhase.map
Anomaly Selection File Names:	n/a
Processing Comments:	Data was collected at an acute angle to the linear features in the Anomalous Area identified in the southeastern corner of the collection area. Truncated (High values in which the instrument was static at a certain value) InPhase and Conductivity data values were not included in the lagged data channels or in the gridded data. These high values (truncated) along with the collection orientation caused lagging problems with the data on lines T1, T1.1, T2 T3 & T4.
Date Processing Complete:	8/5/2014
Geophysicist QC Name:	Jon Guillard
Geophysicist QC Date:	8/6/2014
Geophysicist QC Comments:	Tests 0731QC1 and 0731QC2 demonstrated low noise levels with no observed data spikes. 0731QC1 and 0731QC2 tests were not collected at the same location. Dynamic tests 0731DYN1 and 0731DYN2 were collected next to a utility box. During 0731DYN1 (collected NW to SE) the instrument passed directly by the box. During 0731DYN2 (Collected SE to NW) the operator was located between the instrument and the utility box. This is believed to account for the lower response in 0731DYN2.
Final Delivery date:	8/6/2014

Appendix B

EM31-MK2 Final Site Mosaics



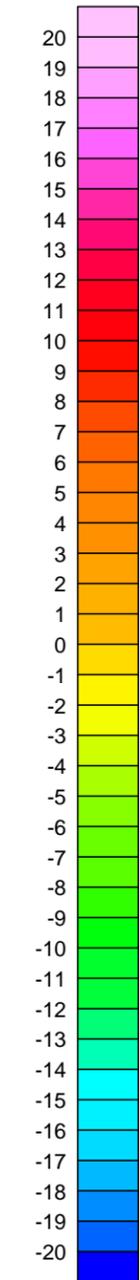
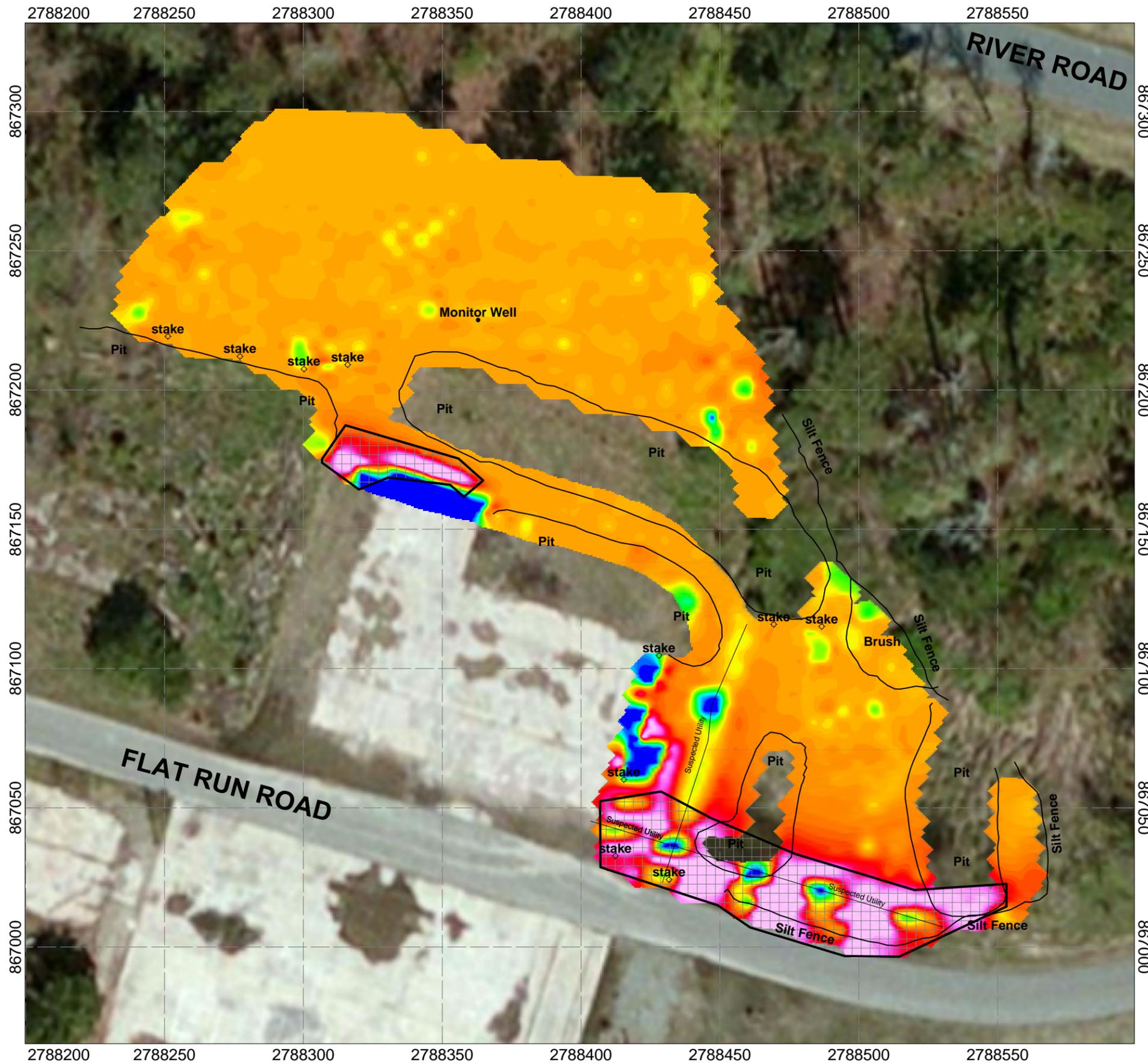
- Legend
- Monitor Well
 - Stake
 - ⊗ Anomalous Area



