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51FRBCERCLASF10,640

Site Name:

VCC-WINSTON-SALEM

Subsite:

Site Name: *Do not enter text.*

NCN000410344

Full Site Name (Subject): *Do not enter text.*

VCC-WINSTON-SALEM

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Ken Mallary
USEPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth St., S.W.
Atlanta, GA 30303



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Cary
North Carolina 27518-8518
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Subject:
Removal Site Evaluation Work Plan
Former Virginia-Carolina Chemical Corporation Site
Winston-Salem, North Carolina

ENVIRONMENTAL

Dear Mr. Mallary:

Date:
December 19, 2008

This work plan presents Exxon Mobil Environmental Services Company's (ExxonMobil's) approach for conducting a Removal Site Evaluation (RSE) at the former Virginia-Carolina Chemical Corporation (VCC-2) fertilizer plant located in Winston-Salem, Forsyth County, North Carolina.

Contact:
Matthew T. Pelton, P.E.

The Winston-Salem site presents unique problems because of the presence of multiple contaminants and multiple Potentially Responsible Parties (PRPs). ExxonMobil commits to perform sampling of the fertilizer plant area. If materials from the VCC-2 former fertilizer manufacturing are impacting the environment then ExxonMobil will address them using the normal VCC process with USEPA and NCDENR. ExxonMobil plans to notify current and former owners of the property and adjacent properties that we expect they will participate in any area-wide investigation that may be required by the agencies.

Phone:
919.415.2308

Email:
matthew.pelton@arcadis-us.com

The objective of this RSE Work Plan is to collect soil data for initial screening purposes to identify whether or not the site contains constituents related to historic activities associated with the VCC-2 Winston-Salem Operations.

Our ref:
B0085732

Background

Virginia-Carolina Chemical Company (VCC-1) purchased the site from Southern Chemical Company in 1902. At the conclusion of VCC-1's bankruptcy and reorganization proceedings in 1926, Virginia-Carolina Chemical Corporation (VCC-2) of Richmond, Virginia emerged as a new company and acquired the site and

Imagine the result

associated property. VCC-2 merged into Socony Mobil Oil Company, Inc. in 1963, and the company name changed in 1966 to Mobil Oil Company. In 1999, Exxon Corporation merged with Mobil Oil Company to form Exxon Mobil Corporation. Mobil Oil became ExxonMobil Oil Corporation, the corporate successor to VCC-2. Exxon Mobil Corporation is the parent company of ExxonMobil Oil Corporation.

The site is located in the City of Winston-Salem, Forsyth County, North Carolina, near the intersection of Indiana Avenue and two separate branches of the Norfolk Southern railroad. Figure 1 depicts the location of the site on portions of the USGS 7.5-minute quadrangle maps for Walkertown and Winston-Salem East, North Carolina. The property that contains most of the Winston-Salem site has a street address of 3301 Glenn Avenue (Figure 2); however, the former plant site is located at the far southern end of this property closer to Indiana Avenue between two branches of the Norfolk Southern Railroad. The approximate geographical location of the center of the site is at 36.1270° North latitude and 80.2342° West longitude (North American Datum of 1983 [NAD83]).

Figure 2 depicts the approximate boundaries of the former Winston-Salem property superimposed on a 2002 aerial photograph. Figure 2 also depicts the current site features, and historical site features digitized from 1907 and 1917 Sanborn maps. The Site is in an old industrial area located northeast of downtown Winston-Salem, along North Liberty Street, near the intersection/divergence of two branches of the Norfolk Southern Railroad. The former Site is bounded to the north by Norfolk Southern's rail yard and Atlantic Scrap's facility, to the east by the Norfolk Southern Railroad (and North Liberty Street beyond), to the south by vacant industrial land (and Indiana Avenue beyond), to the southwest by the Norfolk Southern Railroad (and NCDOT Site No. 54 beyond), and to the west by a rolling stock storage yard. The site is bisected from northwest to southeast by the US 52 / SR 8 ROW, which is approximately 150-feet wide.

Almost all of the land within 500 feet of the site can be characterized as commercial, industrial, vacant/abandoned industrial, or transportation. A property occupied by Hanes Lawrence Middle School is located just over 400 feet southwest of the site. The broader area shown on Figure 2 includes a mixture of commercial, industrial, institutional, government, and residential land uses. Areas north and south of the site are primarily commercial and industrial. Areas to the distant east and distant west of the site are primarily residential. A large Norfolk Southern rail yard is located north of the site, and Smith Reynolds Airport is located northeast of the site.

Currently, the former Winston-Salem site is occupied by 2 tax parcels. Current property boundary information was provided by a 2007 Forsyth County tax map.

Operational History

Historical information indicates that a fertilizer plant was constructed at the site by Southern Chemical Company between 1895 and 1900, and was continuously operated through 1927. VCC-1 acquired the plant from Southern Chemical Company in 1902, and VCC-2 acquired the plant from VCC-1 in 1926. Historical fertilizer yearbooks list the site variously as Virginia Carolina Chemical Company and Southern Chemical Company from 1911 through 1913, and as Virginia Carolina Chemical Company from 1914 through 1926 (FMD and AFH as referenced in Section 7). In 1927, the site is listed as Virginia Carolina Chemical Corporation. After 1927, there are no listings that correspond with the site. From 1911 through 1920, the fertilizer yearbooks provide no specific information regarding plant operations. However, the site is listed as a complete factory with acid chambers or acid process facilities from 1921 through 1927.

A review of the available Sanborn Fire Insurance maps confirmed that the facility was a complete factory with acid production facilities throughout its entire operational history. At various times throughout the plant's history, its features included an acid chamber structure, compressor room, pyrites burners, a pyrites house, acid towers, a nitre house, a boiler room, a pump house, various water towers, a 100,000-gallon reservoir, a tobacco stem and grinding warehouse and associated drying furnace, a transformer house, rock sheds, a mill building (for grinding, mixing, storage, and bagging of fertilizer), a bag house, a motor printing press, several storage/warehouses, scales, a corn crib, and an office. As indicated on the Sanborn maps, the plant received its water supply from a "branch" located north of the plant site. Figure 2 identifies the locations of many of these features superimposed on a base map consisting of the 2002 aerial photograph and the 2007 Forsyth County tax maps. The mill building and associated structures were located south of present-day US 52 / SR 8, and the acid plant was located beneath and to the north of present-day US 52 / SR 8. Although the plant remained essentially unchanged throughout its years of operation, some notable modifications did take place, including an expansion of the mill building and the acid plant between 1900 and 1907.

Proposed RSE Sampling Activities

This RSE Work Plan includes provisions for the collection and analysis of soil samples to confirm the presence or absence of potential operations-related constituents. Based on experience at other VCC-2 sites, operations related constituents are arsenic and lead. In addition, the presence of low pH (i.e., less than 6.5 standard units) is a typical indicator of historical acid production processes conducted at former VCC sites. Therefore, samples collected at the Winston-Salem Site will be analyzed for arsenic, lead, and pH. The locations of all soil samples described below are tentative. Actual locations may be adjusted in the field depending on direct observations and site logistics/access limitations.

All samples will be collected in accordance with the USEPA Region 4 *Field Branches Quality System and Technical Procedures* (USEPA, Region 4, Science and Ecosystem Support Division (SESD), most current versions of applicable procedures will be followed). The proposed sampling approach for the RSE is summarized below.

Soil Sampling Program

A total of 24 soil borings are proposed for the Winston-Salem Site. The soil sampling program was developed using USEPA's Judgmental Sampling methods described in *Guidance of Choosing a Sampling Design for Environmental Data Collection* (USEPA, 2002). Judgmental Sampling allows for the use of professional judgment in order to bias sample locations towards areas of known historical use (e.g., acid chambers, sulfur storage areas). Soil borings in locations outside the former plant area were biased toward areas where there is the potential for human contact to soil. Samples collected during the RSE will be limited to the areas in and adjacent to the former fertilizer plant areas. Figure 3 depicts the proposed soil boring locations. Additional soil borings may be advanced at the discretion of ExxonMobil or at the request of the USEPA. Prior to intrusive activities, ARCADIS will coordinate with local utility companies and a private subsurface utility locating service to identify and mark all subsurface utilities near the proposed boring locations. Boring locations may be adjusted in the field based on the presence of existing utilities or other access limitations.

Soil Screening and Analysis Procedures

Soil borings will be advanced at each location using a stainless steel trowel and/or hand auger from the ground surface to a maximum depth of 4 feet below ground surface (ft bgs), or until refusal or groundwater is encountered, whichever occurs first. Each boring interval (0 – 0.5, 0.5 – 2.0, and 2.0 – 4.0 ft bgs) will be screened for lead and arsenic in the field using a portable X-ray fluorescence (XRF) unit. Soil samples will be collected from each boring interval and submitted to TestAmerica Laboratories of Nashville, Tennessee for arsenic, lead, and pH analysis. Additional soil sampling may be conducted based on field observations at the discretion of ExxonMobil or at the request of the USEPA. A summary of the proposed soil sampling program is provided in Table 1.

Surface Water and Sediment Sampling Program

Known surface water features (Bowen Branch) on/adjacent to the site (Figures 1 and 2) are over 500 feet away from the former site manufacturing areas. Therefore, no surface water or sediment samples are expected to be collected. However, if any closer surface water/drainage features are observed during the site investigation ARCADIS will be prepared to collect sediment and/or surface water samples, if appropriate.

Surface water and sediment sampling, if required, will be conducted using the applicable procedures provided in the USEPA Region 4 *Field Branches Quality System and Technical Procedures*. Co-located surface water and sediment samples will be collected from locations identified in any major drainage pathways on the site. Surface water samples will be collected prior to sediment sampling in a downstream to-upstream direction. Surface water samples will be collected by directly filling the sample containers from as near as practical to the center of the waterbody. Following sample collection, water quality parameters will be monitored for pH, temperature, specific conductivity, DO, ORP, and turbidity at the depth from which the sample was collected using a water quality meter. Sediment samples will be collected from the top 6 inches of the sediment using a stainless steel scoop. At each sediment sample location the total water depth and sediment characteristics will be noted. Any surface water/sediment samples that are collected will be submitted to TestAmerica Laboratories of Nashville, Tennessee for arsenic, lead, and pH analysis

Quality Assurance/Quality Control

All sample procedures will be performed in accordance with the methods identified in the USEPA Region 4 Field Branches Quality System and Technical Procedures. Sampling equipment will include both disposable and re-usable components. Disposable equipment will be contained in properly labeled 55-gallon United Nations (UN)-approved steel drums and disposed appropriately. Re-usable equipment will be decontaminated prior to, and in between use, in accordance with the decontamination procedures identified in the USEPA Region 4 *Field Branches Quality System and Technical Procedures*. All samples will be analyzed in accordance with USEPA Contract Laboratory Program (CLP) procedures. Quality assurance/quality control (QA/QC) procedures will include the collection and analysis of blind field duplicates, equipment rinsate blanks, and matrix spike/matrix spike duplicate (MS/MSD) samples. The number and frequency of QA/QC samples are summarized in Table 1.

Surveying

All proposed soil boring locations will be staked (or marked) in the field and documented using global positioning system (GPS) methods.

Investigation Derived Waste

All investigation derived waste (IDW) including soils, plastic, decontamination fluids, and personal protective equipment (PPE), will be containerized in properly labeled UN-approved 55-gallon steel drums. Laboratory analysis of each media (i.e., soil and water) will be performed on a quick turn-around schedule to minimize the amount of time that the drums are staged on-site. Drums containing solids will be analyzed for toxicity characteristic leaching potential (TCLP) metals by TestAmerica (Table 1). IDW disposal requirements will be based on the analytical results and IDW disposal will be performed at an ExxonMobil selected facility.

Property Access Agreements

ExxonMobil will obtain access agreements from the three property owners affected by the proposed RSE activities. Upon USEPA approval of this RSE Work Plan, and negotiation of the necessary access agreements, ExxonMobil will proceed with the implementation of this Work Plan for the Winston-Salem Site. Work activities could

ARCADIS

Mr. Ken Mallery
December 19, 2008

likely be initiated within 30 days of USEPA approval and obtaining access agreements.

