

**Groundwater Remedial Action Plan Addendum:
1-1, Dichloroethene
Former Flint Ink
515 South Turner Avenue
Charlotte, North Carolina
NCD 083 6778 631**

Prepared For:

**Flint Group US LLC
14909 N. Beck Road
Plymouth, Michigan 48170**

August 4, 2016

**AECOM
Project No. 60408261**

IHSB SITE NAME Former Sinclair & Valentine Site (NCD 083 6778 6311)

DATE & NAME OF DOCUMENT August 4, 2016; Groundwater Remedial Action Plan Addendum: 1-1, DCE

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."

Flint Group US LLC

Name of Remediating Party

Rony S. Muawad

Signature of Remediating Party

Aug. 8. 2016

Date

NOTARIZATION

Michigan (Enter State)

WAYNE COUNTY

I, MAUREEN A. BRACEY, a Notary Public of said County and State, do hereby certify that Rony S. Muawad did personally appear and sign before me this day, produced proper identification in the form of Driver 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.

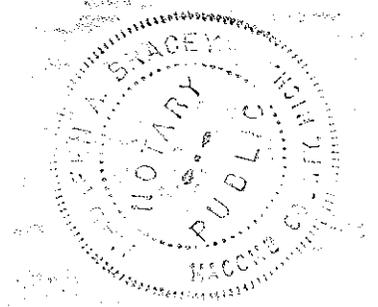
WITNESS my hand and official seal this 8 day of AUGUST, 2016.

Maureen A. Bracey
Notary Public (signature)

(OFFICIAL SEAL)

My commission expires: 2/20/2020

Maureen A. Bracey
Notary Public, Macomb County
State of Michigan
Acting in WAYNE County
My commission expires Feb 20, 2020



IHSB SITE NAME Former Sinclair's Veterinary Site (NEED 083 6778 6311)
DATE & NAME OF DOCUMENT Aug 4, 2016 Remedial Action Plan Addendum 1-1 DCE
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.

Robert MacWilliams
Name of Registered Site Manager

[Signature]
Signature of Registered Site Manager

8/8/2016
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."

Robert MacWilliams
Name of Registered Site Manager

[Signature]
Signature of Registered Site Manager

8/8/2016
Date

NOTARIZATION

NORTH CAROLINA (Enter State)

MECKLENBURG COUNTY

I, YOLANDA K BELL, a Notary Public of said County and State, do hereby certify that ROBERT MACWILLIAMS 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 8th day of August, 2016.
Yolanda K Bell
Notary Public (signature)
My commission expires: 11/25/17



TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 GENERAL PROPERTY DESCRIPTION	2
3.0 HISTORY AND GROUNDWATER ANALYTICAL RESULTS	3
3.1 Groundwater Data	3
4.0 NO ACTION REMEDY FOR 1,1-DCE	5
4.1 Receptor Survey	5
4.2 Ordinances	5
4.3 Notification	6
5.0 CONCLUSIONS	7
6.0 REFERENCES	8

TABLE

Table 1 – Property Descriptions from Receptor Survey

FIGURES

Figure 1 – Site Location Map

Figure 2 – 1,1-DCE Concentrations vs. Time (MW-1 and MW-6 only)

APPENDICES

Appendix A - *The Groundwater Sampling and Receptor Survey Update Letter Report* dated July 11, 2014

Appendix B - Ordinances

Appendix C - Notifications

1.0 INTRODUCTION

AECOM, on behalf of Flint Group US LLC (FGL) is pleased to provide this Groundwater Remedial Action Plan Addendum (Groundwater RAP Addendum) for the former FGL facility located at 515 South Turner Avenue in Charlotte, North Carolina (herein referred to as the Site or Subject Property). The Groundwater Addendum has been prepared to document changes to the groundwater portion of the Remedial Action Plan (RAP), dated February 4, 2008, and includes the following:

- A summary of groundwater quality data specific to 1,1-Dichloroethene (1,1-DCE) as sampled at the site from March 2008 to March 2014;
- Proposed change from Groundwater Monitoring Natural Attenuation remedy to “No Action Remedy” based on the April 1, 2013, change by North Carolina Environmental Management Commission of the 15ANCAC2L.0202 (2L) Standard for 1,1-DCE from 7.0 micrograms per liter (ug/L) to 350 ug/L; and,
- Supporting documentation that 1,1-DCE affected groundwater is not, nor will not, be used for potable purposes and therefore the federal MCL (maximum contaminant level) is not applicable.

The component requirements for a Remedial Action Plan pursuant to the Registered Environmental Consultant (REC) Rules (15A NCAC 13C) are documented within the February 4, 2008, *RAP*. For document brevity purposes, duplicate component sections (geology, hydrogeology, topography, and surrounding properties) have not been included within this Groundwater RAP Addendum.

2.0 GENERAL PROPERTY DESCRIPTION

The Site/Subject Property is located at 515 South Turner Avenue in Charlotte, Mecklenburg County, North Carolina and consists of approximately 1.8 acres. One (1) acre of which is developed with a building which measures approximately 12,500 square feet. The building is located on the southwest portion of the Site. The remainder of the Site is undeveloped woodland. A fence surrounds a portion of the developed property. **Figure 1** shows Site details.

3.0 HISTORY AND GROUNDWATER ANALYTICAL RESULTS

A monitored natural attenuation (MNA) remedy was selected in the RAP as the groundwater corrective action to comply with the requirements of 15ANCAC13C.0306L. As stated within the RAP, one of the contaminants of concern (COC) identified in groundwater was 1,1-DCE which had been detected previously in monitoring wells MW-1 and MW-6 at concentrations above the former 2L Standard of 7 ug/L. The only other monitoring well to contain 1,1-DCE above the 2L was abandoned monitoring well TW-02, located in the vicinity of monitoring well MW-1.

3.1 GROUNDWATER DATA

Since submittal of the *RAP* in February 2008, three monitoring wells have been installed.

- Monitoring well MW-7 was installed to delineate potential 1,1-DCE impacts migrating offsite.
- Monitoring well MW-8 was installed to evaluate soil remedial options within Former Drainage Ditch B.
- Monitoring well MW-2A was installed to replace monitoring well MW-2. MW-2 was destroyed by City of Charlotte sidewalk construction activities along Turner Avenue.

Monitoring well locations are shown within **Figure 1**.

A total of twelve (12) groundwater sampling events have been performed at the site by URS (now AECOM) personnel since the submittal of the February 2008 *RAP*. Within the 12 events, a groundwater sample has been collected from monitoring wells MW-1 and MW-6 and analyzed for 1,1-DCE a total of 9 and 8 times, respectively. The dates of the sampling events and the submitted report to NCDEQ which contains the analytical laboratory are outlined below.

2008

- March 20, 2008 - monitoring wells MW-1 through MW-6 and MW-1D; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report June 2008*, dated June 16, 2008;
- July 2, 2008 - monitoring wells MW-1 through MW-6 and MW-1D;
- July 24, 2008 - monitoring well MW-7 was installed and sampled for the purpose of evaluating potential off-site migration of 1,1-DCE, downgradient of monitoring well MW-6 at the closest point of exposure (POE).
 - *Groundwater Monitored Natural Attenuation Remedial Action Progress Report September 2008*, dated September 26, 2008;
- November 5, 2008 - monitoring wells MW-1 through MW-7 and MW-1D; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report January 2009* dated January 22, 2009;

2009

- February 3, 2009 - monitoring wells MW-1 through MW-7 and MW-1D; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report February 2009*, dated April 6, 2009;

- September 22, 2009 - monitoring wells MW-1, MW-3 through MW-7 and MW-1D; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report September 2009*, dated October 26, 2009;
 - Monitoring well MW-2 was permanently covered by City of Charlotte personnel during the installation of a new sidewalk along the east side of Turner Avenue. As a result, the well was unable to be sampled.

2010

- September 15, 2010 - monitoring wells MW-1, MW-3 through MW-7 and MW-1D; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report September 2010*, dated October 29, 2010;

2011

- October 27, 2011 - monitoring wells MW-1, MW-3 through MW-7 and MW-1D;
- November 17, 2011 - monitoring wells MW-2A and MW-8 were installed. Monitoring well MW-2A was installed to replace former monitoring well MW-2. Monitoring well MW-8 was installed in the vicinity of soil impacts identified in the Former Drainage Ditch B Area. Groundwater samples were collected from monitoring well MW-8 for 1,1-DCE analysis.
- December 14, 2011 - monitoring well MW-2A;
 - *Groundwater Monitored Natural Attenuation Remedial Action Progress Report October – December 2011/July 2012*, dated August 29, 2012;

2012

- October 29, 2012 - monitoring wells MW-1 through MW-8 , MW-2A and MW-1D; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report October 2012*, dated December 7, 2012;

2014

- March 5, 2014 - monitoring wells MW-1, MW-2A, MW-7 and MW-8; *Groundwater Sampling and Receptor Survey Update Letter Report* dated July 11, 2014.

Graphed groundwater analytical data from monitoring wells MW-1 and MW-6 is shown within **Figure 2**. The graph shows all 1,1-DCE concentrations collected from both monitoring wells. The only other 1,1-DCE concentrations detected at the Site include the following:

- Monitoring well MW-01D, 0.93J ug/L, September 11, 2007; and
- Monitoring well TW-02, 79 ug/L, April 17, 2001.

Monitoring wells MW-2, MW-2A, MW-3, MW-4, MW-5, MW-7 and MW-8 have not contained concentrations of 1,1-DCE above the laboratory reporting limit. As indicated on **Figure 2**, 1,1-DCE has never been detected in monitoring wells MW-1 or MW-6 above 350 ug/L and concentrations of 1,1-DCE are decreasing. Also, groundwater plume maps for 1,1-DCE, generated from the sampling events completed from March 20, 2008, to March 5, 2014, indicate the plume area has continually reduced in size and has remained within onsite monitoring wells.

4.0 NO ACTION REMEDY FOR 1,1-DCE

As documented in the REC Implementation Guidance, dated October 2015, the 2L standard (permanent or interim) for contaminants is the groundwater remediation goals. If groundwater is or may be used for potable purposes, the remediation goal would be the lower of the 2L or maximum contaminant level (MCL).

When the *RAP* was submitted in February 2008, 1,1-DCE was considered to be a COC in groundwater based on the exceedance of the 2L standard (7 ug/L). On April 1, 2013, the 2L standard for 1,1-DCE was increased to 350 ug/L. Therefore, 1,1-DCE concentrations in groundwater are below the groundwater remediation goal for the site provided groundwater is not used for potable purposes in any area where the groundwater contaminant plume is currently located, or may be located in the future. URS (now AECOM) personnel performed additional activities and document review to demonstrate that groundwater is not used for potable purposes in any area where the 1,1-DCE groundwater contaminant plume is currently located, or may be located in the future, and that sufficient procedures are in place to prevent new water supply wells from being installed in the vicinity of a known contaminated site.