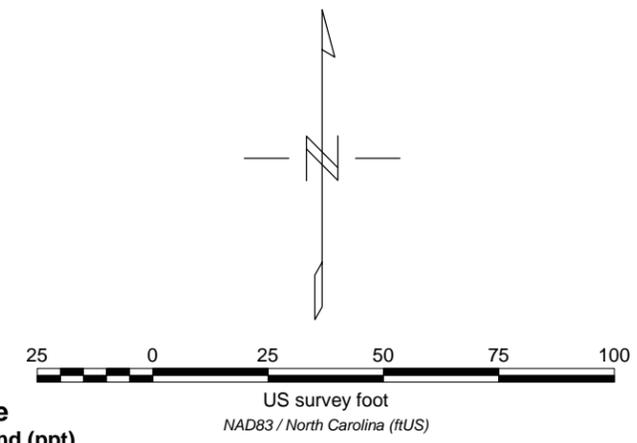
Conductivity
millisiemens/meter (mS/m)

Figure 1

Client: CH2M HILL
EM31 Conductivity Towers Road Disposal Areas 5th Street Disposal Area Hertford, North Carolina
Date of Survey: 07/31/2014



- Legend
- Monitor Well
 - ⊕ Stake
 - ⊞ Anomalous Area



In-phase
parts per thousand (ppt)

Figure 2

Client: CH2M HILL
EM31 In-phase Towers Road Disposal Areas 5th Street Disposal Area Hertford, North Carolina
Date of Survey: 07/31/2014

Attachment F
Backfill Material Delivery Documentation

001

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

AGVIA

Truck No. W108 Equip No. _____

Date 11/4/15

Single Axle _____

Quad 15 yds Top Soil
Tandem _____

Triaxle _____

Tractor Duane Midgett

Accepted by Jan Chad

No. AGVIA
14731

002

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by Jan Chad

No. 15303 AGVIA

003

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by Jan Chad

No. 15304 AGVIA

004

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

AGVIA
Harvey Point Base

Truck No. W18 Equip No. _____

Date 11/4/15

Single Axle _____

Quad 15 yds Top Soil
Tandem _____

Triaxle _____

Tractor Duane Midgett

Accepted by Jan Chad

No. 14818

005

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15307

006

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. ~~W-415~~ W-35 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15305

007

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIA

Truck No. W68 Equip No. _____

Date 11/4/15

Single Axle _____

Quad 15 yds Topsoil

Tandem _____

Triaxle _____

Tractor Quano Midgett

Accepted by [Signature]

No. 14734

008

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIA

Truck No. W68 Equip No. _____

Date 11/4/15

Single Axle _____

Quad 15 yds Topsoil

Tandem _____

Triaxle _____

Tractor Quano Midgett

Accepted by [Signature]

No. 14730

009

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ HARVEY PT.

Truck No. 23 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15yd Topsoil

Tractor 20

Accepted by Michael Burgess

No. 15309

010

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ HARVEY POINT

Truck No. 23 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15yds Topsoil

Tractor 20

Accepted by Michael Burgess

No. 15308

011

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ HARVEY POINT

Truck No. 26 Equip No. _____

Date 11-4-15

Tandem Quad

Quad 15yds Topsoil

Tractor Eric

Accepted by Michael Burgess

No. 15313

012

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ HARVEY POINT

Truck No. 26 Equip No. _____

Date 11-4-15

Tandem Quad

Quad 15 yds Topsoil

Tractor Eric

Accepted by Michael Burgess

No. 15306

13

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Michael Burgess

No. 15357

14

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIA

Truck No. W68 Equip No. _____

Date 11/4/15

Single Axle _____

Tandem Quad 15 yds Topsoil

Triaxle _____

Tractor Diana Midgett

Accepted by Michael Burgess

No. 14823

015

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ HARVEY PT

Truck No. 23 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Topsoil

Tractor 70

Accepted by Justin

No. 15310 AGVIA

016

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ HARVEY POINT

Truck No. 26 Equip No. _____

Date 11-4-15

Tandem Quad

Quad 15 yds Topsoil

Tractor Eric

Accepted by Justin

No. 15314
AGVIA

17

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-4-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Michael Burgess