Sincerely,

ARCADIS



Matthew T. Pelton, P.E.
Sr. Project Engineer II

Copies:

Mr. David Mattison (NCDENR)
Mr. Steve Schmidt (ExxonMobil)
Mr. Geoff Germann, P.E. (ARCADIS)

ARCADIS

Tables

Table 1
Soil Sampling and Analysis Program
Winston-Salem, Forsyth County, North Carolina
Removal Site Evaluation Work Plan

| Parameter | Estimated Number of Borings ¹¹ | Estimated No. of Samples per Boring ¹¹ | Estimated No. of Field Samples ¹¹ | No. of Field QC Samples | | | Total No. Field + Field QC Samples ¹¹ | No. of MS/MSD Sample Sets |
|------------------------------|---|---|--|-------------------------|-------------|------------|--|---------------------------|
| | | | | Duplicate | Rinse Blank | Trip Blank | | |
| Soil Samples | | | | | | | | |
| Arsenic and Lead | 24 | 3 | 72 | 4 | 5 | 0 | 81 | 4 |
| pH | 24 | 3 | 72 | 4 | 5 | 0 | 81 | 4 |
| IDW Samples (Solid) | | | | | | | | |
| TCLP Metals | -- | -- | 1 | 0 | 0 | 0 | 1 | 0 |
| IDW Samples (Aqueous) | | | | | | | | |
| Arsenic and Lead | -- | -- | 1 | 0 | 0 | 0 | 1 | 0 |
| pH | -- | -- | 1 | 0 | 0 | 0 | 1 | 0 |

Notes:

NA = Not applicable.

Arsenic and lead will be analyzed via CLP-SOW ILM 4.2.

pH will be analyzed via SW-846 9045C.

CLP-SOW - Contract Laboratory Program Statement of Work

IDW = Investigation Derived Waste.

MS/MSD = Matrix Spike/Matrix Spike Duplicate.

¹¹ The number of borings and total number of samples are approximate. Approximately 3 soil samples will be collected from each soil boring unless shallow refusal or groundwater is encountered.

Field duplicate samples will be collected at a frequency of 5% (1 for every 20 samples).

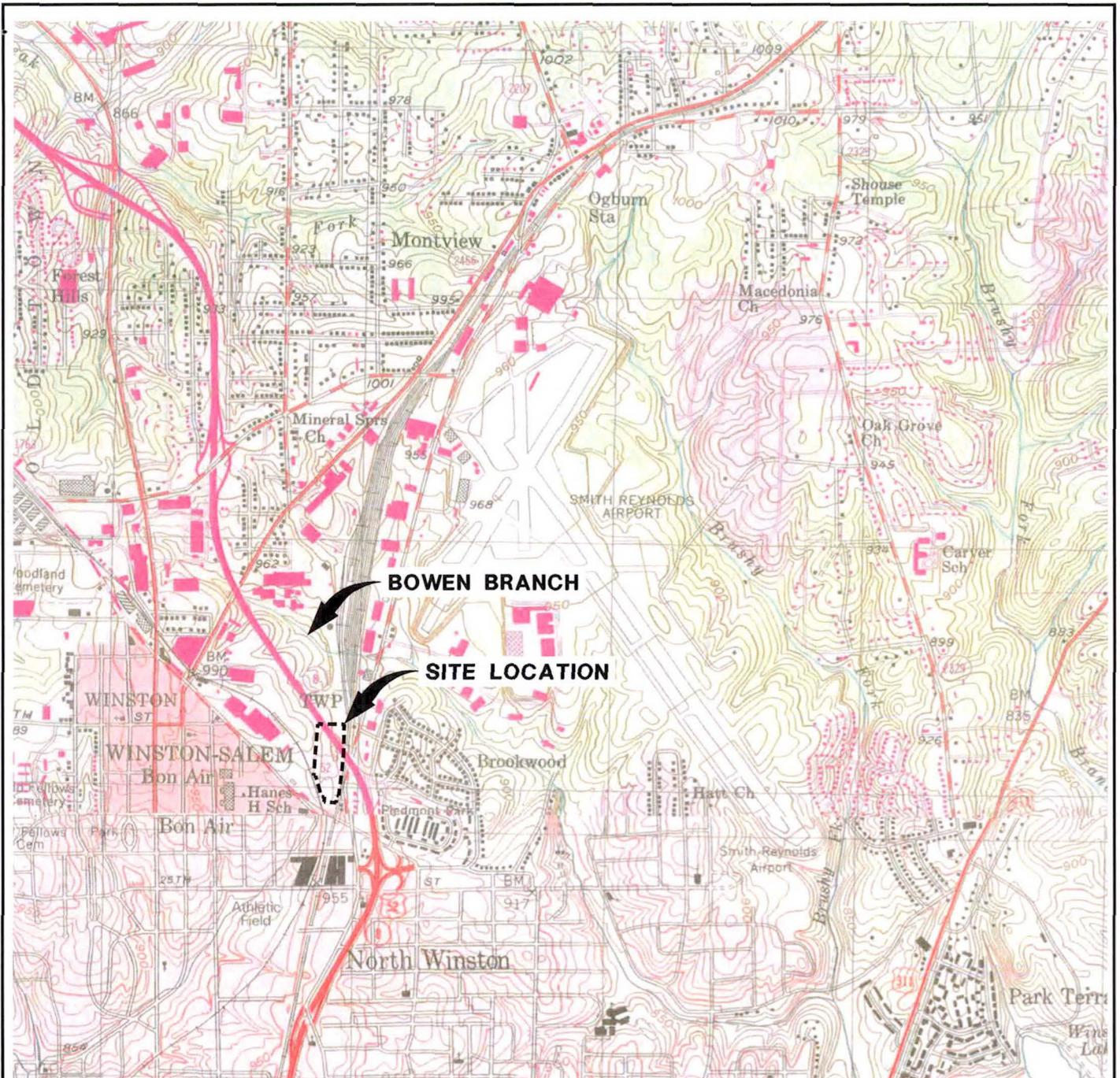
Equipment rinse blanks will be collected at a frequency of one per day.

MS/MSD samples will be collected at a frequency of 5% (1 for every 20 samples).

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Figures.

CITY: ELLIS DIV: GROUP: 41 DB: LELLIS LD: (Opt) LVR: (Opt) ON: -OFF=REF- G: CADACT: 180085732000100002MAP: REP: PORT: WSEW: 95732001.dwg LAYOUT: 1 SAVED: 12/12/2008 2:22 PM ACADVER: 17.15 (LMS TECH) PAGES: SETUP: --- PLOT: STYLE: ETABLE: PLT: FULL: CTTB PLOTTED: 12/12/2008 2:22 PM BY: ELLIS, LEKOREY



REFERENCE: USGS 7.5 MIN. QUAD., WALKERTOWN/WINSTON-SALEM EAST, N.C., 1951 PHOTOREVISED 1997

LEGEND:

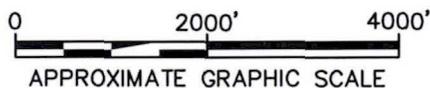
----- APPROXIMATE LOCATION OF FORMER PLANT FENCE LINE (APPROXIMATE BOUNDARIES OF THE FIRST LOT OF THE ORIGINAL PLACE)



AREA LOCATION

NOTE:

1. BASED ON AVAILABLE CHAIN-OF-TITLE INFORMATION, IT IS ESTIMATED THAT VCC-2 OWNED CLOSE TO 180 ACRES OF PROPERTY IN FORSYTH COUNTY. THE ONLY PORTION OF THIS PROPERTY WHOSE LOCATION COULD NOT BE READILY ASCERTAINED AND MAPPED (WITH A DEGREE OF CERTAINTY) WAS THE "FIRST LOT OF THE ORIGINAL PLACE". THE FORMER VCC-2 PLANT FENCE LINE APPROXIMATES THE BOUNDARY OF THE FIRST LOT OF THE ORIGINAL PLACE.



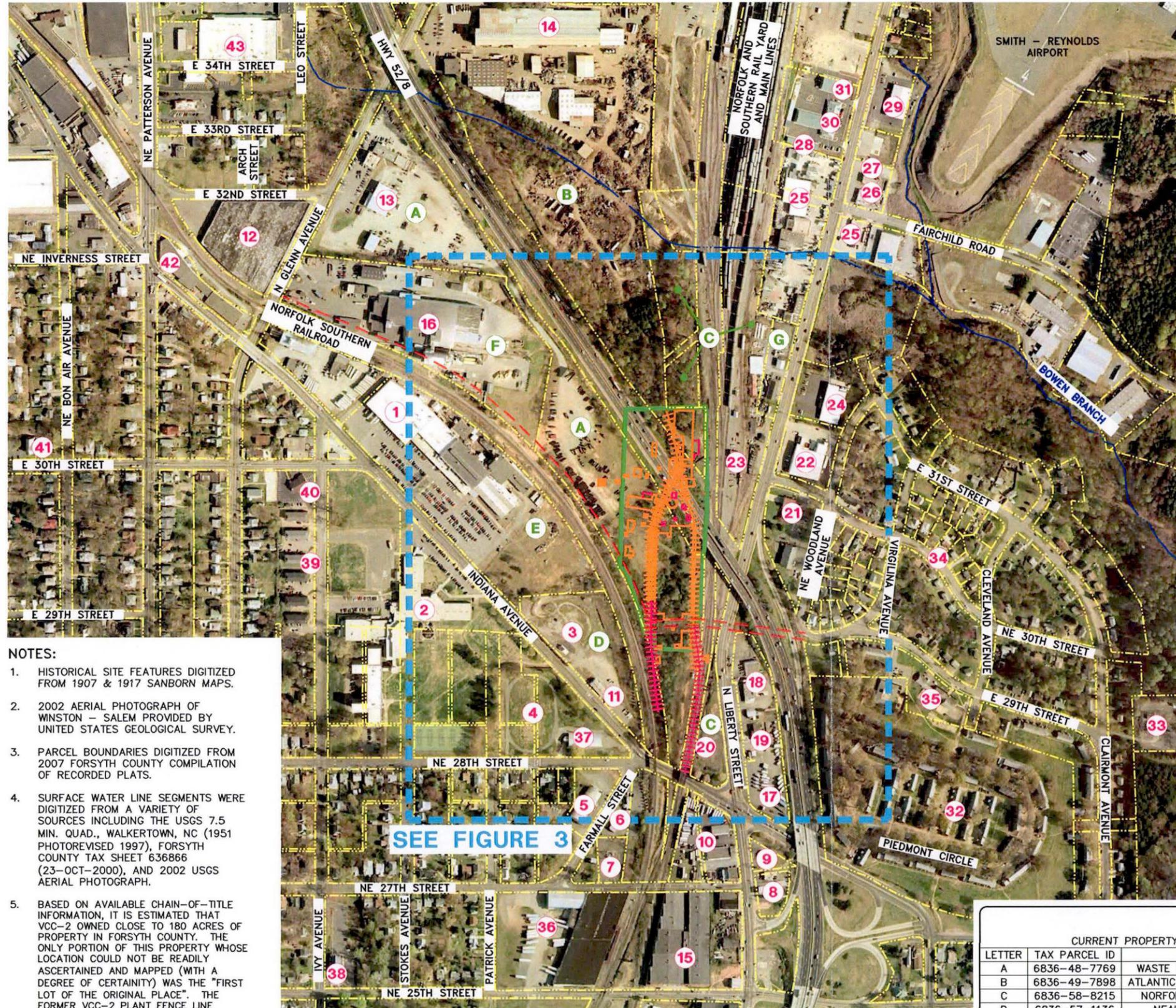
EXXONMOBIL ENVIRONMENTAL SERVICES COMPANY
WINSTON-SALEM, FORSYTH COUNTY, NORTH CAROLINA
REMOVAL SITE EVALUATION WORK PLAN

SITE LOCATION MAP



FIGURE
1

CITY: CARY DIV: GROUP 41 DB: LELIS LD: (C) PIC: (C) PM: (R) TM: (C) LVR: (C) ON: (N) OFF: (R) REF: G:\CAD\ACT\6085732\0002\MAP\REPORT\RSWP\85732001.dwg LAYOUT: 2. SAVED: 11/16/2008 10:02:AM ACADVER: 17.15 (LMS TECH) PAGES: 2/2 PLOT: 12/12/2008 2:28 PM BY: ELLIS, LKORREY



NOTES:

1. HISTORICAL SITE FEATURES DIGITIZED FROM 1907 & 1917 SANBORN MAPS.
2. 2002 AERIAL PHOTOGRAPH OF WINSTON - SALEM PROVIDED BY UNITED STATES GEOLOGICAL SURVEY.
3. PARCEL BOUNDARIES DIGITIZED FROM 2007 FORSYTH COUNTY COMPILATION OF RECORDED PLATS.
4. SURFACE WATER LINE SEGMENTS WERE DIGITIZED FROM A VARIETY OF SOURCES INCLUDING THE USGS 7.5 MIN. QUAD., WALKERTOWN, NC (1951 PHOTOREVISED 1997), FORSYTH COUNTY TAX SHEET 636866 (23-OCT-2000), AND 2002 USGS AERIAL PHOTOGRAPH.
5. BASED ON AVAILABLE CHAIN-OF-TITLE INFORMATION, IT IS ESTIMATED THAT VCC-2 OWNED CLOSE TO 180 ACRES OF PROPERTY IN FORSYTH COUNTY. THE ONLY PORTION OF THIS PROPERTY WHOSE LOCATION COULD NOT BE READILY ASCERTAINED AND MAPPED (WITH A DEGREE OF CERTAINTY) WAS THE "FIRST LOT OF THE ORIGINAL PLACE". THE FORMER VCC-2 PLANT FENCE LINE APPROXIMATES THE BOUNDARY OF THE FIRST LOT OF THE ORIGINAL PLACE.
6. ALL LOCATIONS ARE APPROXIMATE.