4.1 RECEPTOR SURVEY

In order to identify the potential existence of springs, surface water springs and/or surface water intakes that could be used as sources of potable water, as well as identify private and/or public drinking water wells located within 0.5 mile radius of the Site, URS (now AECOM) performed a receptor survey for the Site on March 21, 2014. No springs, surface water springs, surface water intakes, public or private water supply wells were observed during the receptor/water well survey within a 0.5 mile radius of the Site. Therefore, the presence of 1,1-DCE in the surficial aquifer at the site does not present a potable water exposure risk within a 0.5 mile radius of the site.

Results of the receptor/water well survey were cross referenced using Charlotte-Mecklenburg Well Information System 3.0 (http://meckmap.mecklenburgcountync.gov/WIS_3/index.html). Additional details concerning the receptor survey are included in the *The Groundwater Sampling and Receptor Survey Update Letter Report*, dated July 11, 2014 (**Attachment A**).

According to information found within Charmeck.org, Charlotte-Mecklenburg Utility Department (CMUD) provides water to the area surrounding the site and within a 0.5 mile radius of the 1,1-DCE groundwater impacts located on site. Specifically, the water source used for this area is Charlotte Mecklenburg Vest Water Treatment Plant, and water is obtained from the Catawba River. Undeveloped properties in the area would obtain their water from CMUD in the event it is developed in the future.

4.2 ORDINANCES

According to Charlotte Mecklenburg Groundwater Rules, Chapter VII, Mecklenburg County must provide approval (permit to construct) for the installation of a water supply well. These rules state that the installation of water supply wells is not permitted within 1,000 feet from the boundary of a contaminant plume if public

water supply is available. As mentioned in section 4.1, water supply is available throughout the area of the site. **Attachment B** contains a copy of the Charlotte Mecklenburg Groundwater Rules.

4.3 NOTIFICATION

URS personnel notified the following individuals via electronic correspondence regarding the presence of 1,1-DCE in groundwater at the site above the federal MCL:

- February 28, 2014 - Shawna Caldwell, P.G., Groundwater and Wastewater Services, Mecklenburg County Government, Shawna.caldwell@mecklenburgcountync.gov;
- May 27, 2015 - Andrew Pitner, P. G.; Division of Water Resources – Water Quality Regional Operations Section, Mooresville Regional Office, NCDENR, Andrew.Pitner@ncdenr.gov; and,
- May 27, 2015; Britt Sitzer, Regional Engineer, Division of Water Resources – Public Water Supply Section, Mooresville Regional Office, NCDENR, Britt.Setzer@ncdner.gov.

The electronic correspondences contain site name, address and constituent of concern. All three individuals responded in receipt of the notification. Copies of the electronic correspondence notifications are included as **Attachment C**.

5.0 CONCLUSIONS

In accordance with the REC Implementation Guidance, dated October 2015, the applicable groundwater remediation goal for 1,1-DCE is the 2L standard (permanent or interim) provided groundwater is not or will not be used for potable purposes in any area where the groundwater 1,1-DCE contaminant plume is currently located or may be located in the future. As documented in this Addendum, groundwater within 1,000 feet of the Site is not used as a public water supply based on results of the receptor survey performed by URS (now AECOM). In addition, Mecklenburg County, NCDEQ - Water Quality Regional Operations Section and NCDEQ Public Water Supply Section have been notified of impacts associated with the Site that exceed the federal MCL to prevent the potential future installation of a water supply well within this area. Also, the 1,1-DCE groundwater plume area has remained constant or decreased during the groundwater sampling events performed from 2008 through 2014. Given the changes to the 2L standard, absence of existing water supply wells presently located in the area and measures in place preventing the future installation of water supply wells, the remedial action for 1,1-DCE affected groundwater is complete once the pending public notification has been finished.

6.0 REFERENCES

URS; *Phase I Remedial Investigation*, April 2003;

URS; *Phase II Remedial Investigation*, February 2006;

URS; *Remedial Action Plan*, February 2008;

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report June 2008*, dated June 16, 2008;

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report September 2008*, dated September 26, 2008

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report January 2009*, dated January 22, 2009

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report February 2009*, dated April 6, 2009

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report September 2009*, dated October 26, 2009

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report September 2010*, dated October 29, 2010;

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report October – December 2011/July 2012*, dated August 29, 2012

URS; *Groundwater Monitored Natural Attenuation Remedial Action Progress Report October 2012*, dated December 7, 2012

URS; *Groundwater Sampling and Receptor Survey Update Letter Report* dated July 11, 2014

NCDEQ IHSB; Registered Environmental Consultant Program – Rules and Implementation Guidance, October 2015.

TABLE

Table 1 - Property Descriptions from Receptor Survey; March 21, 2014

Property Address	Parcel ID	Property Owner	Mailing Address	Comments / Observations
501 South Bruns Avenue	07107453	Board of Education Charlotte Mecklenburg	701 East 2nd Street Charlotte, NC 28202	Bruns Academy / School
608 Mahopac Street	07107229	Spirit of the Life House	5910 Sullins Rd. Charlotte, NC 28214	The Spirit of Life House / Ministries
400 State Street	07110511	Apostolic Church of God of America TRS	200A Honeys Building Charlotte, NC 28202	Adams Memorial Apostolic Church
322 South Gardner Avenue	07111211	Gregory and Tracy	5901 Crestwood Dr. Charlotte, NC 28216	Childs Choice Learning Center / Daycare
410 South Gardner Avenue	07111410	WIKOFF Color Corp	PO Box W Fort Mill, SC 29715	-
Chaberlin Avenue	07111310	Caraustar Mill Group Inc	PO Box 115 Austell, GA 30168-0115	Appeared as paper recycling
Stewart Avenue	07111309			-
2501 Chamberlain Avenue	07111415			-
418 South Gardner Avenue	07111412			-
401 South Gardner Avenue	07111408			-
443 South Gardner Avenue	07111409			-
528 South Turner Avenue	07111414			-
443 South Gardner Avenue	07111413			-
400 South Turner Avenue	07111407			-
404 South Turner Avenue	07111406			-
408 South Turner Avenue	07111405			-
412 South Turner Avenue	07111404			-
420 South Turner Avenue	07111403			-
428 South Turner Avenue	07111402			-
432 South Turner Avenue	07111401			-
528 South Turner Avenue	07111417			SAVONA LLC
South Street	07112131	Forshaw Chemicals INC	650 State Street Charlotte, NC 28208	-
640 State Street	07112130			-
539 State Street	07107214	LLC Community Building Investments	5901 Sardis Road Charlotte, NC 28270	Auto Surgeons
617 State Street	07107803	Mecklenburg County	600 East 4th Street, 11th Floor, Charlotte, NC 28202	Seversville Neighborhood Park
2600 Ravencroft Drive	07112205			Martin Luther King Community Park

Notes:

Government/Institutional	
Office	
Warehouse	
Vacant	

Table was generated using Mecklenburg County GIS - Economic Development

Water Supply Well survey included information from the Mecklenburg County Water Well Database as of 07/02/14

FIGURES



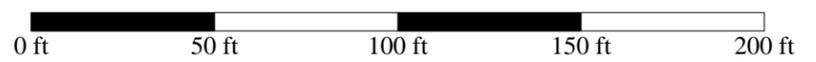
Legend:

MW-1 Monitoring Well Location


MW-1D Deep Monitoring Well Location


- - - - - Approximate Property Boundary

Scale (feet)



Monitoring Wells MW-2A and MW-8 Installed on November 7-8, 2011

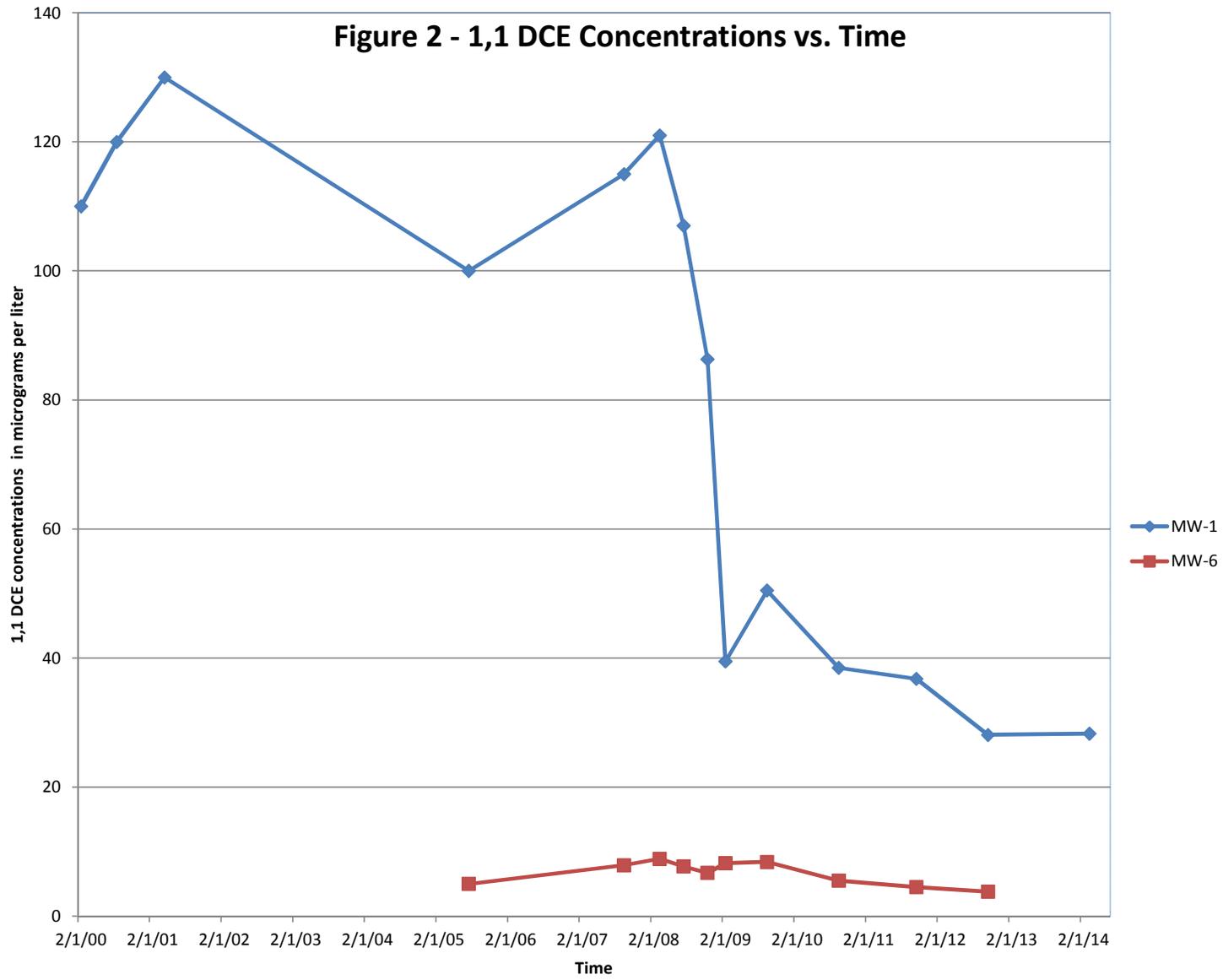
Figure 1

DRAWN BY:
 CMR
 CHECKED BY:
 RHM
 JOB NO.:
 13651432

URS
 URS Corporation - North Carolina
 6000 Fairview Road, Suite 200
 Charlotte, North Carolina 28210
 (704) 522-0330