No. 15358

18

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIQ

Truck No. W68 Equip No. _____

Date 11/4/15

Single Axle _____

Tandem Quad 15 yds Topsoil

Triaxle _____

Tractor A. Midgett

Accepted by Michael Burgess

No. 14728

019

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIQ

Truck No. W68 Equip No. _____

Date 11/5/15

Single Axle _____

Tandem Quad 15 yds Topsoil

Triaxle _____

Tractor Dianne Midgett

Accepted by Michael Burgess

No. 14732

020

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQC Harvey Point

Truck No. 26 Equip No. _____

Date 11-5-15

Tandem Quad

Quad 15 yds Topsoil

Tractor Eric

Accepted by Michael Burgess

No. 15359

021

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ HARVEY PT

Truck No. 23 Equip No. _____

Date 11-5-15

Tandem _____

Quad 15 yds Topsoil

Tractor 70

Accepted by Michael Burgess

No. 15311

022

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-5-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Michael Burgess

No. 15373

023

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIA

Truck No. W-68 Equip No. _____

Date 11/5/15

Single Axle _____

Quad 15 yds Topsoil

Triaxle _____

Tractor Duane Midget

Accepted by Michael Burgess

No. 14720

024

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-5-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Michael Burgess

No. 15374

025

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ Harvey Pt

Truck No. 33 Equip No. _____

Date 11-5-15

Tandem _____

Quad 15 yds Top soil

Tractor 20

Accepted by Michael Bragg

No. 15368

026

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ Harvey Point

Truck No. 26 Equip No. _____

Date 11-05-15

Tandem Quad

Quad 15 yds Top soil

Tractor Eric

Accepted by Michael Bragg

No. 15360

027

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIQ

Truck No. W68 Equip No. _____

Date 11/5/15

Single Axle _____

Quad 15 yds Top soil

Triaxle _____

Tractor Diane Mitchell

Accepted by Michael Bragg

No. 14310

028

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-5-15

Tandem _____

Quad 15 yds Top soil

Tractor _____

Accepted by Michael Bragg

No. 15375

029

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ Harvey Point

Truck No. 26 Equip No. _____

Date 11-5-15

Tandem Quad

Quad 15yds Topsoil

Tractor Eric

Accepted by Michael Burgess

No. 15316

30

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agvia @ Harvey Pt.

Truck No. 23 Equip No. _____

Date 11-5-15

Tandem _____

Quad 15yd Topsoil

Tractor 70

Accepted by Michael Burgess

No. 15369

#31

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agvia Harvey Pt

Truck No. 23 Equip No. _____

Date 11-11-15

Tandem _____

Quad 15yd Topsoil

Tractor _____

Accepted by Jason Chalk

No. 15372 AGVIA

#32

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Jason Chalk

No. 15420 AGVIA

#33

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by [Signature]
No. 15419
AGVIA

#34

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ Harvey Pt

Truck No. 23 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor 20

Accepted by [Signature]
No. 15380 AGVIA

#35

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by [Signature]
No. 15418
AGVIA

36

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ Harvey Pt

Truck No. 30 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor 20

Accepted by [Signature]
No. 15381

37

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by JC

No. 15417

38

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ HARVEY PT

Truck No. 30 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor 70

Accepted by JC

No. 15378

39

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-16-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by JC

No. 15416

40

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIA

Truck No. W68 Equip No. _____

Date 11/16/15

Tandem _____

Quad Topsoil 15 yards

Tractor Duane Widdett

Accepted by Michael Jung

No. 15520

#41
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15415

42
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA Harvey Point

Truck No. 30 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor 20

Accepted by [Signature]

No. 15379

43
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point Base

Truck No. W68 Equip No. _____

Date 11/17/15

Tandem _____

Quad 15 yds Topsoil

Tractor Duane Midgett

Accepted by [Signature]

No. 15527

#44
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15414

#45

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agvig @ Harvey Pt

Truck No. 30 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Top Soil

Tractor 10

Accepted by [Signature]

No. 15371

#46

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIG
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by [Signature]

No. 15413

#47

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agvig @ Harvey Pt

Truck No. 30 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Top Soil

Tractor 10

Accepted by [Signature]

No. 15370

#48

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIG
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Top Soil