FORMER STREET NAMES:
 NE PATTERSON AVE. (FKA DEPOT ST.)
 NORFOLK SOUTHERN RAILROAD (FKA SOUTHERN RR AND ROANOKE SOUTHERN RR)
 INDIANA AVE. (FKA INVERNESS AVE.)
 FARMALL ST. (FKA OGBURN ST.)
 LIBERTY ST. (FKA WALKERTOWN RD.)
 FAIRCHILD RD. (FKA NORWOOD ST.)
 NORFOLK AND SOUTHERN RAIL YARD AND MAIN LINES (FKA NORFOLK AND WESTERN RAILWAY CO.)

SEE FIGURE 3

LEGEND:

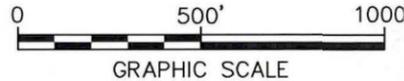
- APPROXIMATE LOCATION OF THE FORMER VCC-2 PLANT FENCE LINE (APPROXIMATE BOUNDARIES OF THE FIRST LOT OF THE ORIGINAL PLACE)
- APPROXIMATE LOCATION OF FORMER FERTILIZER PLANT FEATURES (1907)
- APPROXIMATE LOCATION OF FORMER FERTILIZER PLANT FEATURES (1917 ADDITIONS)
- APPROXIMATE LOCATION OF FORMER RAILROAD SIDINGS (1907 & 1917 PLANT FEATURES)
- APPROXIMATE LOCATION OF SURFACE WATER FEATURES
- CURRENT TAX PARCEL BOUNDARIES
- 30' POWER TRANSMISSION RIGHT-OF-WAY

CURRENT PROPERTY USAGE KEY: #

1. KABA IICO FACTORY
2. HANE LOWRENCE MIDDLE SCHOOL
3. VACANT, FENCED PROPERTY WITH AT LEAST 12 MW'S AND SCATTERED 55-GALLON STEEL DRUMS (NO SIGNAGE, POSSIBLY 2805 INDIANA AVE)
4. RECREATION FIELD/TRACK (PART OF SCHOOL)
5. MATRIX (NIGHT CLUB)
6. NEW GENERATION HAIR/NAIL SHOP
7. ELECTRICAL SUBSTATION
8. CITGO (GAS STATION WITH USTS)
9. B & B PROFESSIONAL CARWASH
10. CW MYERS TRADING POST (POSSIBLE AUTO SALES)
11. UNIDENTIFIED INDUSTRIAL FACILITY (NO SIGNAGE OR INDICATION OF PROPERTY USE)
12. STORAGE WAREHOUSE (POSSIBLY FOR SALE, 116,000 SQ. FT., 722-1986)
13. WASTE MANAGEMENT (MULTIPLE BUILDINGS; OFFICE BUILDINGS ALONG STREET; POSSIBLE STORAGE/MAINTENANCE BUILDINGS).
14. ATLANTIC SCRAP & PROCESSING (LARGE FACILITY; NOT MUCH WAS VISIBLE FROM STREET; POSSIBLE COMMERCIAL BUILDING IN FRONT AVAILABLE FOR RENT).
15. UNIDENTIFIED INDUSTRIAL FACILITY (NO SIGNAGE OR INDICATION OF PROPERTY USE)
16. RAINBOW ROYSER CLARK (LARGE INDUSTRIAL-TYPE FACILITY; COULD NOT GET CLOSE ENOUGH TO PROVIDE LAND USE INFORMATION)
17. DICK KELLY TRUCK SALES
18. LIBERTY BUTCHER SHOP
19. LIBERTY STREET SPORTS BAR
20. UNIDENTIFIED/ABANDONED BUILDING
21. WINSTON-SALEM RESCUE SQUAD (POSSIBLE RE-FUELING STATION ALONG BUILDING)
22. TRADER PUBLISHING
23. SUBURBAN PROPANE (PROPANE ASTS OF VARIOUS SIZES)
24. NATIONAL WELDERS (TANKS)
25. METROMONT MATERIALS (MANUFACTURED CONCRETE PRODUCTS; STORAGE TANKS)
26. J & W BAR
27. SAM'S KITCHEN (RESTAURANT)
28. FORSYTH COUNTY GROUNDS MAINTENANCE FACILITY (NEW BUILDING)
29. CRUISE ON (AUTO REPAIR/PERFORMANCE)
30. FORSYTH COUNTY GENERAL SERVICES (NEW COMMERCIAL/OFFICE TYPE BUILDING)
31. FORSYTH COUNTY FLEET MAINTENANCE (NEW GARAGE/OFFICE BUILDING)
32. PIEDMONT PARK HOUSING DEVELOPMENT
33. ELECTRICAL SUBSTATION
34. STREETS BLOCKED OFF; ROADS REMOVED, AND ALL BUILDINGS RAZED
35. NEXT TO MOM LEARNING CENTER
36. UNIDENTIFIED LOGISTICS/WAREHOUSE TYPE BUSINESS
37. UNIDENTIFIED SMALL WAREHOUSE TYPE BUILDING
38. UNITED HOUSE OF PRAYER FOR ALL PEOPLE (CHURCH)
39. IVY APARTMENTS
40. NEW UNITY MISSIONARY BAPTIST CHURCH
41. SAINT PHILIP'S MORAVIAN CHURCH
42. WE'S CLOTHING - \$1 STORE AND STRIP MALL
43. SHOPPING CENTER

CURRENT PROPERTY OWNERS KEY #

| LETTER | TAX PARCEL ID | PROPERTY OWNER |
|--------|---------------|-----------------------------------|
| A | 6836-48-7769 | WASTE MANAGEMENT OF CAROLINAS |
| B | 6836-49-7898 | ATLANTIC SCRAP AND PROCESSING LLC |
| C | 6836-58-8215 | NORFOLK AND WESTERN RAILROAD |
| D | 6836-57-1136 | NEAL AND DESHANNA WILSON |
| E | 6836-47-6811 | KABA IICO CORP. |
| F | 6836-48-3589 | ROYSTER-CLARK AGRIBUSINESS INC. |
| G | 6836-58-9355 | VIRGINIA HOLDING CORP. |

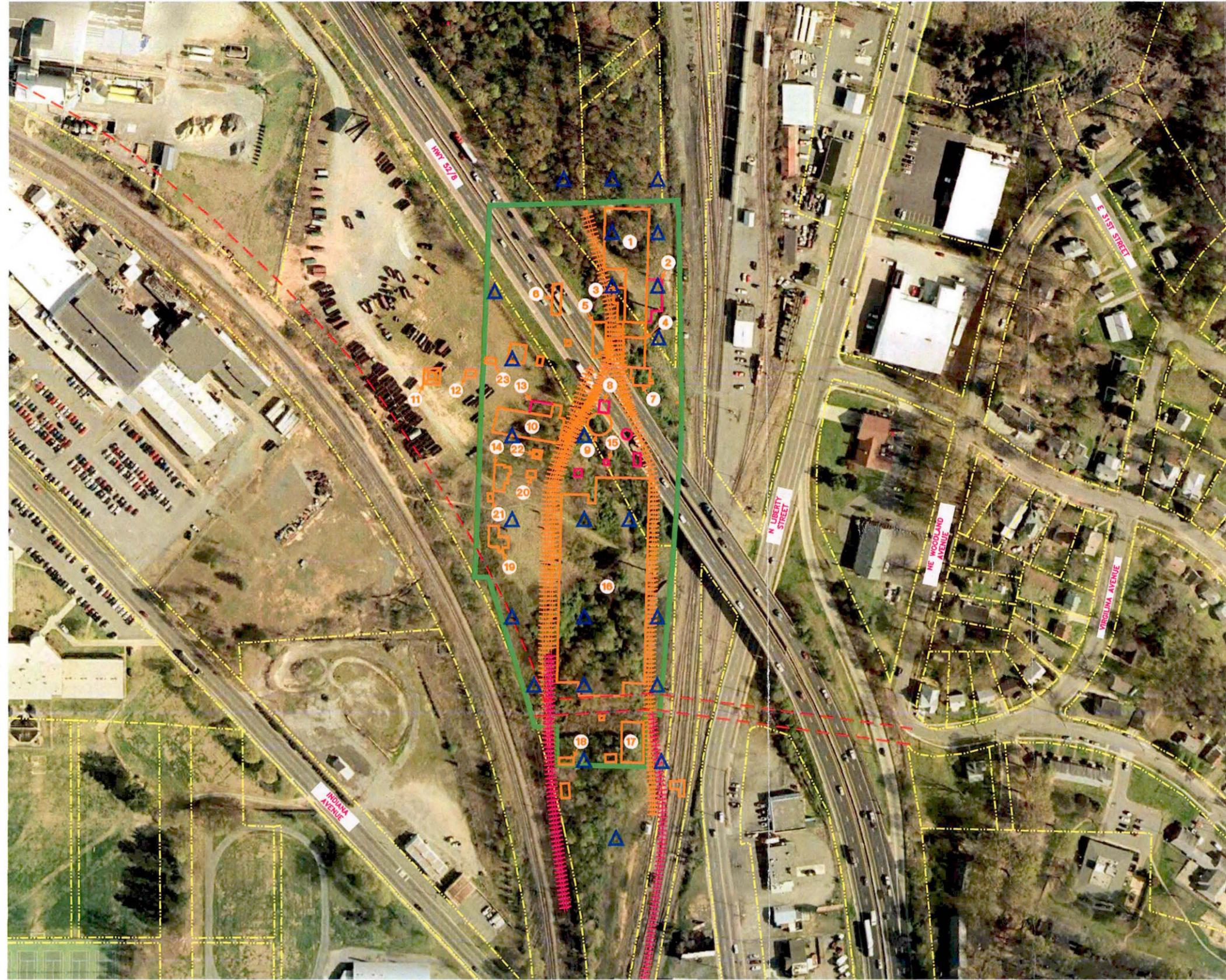


EXXONMOBIL ENVIRONMENTAL SERVICES COMPANY
 WINSTON-SALEM, FORSYTH COUNTY, NORTH CAROLINA
REMOVAL SITE EVALUATION WORK PLAN

CURRENT AND HISTORICAL SITE FEATURES



CITY: CARY DIV: GROUP 41 DB: LELIUS LD: (Ort) PIC: (Ort) PM: (Rend) TM: (Ort) LVR: (Ort) OFF: REF
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 XREFS: IMAGES: PROJECTNAME: 8573200LOW.jpg



LEGEND:

- APPROXIMATE LOCATION OF THE FORMER VCC-2 PLANT FENCE LINE (APPROXIMATE BOUNDARIES OF THE FIRST LOT OF THE ORIGINAL PLACE)
- APPROXIMATE LOCATION OF FORMER FERTILIZER PLANT FEATURES (1907)
- APPROXIMATE LOCATION OF FORMER FERTILIZER PLANT FEATURES (1917 ADDITIONS)
- - - - - APPROXIMATE LOCATION OF FORMER RAILROAD SIDINGS (1907 & 1917 PLANT FEATURES)
- - - - - CURRENT TAX PARCEL BOUNDARIES
- - - - - 30' POWER TRANSMISSION RIGHT-OF-WAY
- ▲ APPROXIMATE LOCATION OF SOIL BORING

NOTES:

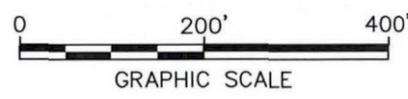
1. HISTORICAL SITE FEATURES DIGITIZED FROM 1907 & 1917 SANBORN MAPS.
2. 2002 AERIAL PHOTOGRAPH OF WINSTON - SALEM PROVIDED BY UNITED STATES GEOLOGICAL SURVEY.
3. PARCEL BOUNDARIES DIGITIZED FROM 2004 FORSYTH COUNTY COMPILATION OF RECORDED PLATS.
4. BASED ON AVAILABLE CHAIN-OF-TITLE INFORMATION, IT IS ESTIMATED THAT VCC-2 OWNED CLOSE TO 180 ACRES OF PROPERTY IN FORSYTH COUNTY. THE ONLY PORTION OF THIS PROPERTY WHOSE LOCATION COULD NOT BE READILY ASCERTAINED AND MAPPED (WITH A DEGREE OF CERTAINTY) WAS THE "FIRST LOT OF THE ORIGINAL PLACE". THE FORMER VCC-2 PLANT FENCE LINE APPROXIMATES THE BOUNDARY OF THE FIRST LOT OF THE ORIGINAL PLACE.
5. ALL LOCATIONS ARE APPROXIMATE.