Groundwater Monitoring Wells Location Map
 October 29, 2012
 Flint Ink
 Charlotte, North Carolina

Figure 2 - 1,1 DCE Concentrations vs. Time



APPENDIX A



July 11, 2014

North Carolina Department of Environment and Natural Resources
Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Re: **Groundwater Sampling and Receptor Survey Update Letter Report
Former Flint Ink Facility
515 South Turner Avenue
Charlotte, North Carolina
Site ID No.: NCD 083 6778 631**

Dear Mr. Caulk:

URS Corporation – North Carolina (URS) is pleased to provide this letter report documenting recently completed groundwater sampling activities as well as an updated receptor survey at the former Flint Ink facility located in Charlotte, North Carolina (site). This letter report has been prepared to document the progress of the activities completed as part of the groundwater monitored natural attenuation (GMNA) remedial strategy implemented at the site. The specific activities related to the implementation and operation of the GMNA remedial strategy are described in detail in the *Remedial Action Plan (RAP)* dated March 14, 2008 and submitted on March 17, 2008.

1.0 INTRODUCTION

To date, the following groundwater sampling events have been completed at the site in support of the GMNA remedial strategy: March 2008, July 2008, November 2008, February 2009, September 2009, September 2010, October 2011, December 2011, July 2012 and October 2012. This report documents the groundwater sampling event completed at the site in March 2014.

1.1 Groundwater Sampling Event

The March 5, 2014 groundwater sampling event was the ninth sampling event completed as part of the GMNA groundwater sampling activities

Depth to groundwater and total well depth were measured in all on-site and offsite monitoring wells (MW-1, MW-2A, MW-3 through MW-8 and MW-1D) on March 5, 2014. A map depicting the location of the monitoring wells and potentiometric surface of the surficial aquifer is included as **Figure 1**. Groundwater elevation data is summarized on **Table 1**.

On March 5, 2014, URS collected groundwater samples from on-site monitoring wells MW-1, MW-2A,

URS Corporation – North Carolina
6000 Fairview Road, Suite 200
Charlotte, NC 28210
Tel: 704-522-0330
Fax: 740-522-0063



North Carolina Department of Environment and Natural Resources
Division of Waste Management
July 11, 2014
Page 2

MW-8 and offsite monitoring well MW-7. Field measurement procedures were conducted in general accordance with the following EPA Region 4 Quality System and Technical Operating Procedures documents:

- Field pH Measurement, dated June 13, 2008;
- Field Specific Conductance Measurement, dated June 13, 2008;
- Field Temperature Measurement, dated June 13, 2008;
- Field Turbidity Measurement, dated June 13, 2008;
- Groundwater Level and Well Depth Measurement, dated November 1, 2007;
- Field Measurement of Dissolved Oxygen, dated November 1, 2007, and
- Field Measurement of Oxidation-Reduction Potential, dated August 7, 2009.

Prior to performing the depth to groundwater measurements, sufficient time was provided for the water level within the wells to equilibrate after being vented to atmospheric pressure. Measurements were collected using an electronic water level meter to an accuracy of +/-0.01 feet (ft).

A summary of the groundwater parameters recorded during the well purging is included in **Table 2**.

Immediately following the purging of each monitoring well, groundwater samples were collected and placed in laboratory-supplied containers and stored in an iced cooler. The samples were submitted under proper chain-of-custody to Pace Analytical Laboratories, Inc. (Pace), a NC-approved laboratory. Specifically, groundwater from all monitoring wells were analyzed for 1,1-Dichloroethene (1,1-DCE) by EPA Method 8260. Previous groundwater sampling events analyzed groundwater samples for volatile organic compounds by EPA Method 8260 as well as the geochemical parameters alkalinity, chloride, nitrates, methane, ethane and ethene by EPA Methods 2320B, 4500, 353.2 and 3810, respectively. Geotechnical parameters were collected to demonstrate continued natural attenuation of COCs at the site.

In the past URS (March 14, 2008 RAP sampling) collected samples from monitoring wells MW -1, MW-3, MW-6, and MW-8 for the following constituents to evaluate groundwater impact at the subject site: base neutrals via EPA Method 8270 and total and dissolved chromium/ lead via EPA Method 6010. (Although the REC guidelines state the use of filtered sample analytical results is not acceptable as a stand-alone result, the comparison between the total and dissolved chromium and lead concentrations support the assumption that the elevated metals detected at the site are partially attributable to the presence of suspended sediment in the groundwater samples.)

URS utilized a focus sampling methodology to sample for only the constituents that have been COCs at the site in the past. Therefore, groundwater from monitoring wells MW-2A and MW-8 were analyzed for



North Carolina Department of Environment and Natural Resources
Division of Waste Management
July 11, 2014
Page 3

Benzo(a)anthracene, Benzo(a)pyrene, Benzo(a)fluoranthene, bis(2-Ethylhexyl)phthalate by EPA Method 8270 and dissolved chromium and lead via EPA Method 6010.

The analytical results of the groundwater samples collected at the site on March 5, 2014, are consistent with the analytical results of previous groundwater sampling events. The groundwater analytical results indicated the presence 1,1-DCE at a concentration of 28.3 micrograms per liter (ug/l) in monitoring well MW-1 which is above the USEPA Federal MCL of 7.0 ug/l, but is less than the North Carolina 2L remedial goal of 350 ug/l. Based on discussions with the REC Program, the federal MCL would only be relevant in the event a private or public drinking water well is threatened or impacted in accordance with Applicable or Relevant and Appropriate Requirements (ARARS) for the site.

In February 2014, URS and Mr. Caulk discussed the significance of the ARARs in respect to the site; specifically, that they would only be relevant in the event that a public drinking water well is threatened or impacted. As part of verifying that no public drinking water well(s) are, or will be threatened or impacted, URS completed the following activities:

1. URS contacted Ms. Shawna Caldwell of the Mecklenburg County Groundwater and Wastewater Services, to confirm that local ordinance requires that Mecklenburg County provide approval (permit to construct) for the installation of a water supply well, and that due to the impacts identified in groundwater and soil at the Flint Ink site, that the site would be considered “an area of regulated groundwater usage”. In accordance with Mecklenburg County Groundwater Well Regulations, new water supply wells are not permitted within 1,000 feet from the boundary of a contaminant plume if public water supply is available. Water supply is available throughout the area of the site.
2. Ms. Caldwell confirmed that the Flint Ink site is a known/documented contamination site on file with Mecklenburg County.
3. On March 21, 2014, URS mobilized to the Site to conduct an updated receptor/water supply well survey. No public or private water supply wells were observed during the receptor/water well survey within 1,000ft of the site. Several sensitive as listed in REC Guidance handbook include schools, daycares, and retirement communities. URS identified some sensitive populations during the receptor/water well survey and are indicated in Table 4. However, URS did not observe potable groundwater wells serving the sensitive populations.

URS is preparing a Groundwater Remedial Action Plan Addendum based on the information documented above. URS anticipates submittal of this document to the REC Program within the next quarterly reporting period.

Historical groundwater analytical results from 2000 to 2014 are summarized on **Table 3**. The March 5, 2014 analytical results can also be seen depicted on **Figure 1**. The laboratory report is included as part of **Appendix A**.

The quality assurance/quality control (QA/QC) procedures for the groundwater sampling event were consistent with the procedures outlined in the *RAP*. Investigative derived waste generated by the



North Carolina Department of Environment and Natural Resources
Division of Waste Management
July 11, 2014
Page 4

groundwater purging and sampling activities was stored temporarily on-site in 55 gallon drums pending arrangements for proper off-site disposal.

- Results of the receptor/water well survey were cross referenced using information obtained from the public Charlotte-Mecklenburg Well Information System 3.0 (http://meckmap.mecklenburgcountync.gov/WIS_3/index.html).

Conclusion:

The completion of the March 2014 groundwater sampling event marks the ninth sampling event of the implementation of the GMNA remedial strategy at the site. Since the last sampling event conducted in October 2012, the groundwater concentration of 1,1-DCE in the groundwater samples collected from monitoring well MW-1 have continued to decrease. A decreasing trend is apparent when analyzing the overall groundwater quality since February 2000. Based on the decreasing trends it appears that natural attenuation processes are occurring at the site.

Based on groundwater sampling results from monitoring wells MW-2A and MW-8, no new concerns for site-specific COCs exist. Groundwater sample results for VOCs and metals from monitoring well MW-2A appear to be consistent with that of former monitoring well MW-2. Additionally, groundwater sample results indicate VOCs, SVOCs and metals have not affected the shallow aquifer in proximity to monitoring well MW-8.

-oOo-

The required certifications by the remediating party and the REC are attached. At the completion of the groundwater remedial actions, a Completion Report will be prepared and submitted to the NCDENR. Please call me with any questions at (704) 522-0330.