Tractor _____

Accepted by [Signature]

No. 15412

#49
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ HARVEY PT

Truck No. 30 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor LO

Accepted by [Signature]

No. 15386

#50
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15411

#51
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA @ HARVEY PT

Truck No. 30 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor LO

Accepted by [Signature]

No. 15382

#52
WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-17-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15410

53

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: *Agvia @ Harvey Pt*

Truck No. 31 Equip No. _____

Date 11-17-15

Tandem _____

Quad 5 yds Topsoil

Tractor LC

Accepted by [Signature]

No. 15383

54

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: *Harvey Point Base
AGVIA*

Truck No. W68 Equip No. _____

Date 11/18/15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15521

55

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: *AGVIA
Harvey Point*

Truck No. W-35 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by [Signature]

No. 15409

56

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: *Agvia @ Harvey Pt*

Truck No. 31 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yds Topsoil

Tractor LC

Accepted by [Signature]

No. 15384

#57

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agvia @ Harvey Pt

Truck No. 29 Equip No. _____

Date 11-19-15

Tandem _____

Quad 15 yds Topsoil

Tractor Chouch G

Accepted by _____

No. 15387

#58

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIO

Truck No. W68 Equip No. _____

Date 11/18/15

Tandem _____

Quad 15 yds Topsoil

Tractor Durane Midgett

Accepted by Max

No. 15522

#59

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIO
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-19-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Max

No. 15408

#60

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agvia @ Harvey Pt

Truck No. 30 Equip No. _____

Date 11-19-15

Tandem _____

Quad 15 yds Topsoil

Tractor 40

Accepted by _____

No. 15385

#61

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIQ

Truck No. W68 Equip No. _____

Date 11/18/15

Tandem _____

Quad 15 yrd Topsoil

Tractor Duane Midgett

Accepted by [Signature]

No. 15523

#62

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yrd Topsoil

Tractor _____

Accepted by [Signature]

No. 15407

#63

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: AGVIQ @ Harvey Pt

Truck No. 30 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yrd Topsoil

Tractor 20

Accepted by [Signature]

No. 15388

#64

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Harvey Point Base
AGVIQ

Truck No. W68 Equip No. _____

Date 11/18/15

Tandem _____

Quad 15 yrd Topsoil

Tractor Duane Midgett

Accepted by [Signature]

No. 15524

#65

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Rox

No. 15406

#66

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

Agv. @ Harvey Pt.

Truck No. 30 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yd T. Soil

Tractor 10

Accepted by Rox

No. 15391

#67

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

Harvey Point Base
AGVIA

Truck No. W68 Equip No. _____

Date 11/18/15

Tandem _____

Quad 15 yds Topsoil

Tractor D Midgett

Accepted by Rox

No. 15525

#68

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job:

AGVIA
Harvey Point

Truck No. W-35 Equip No. _____

Date 11-18-15

Tandem _____

Quad 15 yds Topsoil

Tractor _____

Accepted by Rox

No. 15405

69

WHITEHURST SAND COMPANY

233 Woodville Road
HERTFORD, NC 27944
Phone: (252) 264-3027
Fax: (252) 264-2712

Job: Agv 7 @ Harvey

Truck No. 30 Equip No. _____

Date 11-1-11

Tandem _____

Quad 1591

Tractor 10

Accepted by [Signature]

No. 15392

Attachment G
Laboratory Reports

Attachment G is provided electronically on the attached CD.

Attachment H
UXO QC Forms

HPDTA Soil Removal QC Lot Form

QC Lot 1 has been processed in accordance with the procedures outlined in the Explosive Safety Submission for Harvey Point Defense Testing Activity Towers Road Disposal Areas Material Management, which were developed to ensure the removal of all MEC and MPPEH greater than 2 inches in diameter in the smallest dimension. This material is thereby, within a reasonable degree of certainty, documented to be free of MEC and MPPEH greater than 2 inches in diameter in the smallest dimension and approved for disposal.

JOHN W. STODDART
UXOQCS Name


UXOQCS Signature

10-30-15
Date

HPDTA Soil Removal QC Lot Form

QC Lot 2 has been processed in accordance with the procedures outlined in the Explosive Safety Submission for Harvey Point Defense Testing Activity Towers Road Disposal Areas Material Management, which were developed to ensure the removal of all MEC and MPPEH greater than 2 inches in diameter in the smallest dimension. This material is thereby, within a reasonable degree of certainty, documented to be free of MEC and MPPEH greater than 2 inches in diameter in the smallest dimension and approved for disposal.

JOHN W STODART
UXOQCS Name

John W Stodart
UXOQCS Signature

10-29-15
Date

NOTE: LOT 2 - OVERSIZE material