HISTORICAL BUILDING KEY: #

1. ACID CHAMBER (BUILT ON AN OLDER ACID CHAMBER, AS SHOWN IN 1900 SANBORN MAP)
2. COMPRESSOR ROOM
3. BURNERS
4. BURNER ROOM (BUILT ON AN OLDER BURNER ROOM, AS SHOWN IN 1900 SANBORN MAP)
5. PYRITES HOUSE
6. NITRE HOUSE
7. BOILER ROOM
8. PUMP HOUSE
9. 100,000 GALLON RESERVOIR
10. TOBACCO STEM WAREHOUSE
11. 54,000 GALLON WATER TOWER
12. STORAGE
13. DRYER
14. OFFICE
15. OIL HOUSE
16. MILL BUILDING (GRINDING, MIXING, STORAGE AND BAGGING OF FERTILIZER)
17. BAG HOUSE
18. LIME HOUSE
19. STORAGE
20. TRANSFORMER HOUSE
21. SCALES
22. 8,000 GALLON TANK
23. CORN CRIB

FORMER STREET NAMES:

- INDIANA AVE. (FKA INVERNESS AVE.)
- LIBERTY ST. (FKA WALKERTOWN RD.)



EXXONMOBIL ENVIRONMENTAL SERVICES COMPANY
 WINSTON-SALEM, FORSYTH COUNTY, NORTH CAROLINA
REMOVAL SITE EVALUATION WORK PLAN

PROPOSED SAMPLE LOCATION MAP



VCC Mtg. 6-19-08

| <u>Name</u> | <u>Representing</u> | <u>Contact Info:</u> |
|------------------------|--|---|
| Bruce Parris | NCDWM-Superfund Section-IHSB-MRD | bruce.parris@ncmail.net 704-663-1699 |
| Aaron Griffith | NCDOT - Construction - Rural Hall office | 336-969-0430 ^{aegriffith} _{@ncdot.gov} |
| Eric Williams | NCDOT - Geotechnical Eng. Unit | 919-950-4088 |
| CYRUS PARKER | NCDOT - Geotech | 11 |
| Cheryl Youngblood | NCDOT - Geotech. | " |
| Kaitlin Marley | NCDOT - Geotech | " |
| DAVID MATTHEWSON | NCDENR(DWM-SF) | david.matthewson@ncmail.net 919/508-8466 |
| GEOFF GERMANO | ARCADIS | 919-415-2253 |
| Daniel Peterman | ARCADIS | 919-415-2289 |
| BRIAN ROBINSON | NCDOT ROADWAY DESIGN | 919-250-4016 |
| Sterling Ragland | NCDOT Roadway Design | 919-250-4016 |
| Wayne Matthewson | SAME | 336 288-7180 |
| Buddy Riggs | SAME | 919-872-2660 |
| Collin Day | NCDWM-Superfund Section-IHSB-WSRD | 336-771-5281 collin.day@ncmail.net |
| By Phone Steve Schmidt | Exxon Mobil - Proj. Mgr. | |

Progress Report
Virginia Carolina Chemical and
Carolina Ore Incident Investigations

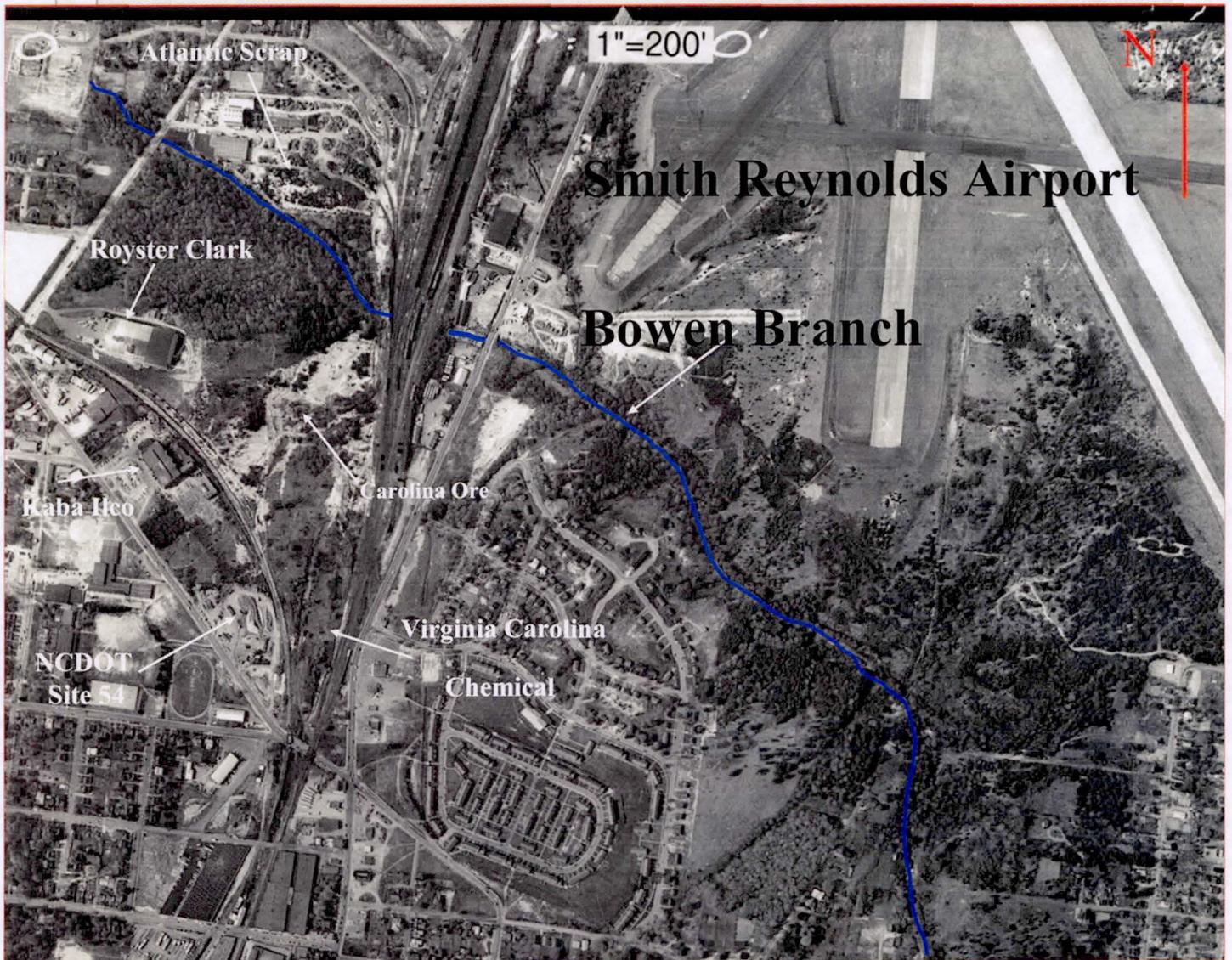
Part of the Continuing Investigation
of the Bowen Branch Contamination

by

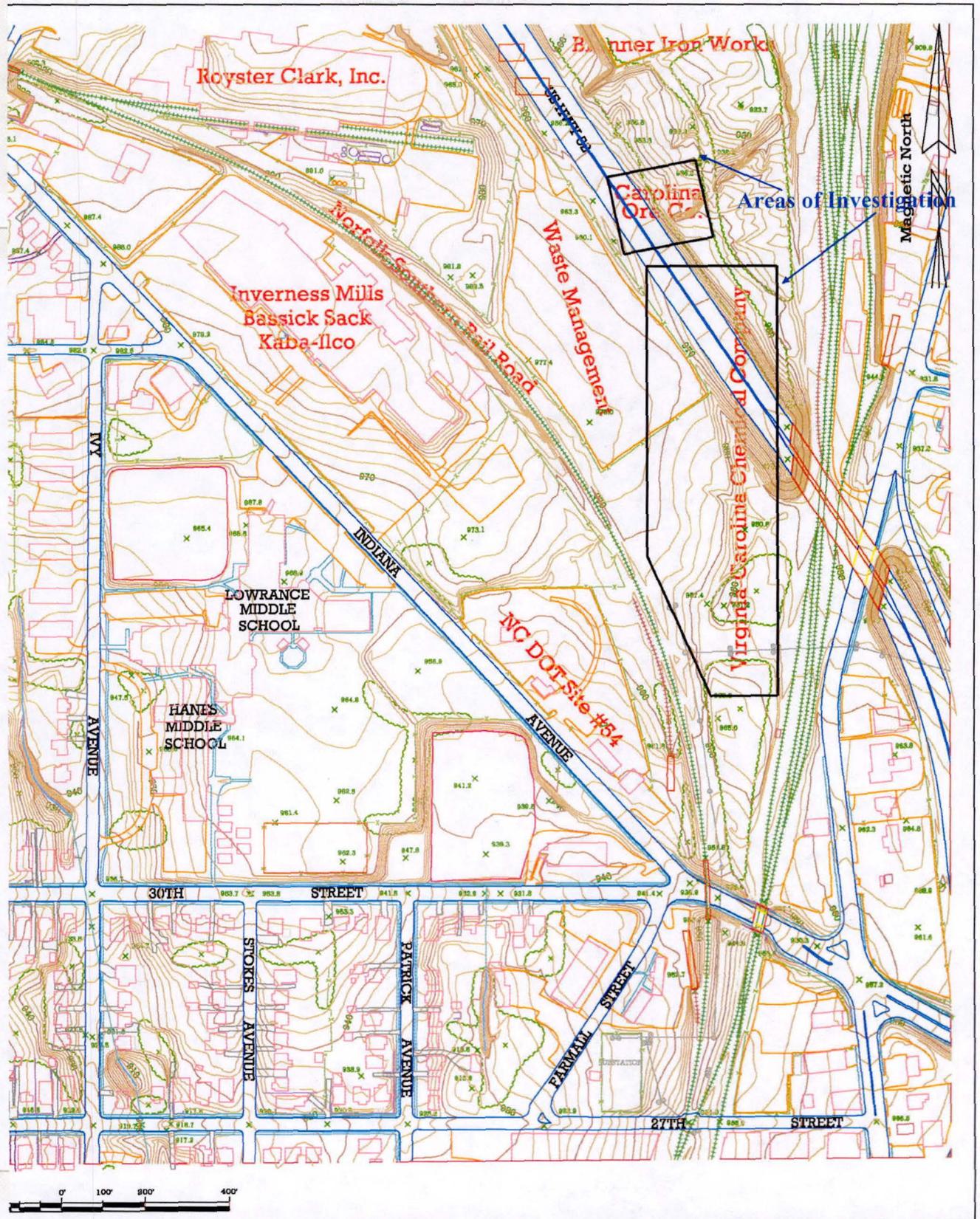
NCDENR Division of Water Quality
And Division of Waste Management