Sincerely,

URS CORPORATION-NORTH CAROLINA

Robert H. MacWilliams, PG
Registered Site Manager

Attachments

TABLES

Table 1
Monitoring Well Construction Details And Site Groundwater Elevations
Former Flint Ink Charlotte Facility
515 Turner Avenue, Charlotte, NC

Groundwater Elevation Data	Date Measured	Ground Surface Elevation (ft amsl)	Top of Casing Elevation (ft amsl)	Total Well Depth (ft btoc)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)			
<i>Well Identification</i>									
MW-01 (Former UST Area)	08/16/05	682.25	681.94	28.50	10.60	671.34			
	09/10/07			27.56	13.75	668.19			
	10/11/07			27.56	14.42	667.52			
	03/20/08			28.5	12.52	669.42			
	07/02/08			27.56	13.23	668.71			
	11/05/08			27.5	13.80	668.14			
	02/03/09			27.5	13.28	668.66			
	09/22/09			27.56	13.58	668.36			
	09/15/10			27.56	12.74	669.20			
	10/27/11			27.56	13.48	668.46			
	10/29/12			27.56	13.97	667.97			
	03/05/14			27.56	9.42	672.52			
	MW-01D (Former UST Area- Deep)			08/16/05	682	681.73	62.50	10.30	671.43
				09/10/07			61.75	13.22	668.51
10/11/07		61.75	14.02	667.71					
03/20/08		62.5	11.94	669.79					
07/02/08		61.75	12.68	669.05					
11/05/08		61.7	13.51	668.22					
02/03/09		61.7	13.09	668.64					
09/22/09		61.75	13.14	668.59					
09/15/10		61.75	10.20	671.53					
10/27/11		61.75	13.02	668.71					
10/29/12		61.75	14.31	667.42					
03/05/14		61.25	8.95	672.78					
MW-02 (Downgradient of Former UST Area)		08/16/05	673.22	672.91			28.00	19.27	653.64
		09/10/07					28.00	21.31	651.60
	10/11/07	28.00			21.91	651.00			
	03/20/08	28.00			20.33	652.58			
	07/02/08	28.00			20.91	652.00			
	11/05/08	28.00			21.12	651.79			
	02/03/09	28.00			20.50	652.41			
	09/22/09	Well Destroyed							
	09/15/10								
	10/27/11								
MW-2A (Replacement Well for MW-02)	10/29/12	673.22	672.9	28.50	21.03	651.87			
	03/05/14			28.35	17.65	655.25			
MW-03 (Downgradient of Former Dry Well)	08/16/05	674.23	673.68	27.80	17.04	656.64			
	09/10/07			27.80	19.13	654.55			
	10/11/07			27.80	19.83	653.85			
	03/20/08			27.80	18.28	655.40			
	07/02/08			27.56	18.39	655.29			
	11/05/08			27.56	18.64	655.04			
	02/03/09			27.56	18.03	655.65			
	09/22/09			27.56	17.85	655.83			
	09/15/10			27.56	17.32	656.36			
	10/27/11			27.56	17.68	656.00			
	10/29/12			27.56	18.06	655.62			
	03/05/14			27.56	15.54	658.14			
	MW-04 (Upgradient Background)			08/16/05	690.4	690.27	28.00	18.56	671.71
				09/10/07			28.20	20.92	669.35
10/11/07		28.20	21.83	668.44					
03/20/08		28.00	21.19	669.08					
07/02/08		28.00	21.03	669.24					
11/05/08		28.00	22.19	668.08					
02/03/09		28.00	22.85	667.42					
09/22/09		28.20	20.94	669.33					
09/15/10		28.20	20.24	670.03					
10/27/11		28.20	21.35	668.92					
10/29/12		28.20	21.75	668.52					
03/05/14		28.20	17.91	672.36					

Table 1
Monitoring Well Construction Details And Site Groundwater Elevations
Former Flint Ink Charlotte Facility
515 Turner Avenue, Charlotte, NC

Groundwater Elevation Data	Date Measured	Ground Surface Elevation (ft amsl)	Top of Casing Elevation (ft amsl)	Total Well Depth (ft btoc)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)			
<i>Well Identification</i>									
MW-05 (Sidegradient Background)	08/16/05	683.11	682.95	24.00	10.57	672.38			
	09/10/07			23.25	13.45	669.50			
	10/11/07			23.25	14.34	668.61			
	03/20/08			24.00	12.32	670.63			
	07/02/08			23.25	13.08	669.87			
	11/05/08			23.25	14.22	668.73			
	02/03/09			23.25	12.34	670.61			
	09/22/09			23.25	13.14	669.81			
	09/15/10			23.25	12.43	670.52			
	10/27/11			23.25	13.41	669.54			
	10/29/12			23.25	14.10	668.85			
	03/05/14			23.25	9.41	673.54			
	MW-06 (Downgradient of Former UST Area)			08/16/05	676.35	676.01	30.00	21.17	654.84
				09/10/07			29.95	23.22	652.79
10/11/07		29.95	23.88	652.13					
03/20/08		30.00	22.15	653.86					
07/02/08		29.95	23.00	653.01					
11/05/08		29.95	23.27	652.74					
02/03/09		29.95	22.48	653.53					
09/22/09		29.95	22.37	653.64					
09/15/10		29.95	21.72	654.29					
10/27/11		29.95	21.87	654.14					
10/29/12		29.95	22.97	653.04					
03/05/14		29.95	16.79	659.22					
MW-07 (Offsite and downgradient of Former UST Area)		07/24/08	676.35	674.87			35.65	24.12	650.75
		11/05/08					35.65	22.87	652.00
	02/03/09	35.65			21.77	653.10			
	09/22/09	35.00			22.24	652.63			
	09/15/10	35.00			21.79	653.08			
	10/27/11	35.00			22.00	652.87			
	10/29/12	35.00			22.93	651.94			
	03/05/14	35.00			17.43	657.44			
MW-08 (Former Drainage Ditch Area B)	10/29/12	NR	683.09	23.40	15.80	667.29			
	03/05/14			23.40	9.60	673.49			

Notes:

ft amsl= feet above mean sea level
ft btoc= feet below top of well casing
NR = no record

Table 2
Summary of Field Parameters
March 5, 2014
Former Flint Ink Charlotte Facility
515 Turner Avenue, Charlotte, NC

Parameters	PH (S.U)	Conductivity (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temperature (°C)	ORP (mv)
<i>Well Identification</i>						
MW-01 (Former UST Area)	5.85	0.221	0.0	0.77	14.60	104.6
MW-2A (Replacement well for MW-02)	5.69	0.110	19.27	6.30	16.68	143.9
MW-07 Offsite and downgradient of Former UST Area	5.69	0.361	0.40	1.51	15.45	141.9
MW-08 (Former Drainage Ditch Area B)	6.39	0.572	4.91	0.20	11.60	3.1

Notes:

mg/L = milligrams per liter.

S.U. = Standard Units.

mS/cm = millisiemens per centimeter.

NTU = Nephelometric Turbidity Units.

mV = millivolts.

Table 3
VOCs Detected in Groundwater (2000-2014)
Former Flint Ink Charlotte Facility
515 Turner Avenue, Charlotte, NC

Groundwater Screening Standards	Date	Volatile Organic Compounds (VOCs) by EPA Method 8260B									SVOCs by EPA Method 8270					
		Acetone	2-butanone	1,1,1-TCA	1,1,2-TCA	Chloromethane	Chloroform	1,1-DCA	1,2-DCA	1,1-DCE	Benzo(g,h,i)perylene	Indeno(1,2,3)pyrene	Benzo(g,h,i)anthracene	Benzo(g,h,i)fluoranthene	DEHP	
Remediation Goals (RGs)¹ (ug/L)	4/12	6,000	NE	200	0.6	3.0	70	6.0	0.4	350	200	0.05				
<i>Well Identification</i>																
MW-04 (Upgradient Background)	03/20/08	NA	NA	ND	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	07/02/08	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	11/05/08	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	02/03/09	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	09/22/09	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	09/15/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	10/27/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
MW-05 (Sidegradient Background)	10/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	03/20/08	NA	NA	ND	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	07/02/08	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	11/05/08	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	02/03/09	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	09/22/09	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	09/15/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
MW-06 (Downgradient of Former UST Area)	10/27/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	07/22/05	6.3	ND	ND	ND	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	09/11/07	NA	NA	ND	ND	NA	ND	2.8	ND	7.9	NA	NA	NA	NA	NA	
	03/20/08	NA	NA	ND	ND	NA	ND	3.2	ND	8.9 J	NA	NA	NA	NA	NA	
	07/02/08	NA	NA	ND	ND	ND	ND	3.7	ND	7.7	NA	NA	NA	NA	NA	
	11/05/08	NA	NA	ND	ND	ND	ND	3.2	ND	6.7	NA	NA	NA	NA	NA	
	02/03/09	NA	NA	ND	ND	ND	ND	4.1	ND	8.2	NA	NA	NA	NA	NA	
	09/22/09	NA	NA	ND	ND	ND	ND	4.1	ND	8.4	NA	NA	NA	NA	NA	
MW-07 (Offsight and downgradient of Former UST Area)	09/15/10	ND	ND	ND	ND	ND	ND	2.6	ND	5.5	ND	NA	NA	NA	NA	
	10/27/11	ND	ND	ND	ND	ND	ND	1.8	ND	4.5	ND	NA	ND	ND	ND	
	10/29/12	ND	ND	ND	ND	ND	ND	1.7	ND	3.8	ND	ND	ND	ND	ND	
	07/24/08	NA	NA	ND	ND	ND	0.14J	ND	ND	ND	NA	NA	NA	NA	NA	
	11/05/08	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	02/03/09	NA	NA	ND	ND	ND	0.17J	ND	ND	ND	NA	NA	NA	NA	NA	
	09/22/09	NA	NA	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
MW-08 (Former Drainage Ditch Area B)	09/15/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	10/27/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	10/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	
	03/05/14	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	
	11/17/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	
07/10/12	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA		
10/29/12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ZND	ND	ND	ND		
03/05/14	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	ND	ND	ND		

Notes:

SVOCs = semi-volatile organic compounds

NCDENR Groundwater Remediation Goals (RGs) per North Carolina 2L Groundwater Standards, April 2012.

All concentrations given in micrograms per liter (ug/L), also referred to as parts per billion

NE = not established

NA = analyte not analyzed

ND = analyte not detected at laboratory minimum detection limit

NSC = Element Not Tested for Background Analysis

Estimated Concentrations of VOCs detected below laboratory reporting limits as follows:

1,1,2-TCA = 1,1,2-Trichloroethane

1,2-DCA = 1,2-Dichloroethane

CDS = Carbon Disulfide

DEHP = bis(2-Ethylhexyl)phthalate

"**Bold**" type and orange shading indicates exceedance of groundwater RG

"Dup" indicates a quality assurance (QA) duplicate sample result

J = Estimated value; Sample result detected between associated method detection limit (MDL) and reporting limit (RL)

2L Standard for 1,1-DCE was 7ug/l but was revised to 350 ug/l in 2013.

Table 3 (con't)
Analytes Detected in Groundwater (2000-2014)
Former Flint Ink Charlotte Facility
515 Turner Avenue, Charlotte, NC

Groundwater Screening Standards	Date	Metals by EPA Method 6000/7000 Series																						
		Aluminum	Arsenic	Barium	Cadmium	Calcium	Chromium	Chromium (dissolved)	Cobalt	Copper	Iron	Lead	Lead (Dissolved)	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Remediation Goals (RGs)¹ (ug/L)	4/12	NE	NE	700	NE	NE	10	-	NE	NE	NE	15	-	NE	50	NE	NE	NE	NE	20	NE	NE	NE	NE
EPA MCLG² (ug/L)	5/09	NE	0.0	200.0	0.5	NE	10	-	NE	1,300	NE	0.0	-	NE	NE	NE	NE	NE	50	NE	NE	0.5	NE	NE
Background³ (ug/L)	10/07	53,400	2.9J	509	< 0.5	38,600	81.6	-	41.3	181	73,300	NSC	-	55,500	2,820	< 1.1	61.9	15,500	20.2	<0.1	27,100	12.9	163	295
Well Identification																								
MW-08 (Former Drainage Ditch Area B)	11/17/11	NSC	NSC	NSC	NSC	NSC	8.6	NSC	NSC	NSC	NSC	ND	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC
	07/10/12	NSC	NSC	NSC	NSC	NSC	10.6	NSC	NSC	NSC	NSC	8.1	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC	NSC
	10/29/12	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	03/05/14	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1) NCDENR Groundwater Remediation Goals (RGs) per North Carolina 2L Groundwater Standards, April 2012.