February 13, 2008

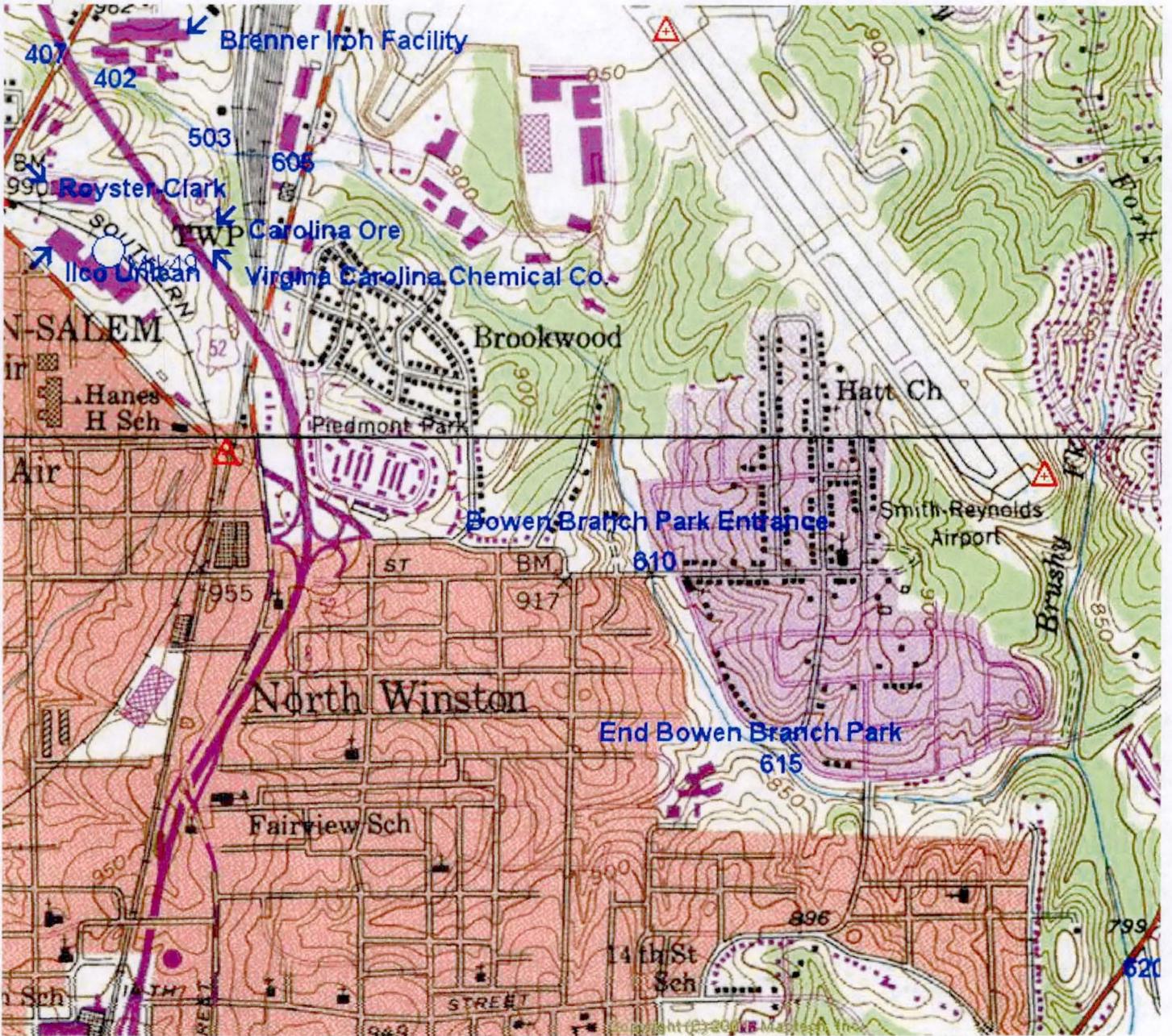
May 1960 NCDOT Aerial Photo



Current Topography Showing Locations of Sites Under Investigation



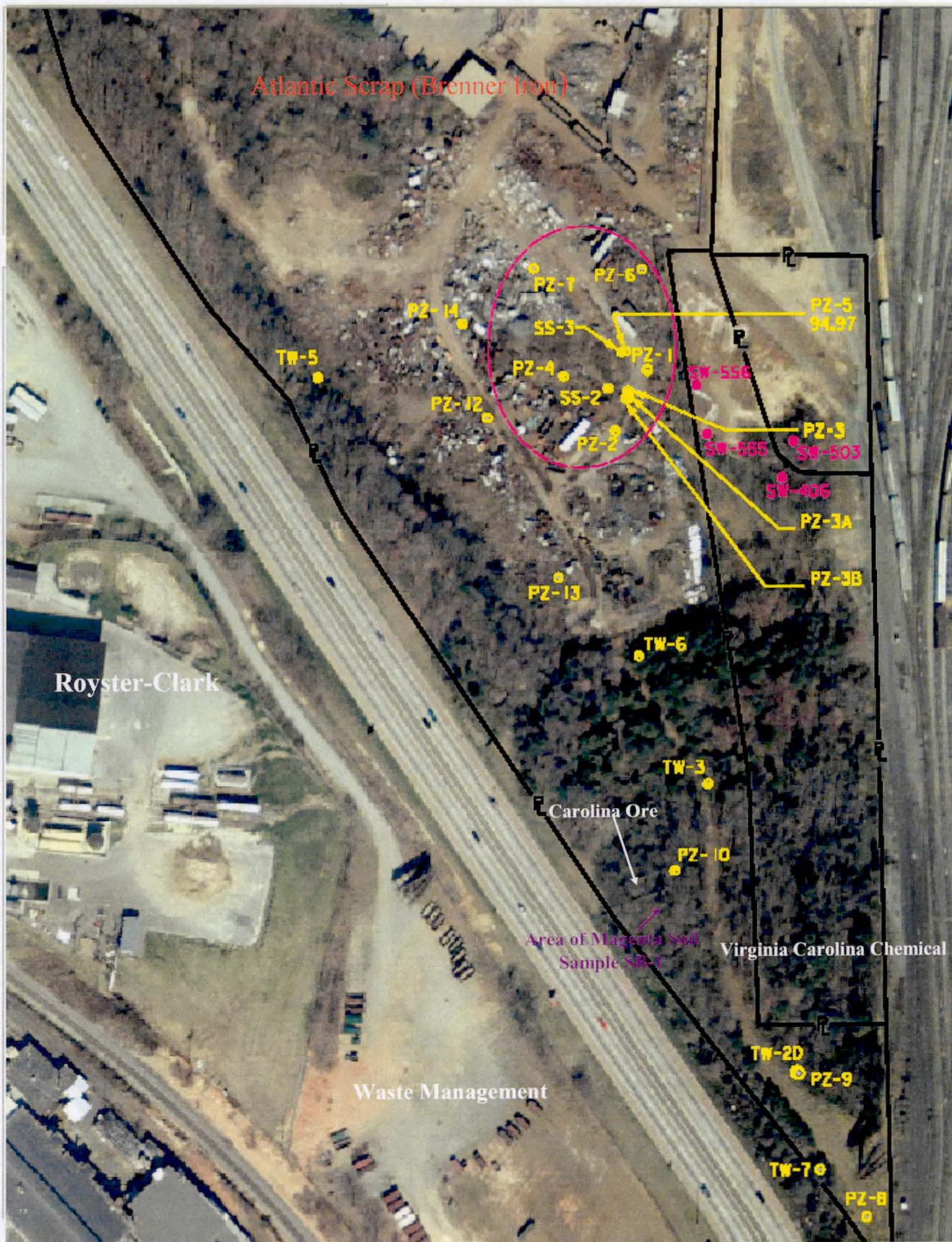
Regional Map Showing Sites Under Investigation
and
Bowen Branch Stream Sampling Points



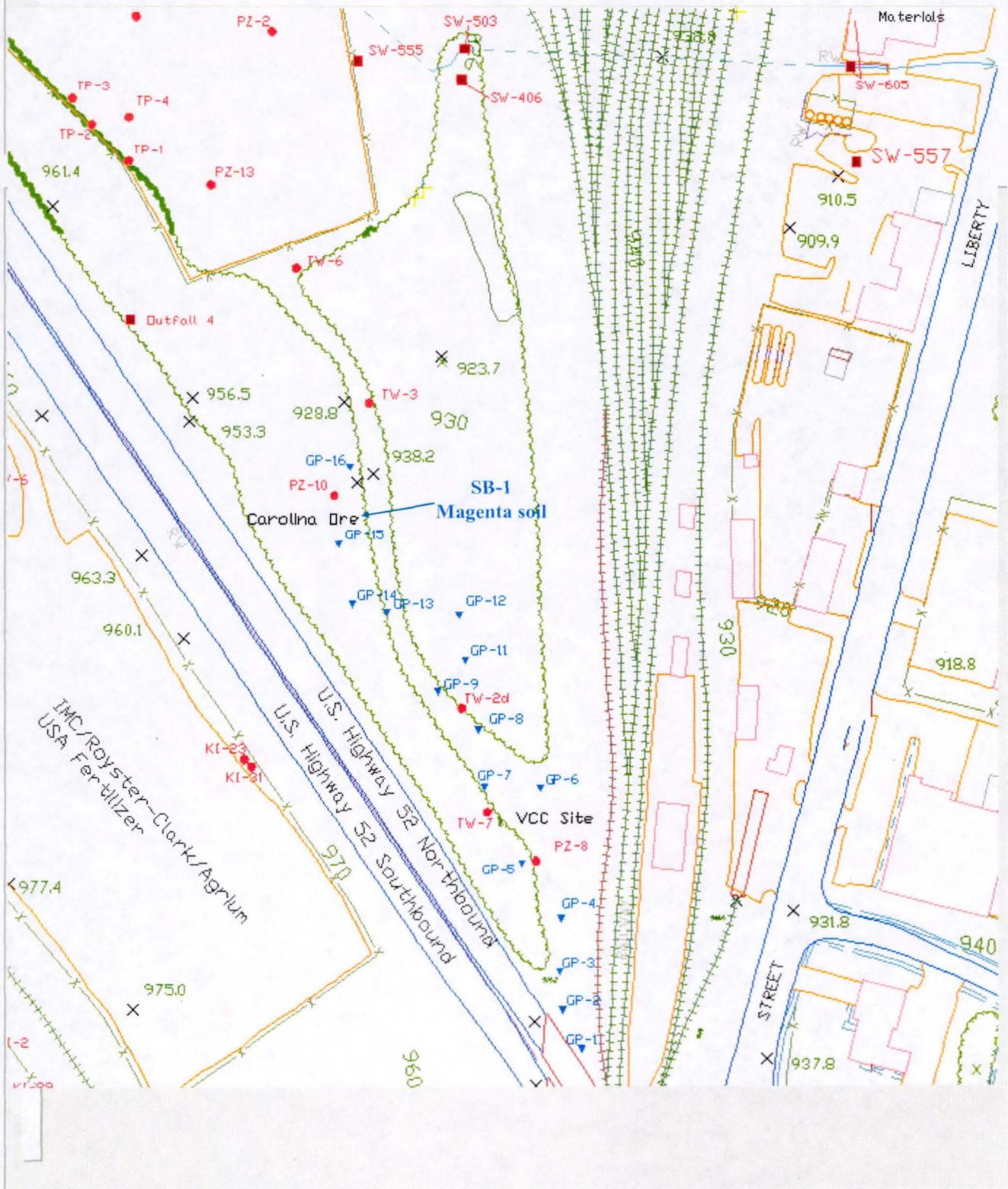
1 inch = 1119 feet



Atlantic Scrap/VCC Site Aerial Showing Locations of Piezometers and Monitoring Wells



Map of Area Showing locations of Soil Borings, Springs, Piezometers, and Monitoring Wells



**Evidences of Impact to Environment by Activities Conducted at the
Virginia Carolina Chemical/Carolina Ore Sites**

1. Depressed Soil pH
2. Magenta Colored Soil and Elevated levels of arsenic and lead in soil.
3. Elevated Lead in Groundwater

Soil pH data for Selected Samples

| <u>Sample ID</u> | <u>Depth (ft)</u> | <u>pH</u> |
|------------------|-------------------|-----------|
| SB-1-1 | 1 | 4.13 |
| SB-1-9 | 9 | 4.29 |
| SB-1-15 | 15 | 4.38 |
| PZ-9-24 | 24 | 3.88 |
| GP-3-6.5 | 6.5 | 3.63 |
| GP-5-9 | 9 | 3.9 |
| GP-7-2 | 2 | 3.85 |
| GP-6-1.5 | 1.5 | 3.9 |
| GP-8-10 | 10 | 4.09 |
| GP10-8 | 8 | 4.08 |
| GP-4-2 | 2 | 3.31 |
| GP-3-2.5 | 2.5 | 3.5 |

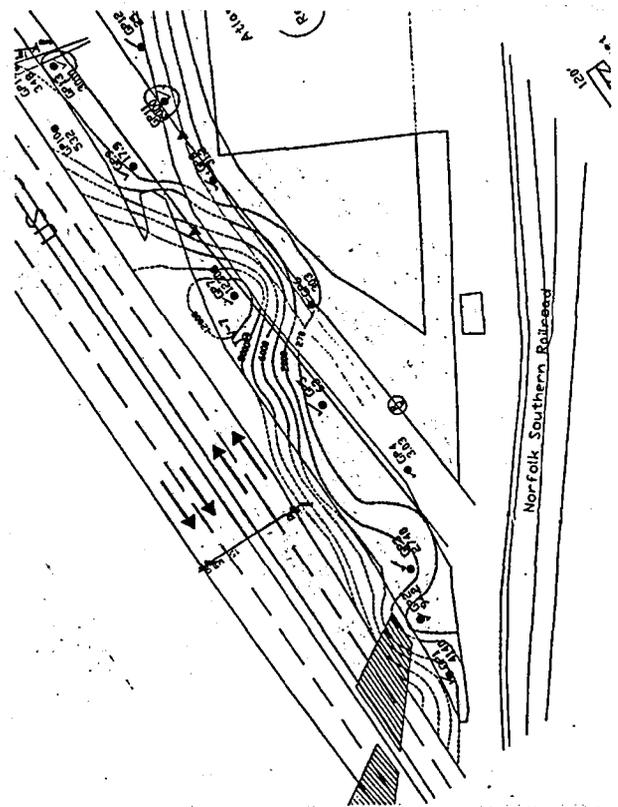
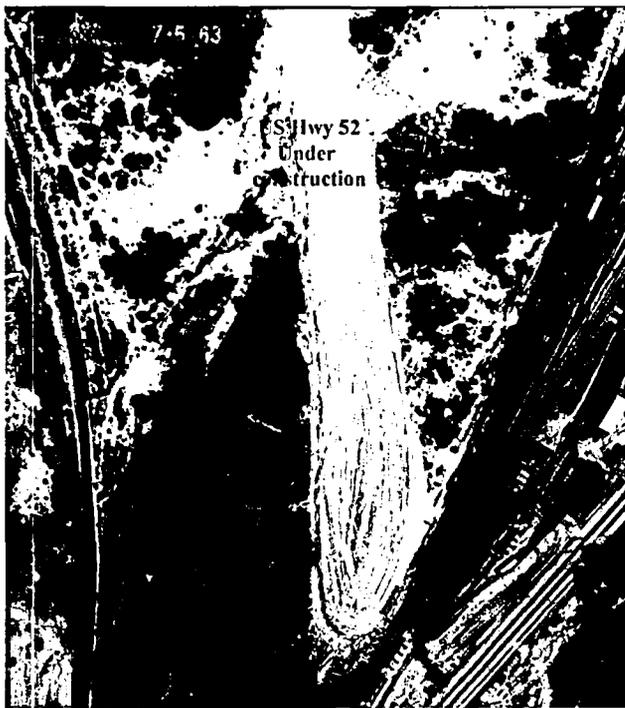
Areas of Magenta-Colored Soil Found During NCDOT Soil Boring Investigation Just South of Former Carolina Ore Facility

Soil Sample Number SB-1
Magenta Soil Sample Results

Arsenic-877 mg/kg
Lead-6,580 mg/kg
Cadmium-2.65 mg/kg
Chromium-7.80 mg/kg
Mercury-5.00 mg/kg
Silver-30.06 mg/kg
Selenium 7.94 mg/kg

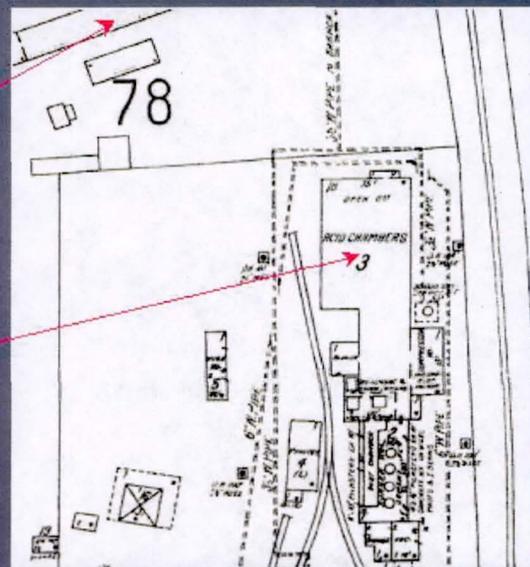


1963 Aerial Photograph and Lead Contours for 2005 Soil Samples



Same Location as Previous Slide prior to US Hwy 52 Construction

**May 1960 Aerial
Photography/1917 Sanborn Map**



| Monitoring Point | DATE | pH | Specific Conductance (µMHOS) | Chloride (mg/L) | Fluoride (mg/L) | Manganese, total (mg/L) | NH3 (mg/L) | NO3-NO2 as N (mg/L) | Sulfate (mg/L) | Zinc, total (mg/L) | Arsenic (µg/L) | Lead (µg/L) | Cadmium (µg/L) | PCE (µg/L) | TCE (µg/L) |
|--|---|------|------------------------------|-----------------|-----------------|-------------------------|-----------------|---------------------|----------------|--------------------|----------------|-------------|----------------|------------|------------|
| Selected Monitoring Well Data Showing Impact from Rogster-Clark, VCC-Carolina Ore and Potentially Kaba-Ilico Unican Sites | | | | | | | | | | | | | | | |
| PZ-10 | 8/24/2005 | 5.15 | 326 | 46 | ND | 3.79 | lab lost sample | 14.43 | 45 | 12 | 1.0 | 9 | 36 | 1000 | 9.7 |
| PZ-10 | 10/13/2005 | 4.87 | 255 | NM | NM | NM | 0.40 | 14 | NM | NM | NM | NM | NM | 900 | 8.9 |
| TV-2D | 10/13/2005 | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | 10 | 3.5 |
| TV-2D | 4/11/2006 | 4.02 | 600 | NM | NM | NM | NM | NM | NM | 2.8 | ND | 670 | 8.5 | NM | NM |
| TV-7 | 8/25/2005 | 4.03 | 859 | 16 | 0.26 | 19.60 | 1.0 | 16 | 527 | 17.27 | 6.0 | 2,250 | 59 | 250 | 130 |
| Spring Data for Discharge Points for the Rogster-Clark, VCC-Carolina Ore and Potentially Kaba-Ilico Unican Sites | | | | | | | | | | | | | | | |
| SV-555 | 1/11/2005 | 8.42 | 2450 | 564 | 8.00 | 1.09 | 200 | 3.6 | 628 | 1.45 | 6 | 88 | ND | NM | NM |
| SV-555 | 2/22/2005 | 8.5 | 3200 | NM | NM | NM | 200 | 14 | 1.0 | NM | NM | NM | NM | ND | ND |
| SV-555 | 7/20/2005 | 8.38 | 2892 | 404 | 6.27 | 0.77 | 110 | 2.8 | 530 | 0.16 | 3 | 25 | ND | NM(1) | NM |
| SV-406 | 5/3/2005 | 5.8 | 2200 | 269 | 0.57 | 4.38 | 12 | 38 | 607 | 2.07 | 12 | 14 | NM | 2.8 | 0.89 |
| SV-557 | 6/14/2005 | 4.95 | 487 | 34 | 0.34 | 2.37 | ND | 15 | 117 | NM | | 86 | ND | 81 | 2.7 |
| SV-557 | 8/16/2005 | 4.80 | 298 | 33 | 0.48 | 1.84 | ND | 16 | 111 | 0.89 | 0.1 | 96 | ND | 80 | 3.1 |
| SV-557 | 4/11/2006 | 4.64 | 477 | 29 | 0.64 | 1.64 | NM | 14.85 | 120 | 0.82 | ND | 78 | ND | NM | NM |
| SV-557 | 10/11/2007 | 4.7 | NM | 38 | 0.33 | 1.73 | ND | 14 | 108 | 0.91 | ND | 99 | 5 | 92 | 2.5 |
| (1) | Previous sample of collected indicated no VOC's likely due to elevated pH and reducing conditions | | | | | | | | | | | | | | |

Subject: Re: VCC/Bowen Branch Conference Call

From: Campbell.Richard@epamail.epa.gov

Date: Wed, 13 Feb 2008 12:04:53 -0500

To: Collin.Day@ncmail.net, David.Mattison@ncmail.net, "Culpepper, Linda" <linda.culpepper@ncmail.net>, cfparker@dot.state.nc.us

CC: mallery.ken@epa.gov

Collin - we need you to send the VCC data that you have as soon as possible. Otherwise, we'll have very little to talk about tomorrow morning.

Also, Cyrus, if there is anything you can forward that describes the DOT plans in the Bowen Branch area, that would be helpful.

Thanks,
Rich Campbell, PE
Section Chief, Superfund Remedial Program
US EPA Region 4
Office: (404) 562-8825
Cell: (404) 769-2611

Richard
Campbell/R4/USEP
A/US

02/12/2008 03:59
PM

To
Linda Culpepper, David Mattison,
Collin.Day@ncmail.net
CC
mallery.ken@epa.gov
Subject
VCC/Bowen Branch Conference Call

Here is the number/code for our conference call Thursday morning at 8:30.

Call in #: 1-866-299-3188

Re: VCC/Bowen Branch Conference Call

Conference Code: 404-562-8825

Rich Campbell, PE
Section Chief, Superfund Remedial Program
US EPA Region 4
Office: (404) 562-8825
Cell: (404) 769-2611

Progress Report
Virginia Carolina Chemical and
Carolina Ore Incident Investigations