2) EPA Maximum Contaminant Level Goal (MCLG), May 2009

3) Based on background groundwater samples collected at the Site in October 2007 from MW-04 and MW-05

NE = not established

ND = analyte not detected at laboratory minimum detection limit

NSC = Element Not Tested for Background Analysis

NA = analyte not analyzed

Estimated Concentrations of VOCs detected below laboratory reporting limits as follows:

1,1,2-TCA = 1,1,2-Trichloroethane

1,2-DCA = 1,2-Dichloroethane

CDS = Carbon Disulfide

"**Bold**" type and orange shading indicates exceedance of groundwater RG

"Dup" indicates a quality assurance (QA) duplicate sample result

J = Sample result estimated; detected between method detection limit (MDL) and reporting limit (RL)

FIGURES

LEGEND

- MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- 624.39 GROUNDWATER ELEVATION (ft. Above MSL)
- (672.78) GROUNDWATER ELEVATION (Not Used in Countour)
- POTENTIOMETRIC CONTOUR INTERVAL

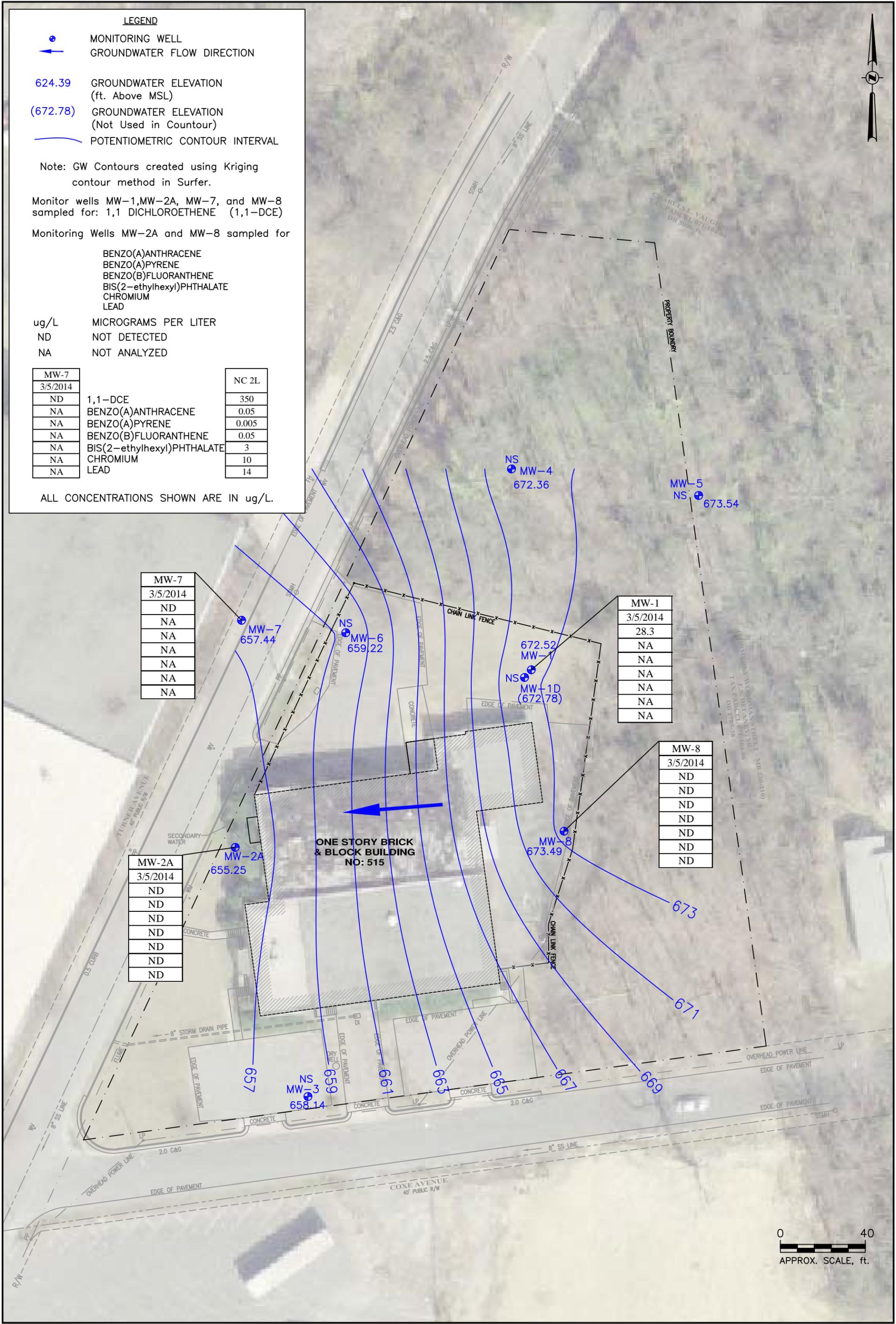
Note: GW Contours created using Kriging contour method in Surfer.
 Monitor wells MW-1, MW-2A, MW-7, and MW-8 sampled for: 1,1 DICHLOROETHENE (1,1-DCE)
 Monitoring Wells MW-2A and MW-8 sampled for:

- BENZO(A)ANTHRACENE
- BENZO(A)PYRENE
- BENZO(B)FLUORANTHENE
- BIS(2-ethylhexyl)PHTHALATE
- CHROMIUM
- LEAD

ug/L MICROGRAMS PER LITER
 ND NOT DETECTED
 NA NOT ANALYZED

MW-7		NC 2L
3/5/2014		
ND	1,1-DCE	350
NA	BENZO(A)ANTHRACENE	0.05
NA	BENZO(A)PYRENE	0.005
NA	BENZO(B)FLUORANTHENE	0.05
NA	BIS(2-ethylhexyl)PHTHALATE	3
NA	CHROMIUM	10
NA	LEAD	14

ALL CONCENTRATIONS SHOWN ARE IN ug/L.



MW-7
3/5/2014
ND
NA

MW-2A
3/5/2014
ND

MW-1
3/5/2014
28.3
NA

MW-8
3/5/2014
ND

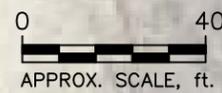


FIGURE 1

DRAWN BY: BTG

CHECKED BY: BFC

PROJECT NO.: 13651432

URS

URS CORPORATION - NORTH CAROLINA
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210

TEL: (704) 522-0330
 FAX: (704) 522-0063

SITE MAP

GROUNDWATER QUALITY MAP
 FORMER FLINT INK FACILITY
 515 SOUTH TURNER AVENUE
 CHARLOTTE, NORTH CAROLINA

APPENDIX A
LABORATORY REPORT

March 14, 2014

Mike Fulkerson
URS Corporation
PO Box 203970
Austin, TX 78720

RE: Project: Flint Ink 13651432
Pace Project No.: 92192053

Dear Mike Fulkerson:

Enclosed are the analytical results for sample(s) received by the laboratory on March 05, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Nicole Lancaster, URS Corporation
Ms. Martha Myers-Lee, URS Corporation
Ms. Carlin Slusher, URS Corporation



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: Flint Ink 13651432

Pace Project No.: 92192053

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs

2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: Flint Ink 13651432
Pace Project No.: 92192053

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92192053001	MW-1	Water	03/05/14 15:30	03/05/14 17:00
92192053002	MW-2A	Water	03/05/14 16:00	03/05/14 17:00
92192053003	MW-7	Water	03/05/14 16:15	03/05/14 17:00
92192053004	MW-8	Water	03/05/14 15:45	03/05/14 17:00

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: Flint Ink 13651432

Pace Project No.: 92192053

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92192053001	MW-1	EPA 8260	MCK	4	PASI-C
92192053002	MW-2A	EPA 6010	JMW	2	PASI-A
		EPA 6010	JMW	2	PASI-A
		EPA 8270	BPJ	7	PASI-C
		EPA 8260	MCK	4	PASI-C
92192053003	MW-7	EPA 8260	MCK	4	PASI-C
92192053004	MW-8	EPA 6010	JMW	2	PASI-A
		EPA 6010	JMW	2	PASI-A
		EPA 8270	BPJ	7	PASI-C
		EPA 8260	MCK	4	PASI-C

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SUMMARY OF DETECTION

Project: Flint Ink 13651432
Pace Project No.: 92192053

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92192053001 EPA 8260	MW-1 1,1-Dichloroethene	28.3	ug/L	1.0	03/10/14 18:23	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Flint Ink 13651432

Pace Project No.: 92192053

Method: EPA 6010

Description: 6010 MET ICP

Client: URS Corporation

Date: March 14, 2014

General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Flint Ink 13651432

Pace Project No.: 92192053

Method: EPA 6010

Description: 6010 MET ICP, Lab Filtered

Client: URS Corporation

Date: March 14, 2014

General Information:

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Flint Ink 13651432

Pace Project No.: 92192053

Method: EPA 8270

Description: 8270 MSSV Semivolatile Organic

Client: URS Corporation

Date: March 14, 2014

General Information:

2 samples were analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/26346

S0: Surrogate recovery outside laboratory control limits.