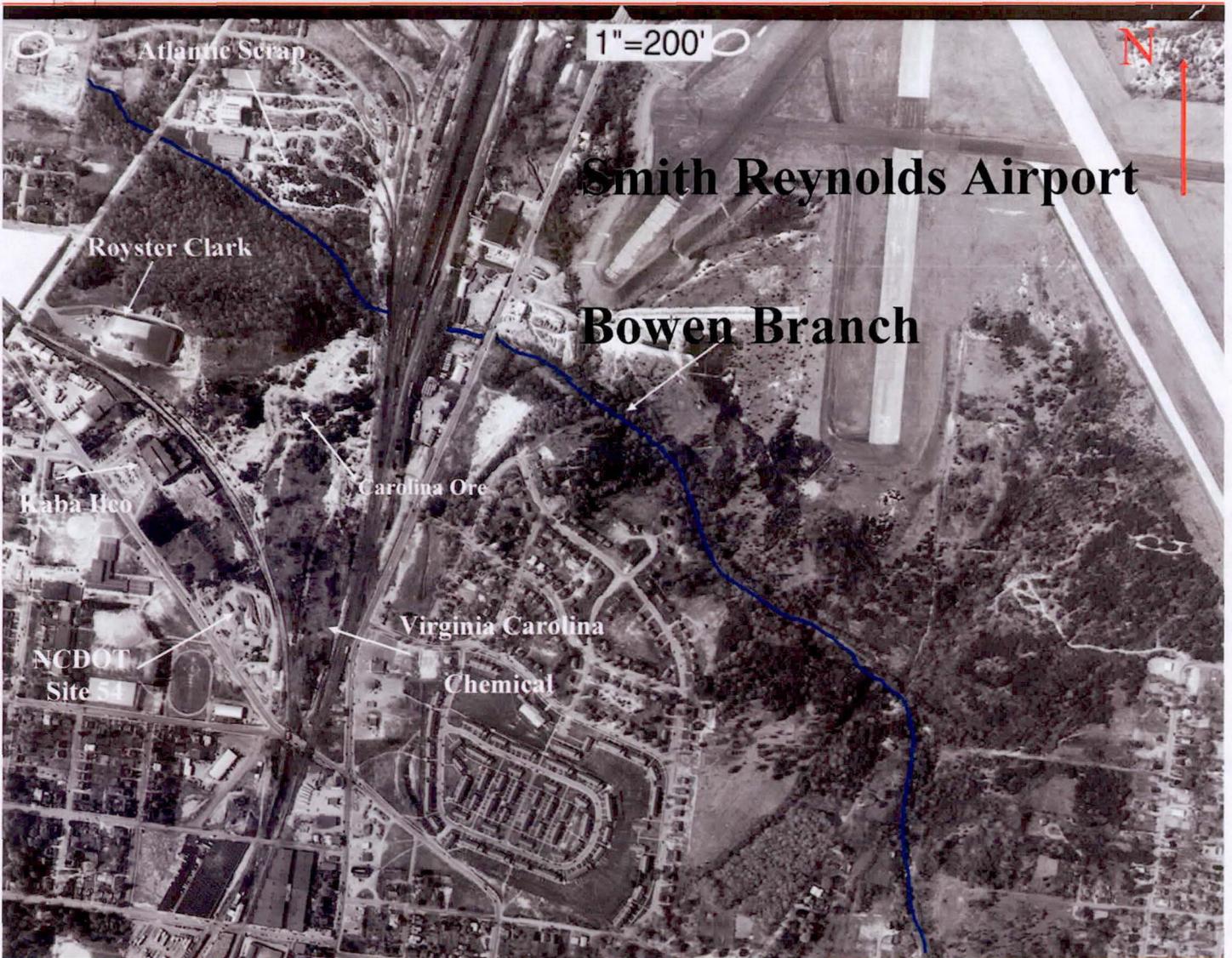
Part of the Continuing Investigation
of the Bowen Branch Contamination

by

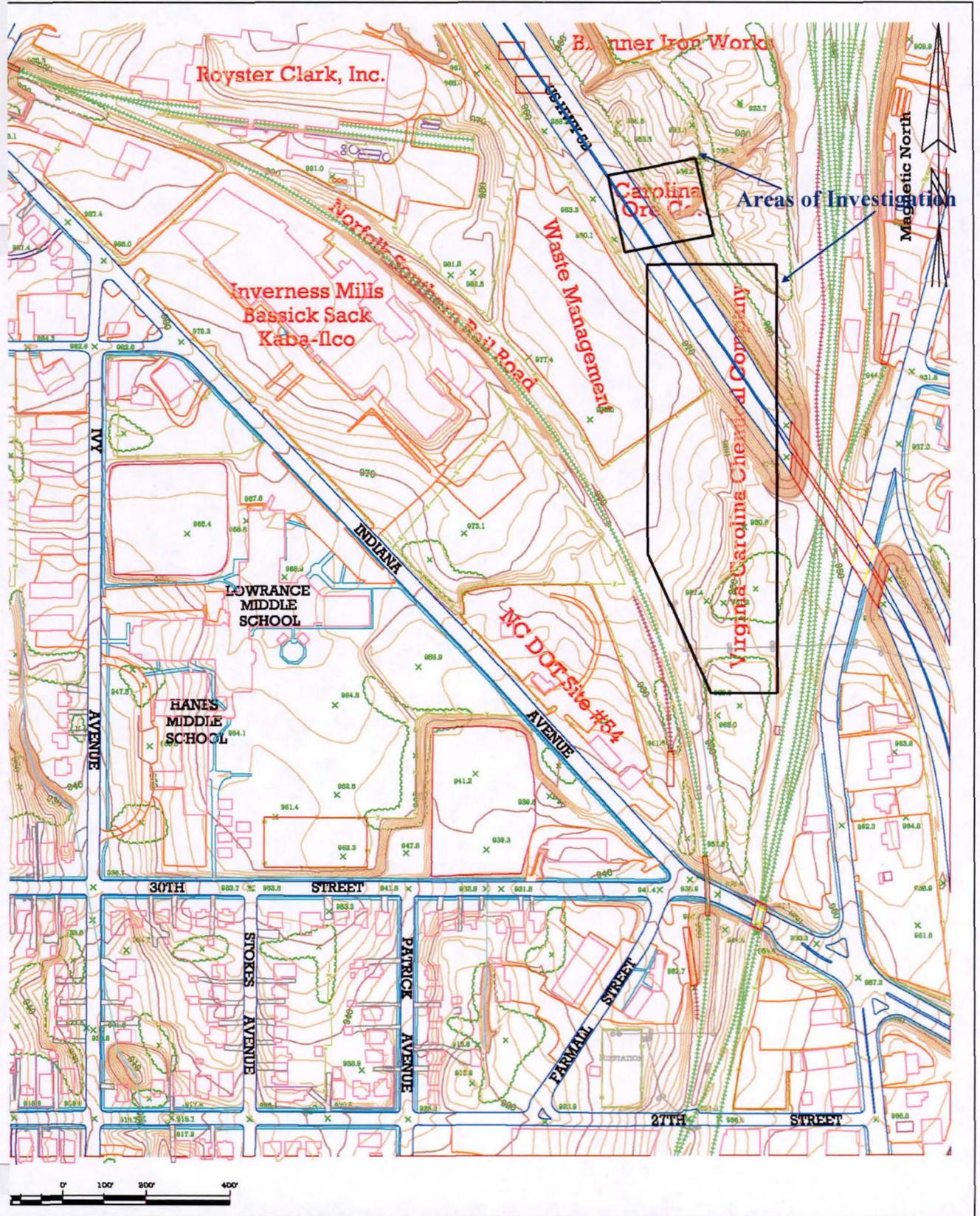
NCDENR Division of Water Quality
And Division of Waste Management