- LCS (Lab ID: 1152340)
- 2,4,6-Tribromophenol (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: Flint Ink 13651432

Pace Project No.: 92192053

Method: EPA 8260

Description: 8260 MSV Low Level

Client: URS Corporation

Date: March 14, 2014

General Information:

4 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Flint Ink 13651432

Pace Project No.: 92192053

Sample: MW-1		Lab ID: 92192053001	Collected: 03/05/14 15:30	Received: 03/05/14 17:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,1-Dichloroethene Surrogates	28.3	ug/L	1.0	1		03/10/14 18:23	75-35-4	
4-Bromofluorobenzene (S)	101 %		70-130	1		03/10/14 18:23	460-00-4	
1,2-Dichloroethane-d4 (S)	91 %		70-130	1		03/10/14 18:23	17060-07-0	
Toluene-d8 (S)	99 %		70-130	1		03/10/14 18:23	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Flint Ink 13651432

Pace Project No.: 92192053

Sample: MW-2A		Lab ID: 92192053002	Collected: 03/05/14 16:00	Received: 03/05/14 17:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Chromium	ND ug/L		5.0	1	03/06/14 10:15	03/07/14 19:04	7440-47-3	
Lead	ND ug/L		5.0	1	03/06/14 10:15	03/07/14 19:04	7439-92-1	
6010 MET ICP, Lab Filtered		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Chromium, Dissolved	ND ug/L		5.0	1	03/06/14 12:00	03/06/14 21:32	7440-47-3	
Lead, Dissolved	ND ug/L		5.0	1	03/06/14 12:00	03/06/14 21:32	7439-92-1	
8270 MSSV Semivolatile Organic		Analytical Method: EPA 8270 Preparation Method: EPA 3510						
Benzo(a)anthracene	ND ug/L		10.0	1	03/07/14 09:00	03/14/14 01:23	56-55-3	
Benzo(a)pyrene	ND ug/L		10.0	1	03/07/14 09:00	03/14/14 01:23	50-32-8	
Benzo(b)fluoranthene	ND ug/L		10.0	1	03/07/14 09:00	03/14/14 01:23	205-99-2	
bis(2-Ethylhexyl)phthalate	ND ug/L		6.0	1	03/07/14 09:00	03/14/14 01:23	117-81-7	
Surrogates								
Nitrobenzene-d5 (S)	68 %		21-110	1	03/07/14 09:00	03/14/14 01:23	4165-60-0	
2-Fluorobiphenyl (S)	71 %		27-110	1	03/07/14 09:00	03/14/14 01:23	321-60-8	
Terphenyl-d14 (S)	94 %		31-107	1	03/07/14 09:00	03/14/14 01:23	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 8260						
1,1-Dichloroethene	ND ug/L		1.0	1		03/10/14 18:38	75-35-4	
Surrogates								
4-Bromofluorobenzene (S)	99 %		70-130	1		03/10/14 18:38	460-00-4	
1,2-Dichloroethane-d4 (S)	92 %		70-130	1		03/10/14 18:38	17060-07-0	
Toluene-d8 (S)	99 %		70-130	1		03/10/14 18:38	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Flint Ink 13651432

Pace Project No.: 92192053

Sample: MW-7		Lab ID: 92192053003	Collected: 03/05/14 16:15	Received: 03/05/14 17:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
1,1-Dichloroethene	ND	ug/L	1.0	1		03/10/14 18:54	75-35-4	
Surrogates								
4-Bromofluorobenzene (S)	100 %		70-130	1		03/10/14 18:54	460-00-4	
1,2-Dichloroethane-d4 (S)	90 %		70-130	1		03/10/14 18:54	17060-07-0	
Toluene-d8 (S)	99 %		70-130	1		03/10/14 18:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: Flint Ink 13651432

Pace Project No.: 92192053

Sample: MW-8		Lab ID: 92192053004	Collected: 03/05/14 15:45	Received: 03/05/14 17:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Chromium	ND ug/L		5.0	1	03/06/14 10:15	03/07/14 19:07	7440-47-3	
Lead	ND ug/L		5.0	1	03/06/14 10:15	03/07/14 19:07	7439-92-1	
6010 MET ICP, Lab Filtered		Analytical Method: EPA 6010 Preparation Method: EPA 3010						
Chromium, Dissolved	ND ug/L		5.0	1	03/06/14 12:00	03/06/14 21:42	7440-47-3	
Lead, Dissolved	ND ug/L		5.0	1	03/06/14 12:00	03/06/14 21:42	7439-92-1	
8270 MSSV Semivolatile Organic		Analytical Method: EPA 8270 Preparation Method: EPA 3510						
Benzo(a)anthracene	ND ug/L		10.0	1	03/07/14 09:00	03/14/14 13:03	56-55-3	
Benzo(a)pyrene	ND ug/L		10.0	1	03/07/14 09:00	03/14/14 13:03	50-32-8	
Benzo(b)fluoranthene	ND ug/L		10.0	1	03/07/14 09:00	03/14/14 13:03	205-99-2	
bis(2-Ethylhexyl)phthalate	ND ug/L		6.0	1	03/07/14 09:00	03/14/14 13:03	117-81-7	
Surrogates								
Nitrobenzene-d5 (S)	77 %		21-110	1	03/07/14 09:00	03/14/14 13:03	4165-60-0	
2-Fluorobiphenyl (S)	90 %		27-110	1	03/07/14 09:00	03/14/14 13:03	321-60-8	
Terphenyl-d14 (S)	98 %		31-107	1	03/07/14 09:00	03/14/14 13:03	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 8260						
1,1-Dichloroethene	ND ug/L		1.0	1		03/10/14 19:09	75-35-4	
Surrogates								
4-Bromofluorobenzene (S)	100 %		70-130	1		03/10/14 19:09	460-00-4	
1,2-Dichloroethane-d4 (S)	92 %		70-130	1		03/10/14 19:09	17060-07-0	
Toluene-d8 (S)	99 %		70-130	1		03/10/14 19:09	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Flint Ink 13651432

Pace Project No.: 92192053

QC Batch: MPRP/15382 Analysis Method: EPA 6010
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET
 Associated Lab Samples: 92192053002, 92192053004

METHOD BLANK: 1151288 Matrix: Water

Associated Lab Samples: 92192053002, 92192053004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium	ug/L	ND	5.0	03/07/14 17:31	
Lead	ug/L	ND	5.0	03/07/14 17:31	

LABORATORY CONTROL SAMPLE: 1151289

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	500	478	96	80-120	
Lead	ug/L	500	483	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1151290 1151291

Parameter	Units	92191957001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chromium	ug/L	7.9	500	486	500	490	96	96	75-125	1	20	
Lead	ug/L	15.9	500	485	500	487	94	94	75-125	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1151292 1151293

Parameter	Units	92191998002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chromium	ug/L	3.9J	500	483	500	480	96	95	75-125	1	20	
Lead	ug/L	ND	500	484	500	480	96	96	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Flint Ink 13651432

Pace Project No.: 92192053

QC Batch: MPRP/15387

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET Filtered

Associated Lab Samples: 92192053002, 92192053004

METHOD BLANK: 1151475

Matrix: Water

Associated Lab Samples: 92192053002, 92192053004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	ND	5.0	03/06/14 21:24	
Lead, Dissolved	ug/L	ND	5.0	03/06/14 21:24	

LABORATORY CONTROL SAMPLE: 1151476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	486	97	80-120	
Lead, Dissolved	ug/L	500	493	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1151477

1151478

Parameter	Units	92192053002 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Chromium, Dissolved	ug/L	ND	500	452	500	459	90	92	75-125	2	20	
Lead, Dissolved	ug/L	ND	500	457	500	461	91	92	75-125	1	20	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Flint Ink 13651432

Pace Project No.: 92192053

QC Batch: MSV/26033 Analysis Method: EPA 8260
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 92192053001, 92192053002, 92192053003, 92192053004

METHOD BLANK: 1153833 Matrix: Water
 Associated Lab Samples: 92192053001, 92192053002, 92192053003, 92192053004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	1.0	03/10/14 12:23	
1,2-Dichloroethane-d4 (S)	%	91	70-130	03/10/14 12:23	
4-Bromofluorobenzene (S)	%	101	70-130	03/10/14 12:23	
Toluene-d8 (S)	%	99	70-130	03/10/14 12:23	

LABORATORY CONTROL SAMPLE: 1153834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	50	47.9	96	70-132	
1,2-Dichloroethane-d4 (S)	%			89	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1153835 1153836

Parameter	Units	92192417001		MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
1,1-Dichloroethene	ug/L	ND	50	50	50	46.3	42.6	93	85	70-166	8	30		
1,2-Dichloroethane-d4 (S)	%							88	86	70-130				
4-Bromofluorobenzene (S)	%							101	100	70-130				
Toluene-d8 (S)	%							99	98	70-130				

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
 without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: Flint Ink 13651432

Pace Project No.: 92192053

QC Batch: OEXT/26346

Analysis Method: EPA 8270

QC Batch Method: EPA 3510

Analysis Description: 8270 Water MSSV

Associated Lab Samples: 92192053002, 92192053004

METHOD BLANK: 1152339

Matrix: Water

Associated Lab Samples: 92192053002, 92192053004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzo(a)anthracene	ug/L	ND	10.0	03/08/14 23:19	
Benzo(a)pyrene	ug/L	ND	10.0	03/08/14 23:19	
Benzo(b)fluoranthene	ug/L	ND	10.0	03/08/14 23:19	
bis(2-Ethylhexyl)phthalate	ug/L	ND	6.0	03/08/14 23:19	
2,4,6-Tribromophenol (S)	%	88	27-110	03/08/14 23:19	
2-Fluorobiphenyl (S)	%	67	27-110	03/08/14 23:19	
2-Fluorophenol (S)	%	40	12-110	03/08/14 23:19	
Nitrobenzene-d5 (S)	%	68	21-110	03/08/14 23:19	
Phenol-d6 (S)	%	24	10-110	03/08/14 23:19	
Terphenyl-d14 (S)	%	94	31-107	03/08/14 23:19	

LABORATORY CONTROL SAMPLE: 1152340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)anthracene	ug/L	50	43.0	86	21-128	
Benzo(a)pyrene	ug/L	50	48.2	96	25-116	
Benzo(b)fluoranthene	ug/L	50	43.4	87	23-117	
bis(2-Ethylhexyl)phthalate	ug/L	50	39.9	80	16-123	
2,4,6-Tribromophenol (S)	%			119	27-110	S0
2-Fluorobiphenyl (S)	%			80	27-110	
2-Fluorophenol (S)	%			49	12-110	
Nitrobenzene-d5 (S)	%			78	21-110	
Phenol-d6 (S)	%			34	10-110	
Terphenyl-d14 (S)	%			91	31-107	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: Flint Ink 13651432

Pace Project No.: 92192053

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

S0 Surrogate recovery outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Flint Ink 13651432

Pace Project No.: 92192053

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92192053002	MW-2A	EPA 3010	MPRP/15382	EPA 6010	ICP/13955
92192053004	MW-8	EPA 3010	MPRP/15382	EPA 6010	ICP/13955
92192053002	MW-2A	EPA 3010	MPRP/15387	EPA 6010	ICP/13946
92192053004	MW-8	EPA 3010	MPRP/15387	EPA 6010	ICP/13946
92192053002	MW-2A	EPA 3510	OEXT/26346	EPA 8270	MSSV/8840
92192053004	MW-8	EPA 3510	OEXT/26346	EPA 8270	MSSV/8840
92192053001	MW-1	EPA 8260	MSV/26033		
92192053002	MW-2A	EPA 8260	MSV/26033		
92192053003	MW-7	EPA 8260	MSV/26033		
92192053004	MW-8	EPA 8260	MSV/26033		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Document Name:
Sample Condition Upon Receipt (SCUR)

Document Revised: December 16, 2013

Page 1 of 2

Document Number:
F-CHR-CS-03-rev.13

Issuing Authority:
Pace Huntersville Quality Office

Client Name: UMT

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Optional

Proj. Due Date:

Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used: IR Gun T1102 T1301 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Temp Correction Factor **T1102**: No Correction **T1301**: No Correction

Corrected Cooler Temp.: 3.6 °C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: Conf-3/5/14

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>Revised Buff. Meter for 12 & 14 not on COC</u>
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required?

Y / N

Person Contacted: Brandy Costner Date/Time: 3/6/14

Comments/ Resolution: Brandy instructed to analyze both Total & Dissolved metals

for MW-2A & MW-8. K6

SCURF Review:

JY

Date:

3/5/14

SRF Review:

JY

Date:

3/6/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92192053



92192053

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company: URS Corporation
Address: 6000 Fairview Rd
Charlotte NC 28210
Email To: Mike Fulkerson
Phone: 704-522-0330 Fax:
Requested Due Date/TAT: Standard

Section B
Required Project Information:

Report To: Mike Fulkerson@urs.com
Copy To: Brendy.Costner@urs.com
Purchase Order No.:
Project Name: Flint IML
Project Number: 13051432

Section C
Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location STATE: NC
 Page: 1 of 1
1798584
 Page 21 of 22

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED		DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB							Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃				
1	MW-1	WT G			3/5/14	1530			3	3									92192053	
2	MW-2A	WT G				1600			3	3									92192053051	
3	MW-7	WT G				1415			3	3									003	
4	MW-8	WT G				1545			3	3									004	
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS: Handy Costner I.D.

RELINQUISHED BY / AFFILIATION: Handy Costner I.D. DATE: 3/5/14 TIME: 1700

ACCEPTED BY / AFFILIATION: [Signature] DATE: 3/5/14 TIME: 1700

Temp in °C: 3.6

Received on Ice (Y/N): Yes

Custody Sealed Cooler (Y/N): Yes

Samples Intact (Y/N): Yes

PRINT Name of SAMPLER: Brendy Costner DATE Signed (MM/DD/YY): 3/5/14

SIGNATURE of SAMPLER: [Signature]

ORIGINAL

F-ALL-Q-0207rev.07, 15-May-2007

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

***** PLEASE BE ADVISED! *****

Sample Method	Constituents <i>ONLY</i> to be Reported
8260	1,1-Dichloroethene
8270	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(a)fluoranthene, bis(2- Ethylhexyl)phthalate
6010	Chromium and Lead

IHSB SITE NAME Former Sinclair & Valentine Site - Flint Ink (NCD083 6778 6311)

DATE & NAME OF DOCUMENT Quarterly Update 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."

Peter Schreck, Secretary Sr. Corp Counsel
Jeff Adamson, NA Regional Manager

Name of Remediating Party

[Signature]
Signature of Remediating Party

7-16-2014
Date

NOTARIZATION

Florida (Enter State)

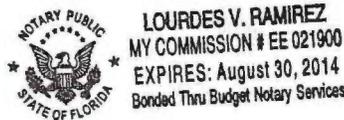
Miami-Dade COUNTY

I, Lourdes V. Ramirez, a Notary Public of said County and State, do hereby certify that Peter W. Schreck did personally appear and sign before me this day, produced proper identification in the form of driver's 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 16th day of July, 2014.

[Signature]
Notary Public (signature)

(OFFICIAL SEAL)



My commission expires: _____

IHSB SITE NAME Former Sinclair; Valentia - First Int'l NW 883 6778 6311
DATE & NAME OF DOCUMENT Quarterly Update Report - Groundwater Sampling & Receipts Journey - July 2014
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.

Robert MacWilliam
Name of Registered Site Manager

[Signature]
Signature of Registered Site Manager

7/16/2014
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."

Robert MacWilliam
Name of Registered Site Manager

[Signature]
Signature of Registered Site Manager

7/16/2014
Date

NOTARIZATION

NORTH CAROLINA (Enter State)

WASION COUNTY

I, PAMELA HALL, a Notary Public of said County and State, do hereby certify that

ROBERT MACWILLIAMS did personally appear and sign before me this day, produced proper identification in the form of NCID, 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 16TH day of JULY, 2014.
[Signature] (OFFICIAL SEAL)
Notary Public (signature)

My commission expires: 08/01/17



APPENDIX B

CHAPTER VII

AREAS OF REGULATED GROUNDWATER USAGE

SECTION I ESTABLISHMENT OF AN AREA OF REGULATED GROUNDWATER USAGE

- (A) The Department shall establish an Area of Regulated Groundwater Usage when:
- 1 a violation of the groundwater standards as referenced in 15A NCAC 2L .0202 (g), (h) or (i) as applicable, or
 - 2 soil contamination in exceedance of the Soil-to-Groundwater Maximum Soil Contaminant Concentration as referenced in 15A NCAC 2L .0115 (m) has occurred, or in violation of 15A NCAC 2L .0202 or in violation of the Oil Pollution Hazardous Substances Control Act of 1978, or
 - 3 such an area is deemed necessary by the Director to protect public health.
- (B) The Area of Regulated Groundwater Usage shall extend 1,500 feet around:
1. the boundary of a defined or partially defined contaminant plume and include the zone in which the contaminant exists; or
 2. the edge of the contaminant source area, including the source area itself, if the contaminant plume has not been defined or partially defined; or
 3. the property boundary of the contamination site, including the contamination site itself, if the source area of the contaminant is unknown and the contaminant plume has not been defined or partially defined.
- (C) The Department may amend the shape or size of the Area of Regulated Groundwater Usage when deemed necessary by the Department because:
1. of changes in groundwater usage, or
 2. of changes in hydrogeologic conditions, or
 3. of a determination by the Director as being necessary to protect public health.

- (D) The Department shall maintain public records identifying parcels subject to the restrictions imposed by areas of regulated groundwater usage. The Department shall make these records available to the public.

SECTION II REPEAL OF AN AREA OF REGULATED GROUNDWATER USAGE

- (A) When, to the satisfaction of the Department, it has been demonstrated that a contamination site and the groundwater quality has been restored to its natural state, the Area of Restricted Groundwater Usage may be repealed by the Department.

SECTION III REQUIREMENTS FOR NEW WATER SUPPLY WELLS WITHIN AN AREA OF REGULATED GROUNDWATER USAGE

- (A) If a public water supply (exclusive of Transient and Non Transient water supply wells) is available, then:
1. a new well will not be permitted 1,000 feet or less from:
 - a. the boundary of a defined or partially defined contaminant plume; or
 - b. the edge of the contaminant source area, if the contaminant plume has not been defined or partially defined; or
 - c. the property boundary of the contamination site, if the source area of the contaminant is unknown and the contaminant plume has not been defined or partially defined
 2. a new well may be permitted at distances greater than 1,000 feet and up to and including 1,500 feet from:
 - a. the boundary of a defined or partially defined contaminant plume; or
 - b. the edge of the contaminant source area, if the contaminant plume has not been defined or partially defined; or
 - c. the property boundary of the contamination site, if the source area of the contaminant is unknown and the contaminant plume has not been defined or partially defined
 3. a well permitted within the zone defined in Section IV (A) 2 of this Chapter will require:

- a. compliance with well construction standards in Chapter II of these Regulations
 - b. grouting the full extent of the casing
 - c. an initial water sample following well completion per the provisions in Chapter II Section VI Sampling. In addition the water sample must be analyzed for the contaminant(s)-of-concern. A Certified Laboratory must perform the analysis. The analysis must be submitted to the Department for review and approval prior to the well being placed in service.
 - d. biannual sampling (every two years) and analysis for the contaminant(s)-of-concern. A Certified Laboratory must perform the analysis. The analysis must be submitted to the Department within 24 hours if any contaminant is detected. All reports of sample analysis shall be kept by the well Owner for at least six years and provided to the Department upon request. Or the Owner may submit all analytical reports. Sampling is the responsibility of the Owner of the well.
4. the Department may waive or modify sampling requirements on a well by well basis if:
- a. it can be demonstrated that a non-impacted well of similar dimensions to the subject well exist between the contamination plume and the new well, or
 - b. a hydrogeologic review of the Area of Regulated Groundwater Usage, conducted by a North Carolina Professional Engineer or Licensed Geologist and presented to the Department, indicates that the well is not at risk of being impacted by the contamination plume. The Department must concur with the findings of the review before modification to the sampling schedule may be granted.
5. a new well determined to contain a contaminant must be treated to remove the contaminant(s)-of-concern, such that the water would be considered potable, for as long as the well is active and the raw water contains the contaminant(s)-of-concern. A notice of Groundwater Contamination must be notarized and recorded with the Register of Deeds prior to the Department issuing a Certificate of Completion and the well being placed in service.
6. treated water must be sampled according to manufacturer's specifications to insure the treatment system is functioning as designed. The period of sampling shall be sufficient to insure against contaminant breakthrough.

7. the water sample must be analyzed for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. Sample results must be submitted to the Department for review.
 8. treatment is the responsibility of the responsible party except under the following condition:
 - a. the contaminant(s) identified in the water sample taken from the subject well is not associated with the contaminant released by the Responsible Party.
 9. in instances where a contaminant(s) detected in a water sample is not associated with the contaminant released by the responsible party or where no responsible party has been identified, the well Owner is responsible for water treatment.
 10. a well which contains contaminant(s), but is not active must be permanently abandoned per provisions of Chapter II Section VIII paragraph B (7) of these Regulations.
- (B) If a public water supply is not available, then:
1. a new well may be permitted inside the Area of Regulated Groundwater Usage so long as the well is located outside the defined or partially defined contaminant plume and the well location meets all other site and setback requirements listed in Chapter II of these Regulations.
 2. a new well constructed within an Area of Regulated Groundwater Usage will require:
 - a. compliance with the well construction standards in Chapter II of these Regulations
 - b. grouting the full extent of the casing
 - c. an initial water sample following well completion per the provisions in Chapter II Section VI Sampling. In addition the water sample must be analyzed for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. The analysis must be submitted to the Department for review and approval prior to the well being placed in service.
 - d. biannual sampling (every two years) and analysis for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis.

The analysis must be submitted to the Department within twenty-four hours if any contaminant is detected. All reports of sample analysis shall be kept by the responsible party for at least six years and provided to the Department upon request. Biannual sampling is the responsibility of the contamination plumes responsible party.

3. the Department may waive or modify periodic sampling requirements on a well by well basis if:
 - a. it can be demonstrated that a non-impacted well of similar dimensions to the subject well exist between the contamination plume and the subject well, or
 - b. a hydrogeologic review of the Area of Regulated Groundwater Usage, conducted by a North Carolina Professional Engineer or Licensed Geologist and presented to the Department, indicates that the well is not at risk of being impacted by the contaminant plume. The Department must concur with the findings of the review before modification to the sampling schedule may be granted.
4. if the contamination site in question is an orphan site with the State or federal government acting in place of the responsible party, or if no responsible party has been assigned then periodic sampling may be completed by the Department if funding is available. Otherwise, periodic sampling and analysis becomes the responsibility of the well Owner. A laboratory certified by the State must perform the analysis. The analysis must be submitted to the Department for review.
5. water from a new well that is determined to contain a contaminant(s) must be treated to remove the contaminant(s)-of-concern, such that the water would be considered potable, for as long as the well is active and the raw water contains the contaminant(s)-of-concern. A notice of Groundwater Contamination must be notarized and recorded with the Register of Deeds prior to the Department issuing a Certificate of Completion and the well being placed in service.
6. treated water must be sampled according to manufacturer's specifications to insure the treatment system is functioning as designed. The period of sampling shall be sufficient to insure against contaminant breakthrough.
7. the water sample must be analyzed for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. Sample results must be submitted to the Department for review.