February 12, 2008

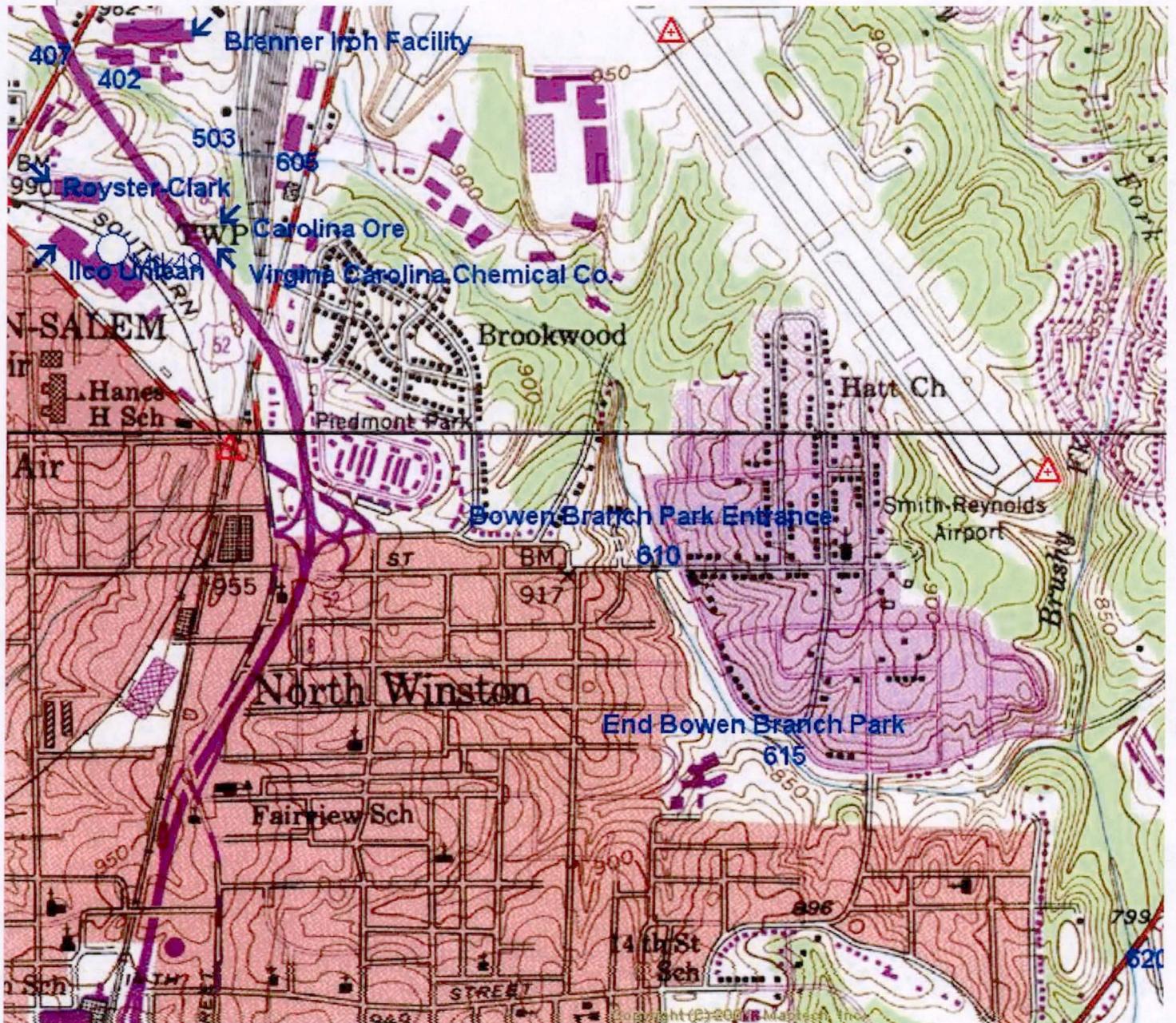
May 1960 NCDOT Aerial Photo



Current Topography Showing Locations of Sites Under Investigation



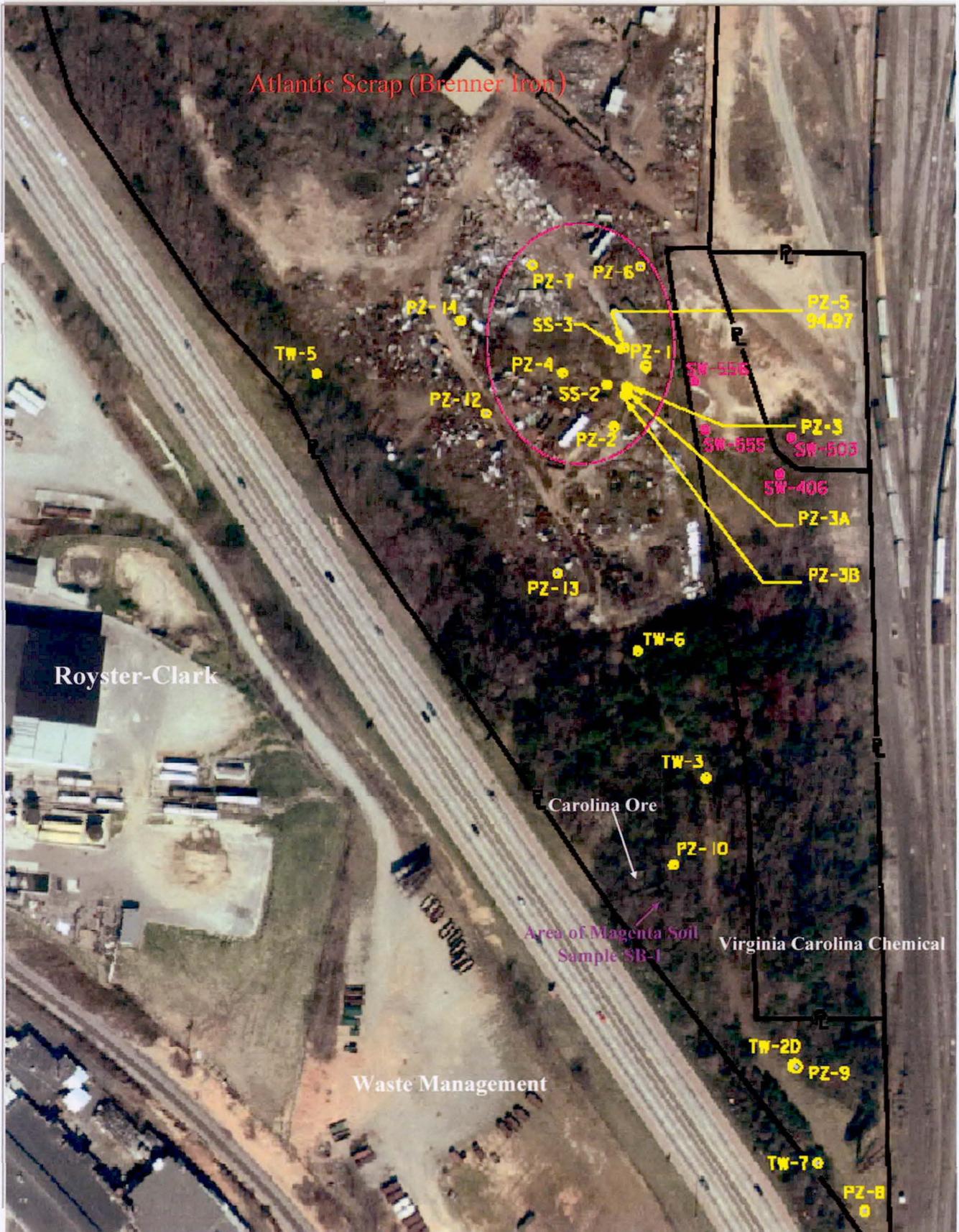
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and
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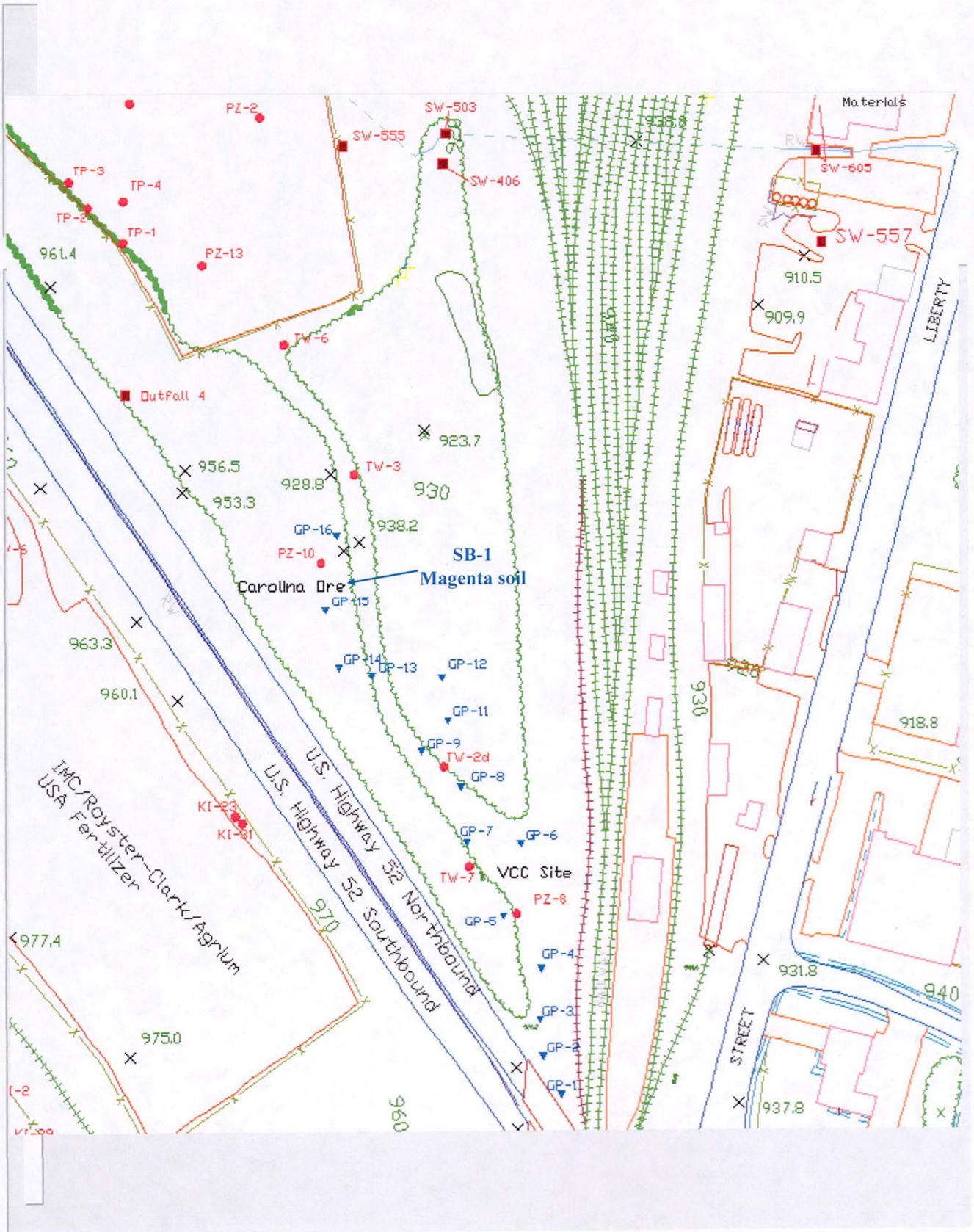


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Atlantic Scrap/VCC Site Aerial Showing Locations of Piezometers and Monitoring Wells





**Evidences of Impact to Environment by Activities Conducted at the
Virginia Carolina Chemical/Carolina Ore Sites**

1. Depressed Soil pH
2. Magenta Colored Soil with Elevated levels of arsenic and lead
3. Elevated Lead in Groundwater
4. Elevated Lead Levels in Sediment

Soil pH data for Selected Samples

| <u>Sample ID</u> | <u>Depth (ft)</u> | <u>pH</u> |
|------------------|-------------------|-----------|
| SB-1-1 | 1 | 4.13 |
| SB-1-9 | 9 | 4.29 |
| SB-1-15 | 15 | 4.38 |
| PZ-9-24 | 24 | 3.88 |
| GP-3-6.5 | 6.5 | 3.63 |
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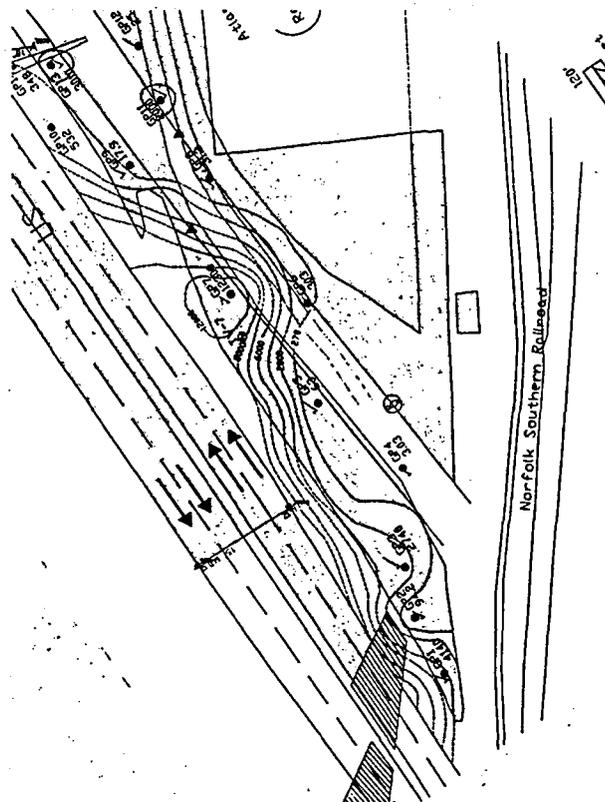
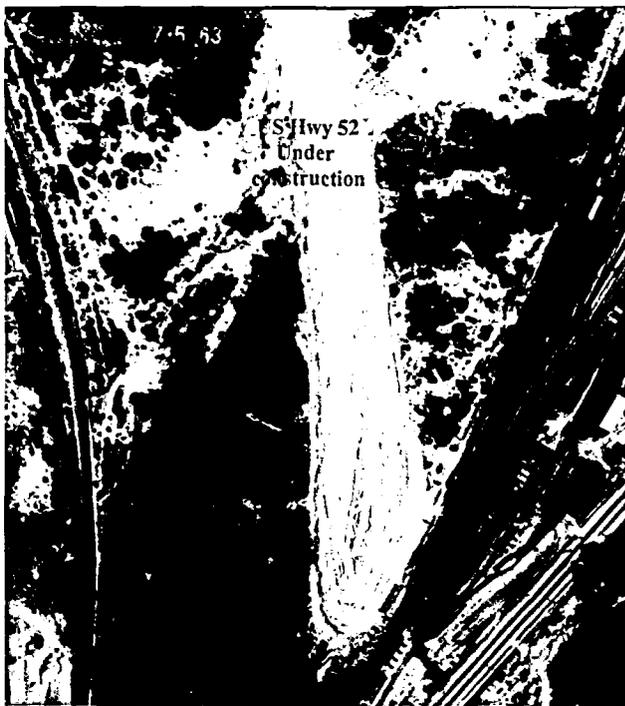
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Soil Sample Number SB-1
Magenta Soil Sample Results

Arsenic-877 mg/kg
Lead-6,580 mg/kg
Cadmium-2.65 mg/kg
Chromium-7.80 mg/kg
Mercury-5.00 mg/kg
Silver-30.06 mg/kg
Selenium 7.94 mg/kg



1963 Aerial Photograph and 2005 Soil Sampling Results for Lead



Monitoring Wells and Springs Indicating Potential Impacted by VCC/Carolina Ore Contamination

| Monitoring Point | DATE | pH | Specific Conductance (µMHOS) | Chloride (mg/L) | Fluoride (mg/L) | Manganese, total (mg/L) | NH3 (mg/L) | NO3+NO2 as N (mg/L) | Phosphorus, total (mg/L) | Sulfate (mg/L) | Zinc, total (mg/L) | Arsenic (µg/L) | Lead (µg/L) | Cadmium (µg/L) | PCE (µg/L) | TCE (µg/L) | 1,1-DCE (µg/L) |
|------------------|------------|------|------------------------------|-----------------|-----------------|-------------------------|-----------------|---------------------|--------------------------|----------------|--------------------|----------------|-------------|----------------|------------|------------|----------------|
| PZ-10 | 8/24/2005 | 5.15 | 326 | 46 | ND | 3.79 | lab lost sample | 14.43 | lab lost sample | 45 | 12 | 1.0 | 9 | 36 | 1000 | 9.7 | 1.5 |
| PZ-10 | 10/13/2005 | 4.87 | 255 | NM | NM | NM | 0.40 | 14 | 0.25 | NM | NM | NM | NM | NM | 900 | 8.9 | 1.5 |
| TW-2D | 10/13/2005 | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | 10 | 3.5 | 16 |
| TW-2D | 4/11/2006 | 4.02 | 600 | NM | NM | NM | NM | NM | NM | NM | 2.8 | ND | 670 | 8.5 | NM | NM | NM |
| TW-7 | 8/25/2005 | 4.03 | 859 | 16 | 0.26 | 19.60 | 1.0 | 1.6 | 0.3 | 527 | 17.27 | 6.0 | 2,250 | 59 | 250 | 130 | 120 |
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| SW-555 | 2/22/2005 | 8.5 | 3200 | NM | NM | NM | 200 | 1.4 | NM | 1.0 | NM | NM | NM | NM | ND | ND | ND |
| SW-555 | 7/20/2005 | 8.38 | 2892 | 404 | 6.27 | 0.77 | 110 | 2.8 | 0.03 | 530 | 0.16 | 3 | 25 | ND | NM(1) | NM | NM |
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| SW-557 | 6/14/2005 | 4.95 | 487 | 34 | 0.34 | 2.37 | ND | 15 | 0.02 | 117 | NM | | 86 | ND | 81 | 2.7 | ND |
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| SW-557 | 4/11/2006 | 4.64 | 477 | 29 | 0.64 | 1.64 | NM | 14.85 | NM | 120 | 0.82 | ND | 78 | ND | NM | NM | NM |
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Page 1

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