8. treatment is the responsibility of the responsible party except under the following condition:
 - a. the contaminant(s) identified in the water sample taken from the subject well is not associated with the contaminant released by the Responsible Party.
9. in instances where a contaminant(s) detected in a water sample is not associated with the contaminant released by the responsible party or where no responsible party has been identified, the well Owner is responsible for water treatment.
10. a well which contains contaminant(s), but is not active must be permanently abandoned per provisions of Chapter II Section VIII paragraph B (7) of these regulations.

SECTION IV REQUIREMENTS FOR EXISTING WATER SUPPLY WELLS
WITHIN AN AREA OF REGULATED GROUNDWATER USAGE.

- (A) An existing water supply well located within an Area of Regulated Groundwater Usage will require:
1. an initial water sample following identification of the contaminant. The water sample must be analyzed for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. The analysis must be submitted to the Department for review.
 2. biannual sampling (every two years) and analysis for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. The analysis must be submitted to the Department for review. Biannual sampling is the responsibility of the contaminant plumes responsible party.
 3. the Department may waive or modify sampling requirements on a well by well basis if:
 - a. it can demonstrated that a non-impacted well of similar dimensions to the subject well exist between the contaminant plume and the subject well, or
 - b. a hydrogeologic review of the Area of Regulated Groundwater Usage, conducted by a North Carolina Professional Engineer or a North Carolina Licensed Geologist and presented to the Department, indicates that the well is not at risk of being impacted by the contaminant plume. The

Department must concur with the findings of the review before modification to the sampling schedule may be granted.

4. if the contamination site in question is an orphan site with the State or federal government acting in place of the responsible party, or if no responsible party has been assigned then periodic sampling may be completed by the Department if funding is available. Otherwise, sampling and analysis becomes the responsibility of the well Owner. The water sample must be analyzed for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. The analysis must be submitted to the Department for review.
5. water from an existing water supply well that is determined to contain a contaminant(s) must be treated to remove the contaminant(s)-of-concern, such that the water would be considered potable, for as long as the well is active and the raw water contains the contaminant(s)-of-concern. A notice of Groundwater Contamination must be notarized and recorded with the register of Deeds.
6. treated water must be sampled according to manufacturer's specifications to insure the treatment system is functioning as designed. The period of sampling shall be sufficient to insure against contaminant breakthrough.
7. the water sample must be analyzed for the contaminant(s)-of-concern. A laboratory certified by the State must perform the analysis. Sample results must be submitted to the Department for review.
8. treatment is the responsibility of the responsible party except under the following condition:
 - a. the contaminant(s) identified in the water sample taken from the subject well is not associated with the contaminant released by the Responsible Party.
9. in instances where a contaminant(s) detected in a water sample is not associated with the contaminant released by the responsible party or no responsible party has been identified the well Owner is responsible for water treatment.
10. a well which contains a contaminant(s) but is not active must be permanently abandoned per provisions of Chapter II Section VIII paragraph B (7).

APPENDIX C

Arnold, Kevin

To: MacWilliams, Rob
Subject: RE: Flint Ink REC Site - Groundwater Contamination and Well Regulations

From: Caldwell, Shawna [<mailto:Shawna.Caldwell@mecklenburgcountync.gov>]
Sent: Friday, February 28, 2014 4:39 PM
To: MacWilliams, Rob; Fulkerson, Mike
Subject: RE: Flint Ink REC Site - Groundwater Contamination and Well Regulations

Rob,

I apologize that I didn't get a reply to you sooner.

In response to your e-mail, I can verify that; (1) your understanding of the Mecklenburg County well permitting requirements as stated in your Feb. 20, 2014 e-mail received on Feb. 24, 2014 is correct in respect to the installation requirements of a water supply well within 1,000 feet of the area of impacted groundwater beneath the site; and, (2) that the Flint Ink site located at 515 S. Turner Ave., Charlotte, NC 28208, is indeed a known/documented contamination site on file with Mecklenburg County.

Please let me know if you have any questions. Have a good weekend.

Shawna W. Caldwell, P.G.
Hydrogeologist
Mecklenburg County Government
Groundwater and Wastewater Services
700 North Tryon Street
Charlotte, NC 28202
GWS Phone: 704.336.5103
GWS Fax: 704.336.4391
Direct Line: 704.432.4232
Cell Phone: 704.622.5168
shawna.caldwell@mecklenburgcountync.gov

From: MacWilliams, Rob
Sent: Thursday, February 20, 2014 3:02 PM
To: Shawna Caldwell (caldwsw@co.mecklenburg.nc.us); kim.caulk@ncdenr.gov
Cc: Fulkerson, Mike
Subject: Flint Ink REC Site - Groundwater Contamination and Well Regulations

Shawna-

Thanks for talking with Mike and I on Tuesday regarding our ongoing work under the REC Program to address groundwater impacted with 1,1 DCE at the Flint Ink site (Site ID NCD 083 678 631) located at 515 S. Turner Ave., Charlotte, NC 28208. As we discussed, this is an interesting site as the groundwater concentrations of 1,1 DCE at the site are below the NCDENR 2L groundwater standard but above the Federal MCL. Based on recent discussion and guidance from the REC Program on how to address the residual presence of 1,1 DCE in groundwater beneath the site, it's our understanding that the Federal MCL would only be relevant in the event that a public drinking water well is threatened or impacted in accordance with the Applicable or Relevant and Appropriate Requirements (ARARs) for the site. Based on assessment activities completed to date at the site no water supply wells have been identified as part of the completion of required receptor surveys. URS plans to update the receptor survey one more time as it's been greater than three years since the last survey; however, we don't anticipate the presence of any missed or recently installed

water supply wells. In respect to the ARARs our concern would then be that no water supply wells be installed in the future that may be jeopardized by the residual presence of 1,1 DCE in groundwater beneath the site.

Based on a review of the groundwater regulations promulgated by Mecklenburg County to protect citizens from drinking contaminated groundwater, rules are in place that require that Mecklenburg County provide approval (permit to construct) for the installation of a water supply well. Due to the impacts identified in soil and groundwater at the Flint Ink site, it is our understanding that the site area would be considered “an area of regulated groundwater usage” by Mecklenburg County. In accordance with the Mecklenburg County Groundwater Well Regulations, in areas of regulated groundwater usage a new water supply well will not be permitted 1,000 feet or less from the boundary of the contaminant plume if public water supply is available. Water supply is available throughout the area of the site.

Checking on the Mecklenburg County well information system website

(http://meckmap.mecklenburgcountync.gov/WIS_3/index.html) the Flint Ink site is identified as a contaminated site under REC Program. So that URS can address as part of our ongoing groundwater assessment under the REC program that no one can create a potential drinking water exposure pathway in the future can you verify that; (1) my understanding of the Mecklenburg County well permitting requirements is correct in respect to the installation requirements of a water supply well within 1,000 feet of the area of impacted groundwater beneath the site; and, (2) that the Flint Ink site located at 515 S. Turner Ave., Charlotte, NC 28208, is indeed a known/documented contamination site on file with Mecklenburg County.

Thanks so much for your assistance and we really appreciate your help in this non-typical groundwater incident.

Robert MacWilliams, PG, RSM
Principal Geologist – Vice President

URS Corporation – North Carolina
6000 Fairview Road, Suite 200
Charlotte, NC 28210
Direct Line: 704-716-0730
Cell: 980-721-2792

This e-mail and any attachments contain URS Corporation confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

Arnold, Kevin

From: Pitner, Andrew <andrew.pitner@ncdenr.gov>
Sent: Wednesday, May 27, 2015 10:34 AM
To: Arnold, Kevin
Subject: RE: Flint Ink - Former Sinclair and Valentine, Facility ID No. 083-6778631

Hi Kevin,
I'm in receipt of the email below. Thanks for the notice.
Andrew

Andrew Pitner, P.G. - Andrew.Pitner@ncdenr.gov
Division of Water Resources - Water Quality Regional Operations Section
Mooresville Regional Office (MRO)
North Carolina Department of Environment & Natural Resources
610 East Center Avenue, Suite 301, Mooresville, NC 28115
MRO Main Phone: (704) 663-1699
Direct Office Phone: (704) 235-2180
MRO Fax: (704) 663-6040
DWR website: <http://www.ncwater.org>

NOTICE: Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.

From: Arnold, Kevin [<mailto:kevin.arnold@aecom.com>]
Sent: Wednesday, May 27, 2015 10:22 AM
To: Pitner, Andrew
Cc: MacWilliams, Rob
Subject: Flint Ink - Former Sinclair and Valentine, Facility ID No. 083-6778631

Hello Andrew,
I spoke with you on May 15, 2015, regarding 1,1-DCE concentrations in groundwater at the former Sinclair and Valentine facility in Charlotte, NC.

Attached is notification of 1,1-DCE concentrations in groundwater which exceed the federal MCL but are below the North Carolina 2L groundwater standard on the former Sinclair and Valentine property. The attachment provides notification that groundwater at this site may not be suitable for use as drinking water until such time that EPA revises their MCLs to reflect current health-based concentrations. This notice is a requirement of the NCDENR REC Program.

Please respond to this e-mail so I know you have received.

Feel free to contact me if you have questions. Thanks.

Kevin Arnold, P.G., CHMM
Project Manager
D 919-461-1354 C 404-550-8212
kevin.arnold@aecom.com

AECOM

AECOM Technical Services of North Carolina, Inc.
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
T 1-919-461-1100 F 1-919-461-1415
www.aecom.com

[Twitter](#) | [Facebook](#) | [LinkedIn](#) | [Google+](#)

This e-mail and any attachments contain AECOM confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.



May 27, 2015

Division of Water Resources

Water Quality Regional Operations Section Mooresville Regional Office
North Carolina Department of Environment & Natural Resources
610 East Center Avenue, Suite 301
Mooresville, NC 28115

Att: Mr. Andrew Pitner, PG
Supervisor

Re: Notification of Site Closure Request
Flint Ink (Former Sinclair & Valentine Site)
515 South Turner Avenue
Charlotte, North Carolina
NCD Facility ID No. 083 6778 631

Dear Mr. Pitner:

URS Corporation – North Carolina (URS) is providing you with notification concerning the planned closure of the above referenced Site which contains concentrations of 1,1-DCE in groundwater which exceed the federal MCL but are below the North Carolina 2L groundwater standard. The intent of this notification is to inform you that groundwater at this site may not be suitable for use as drinking water until EPA revises their MCLs to reflect current health-based concentrations. This notice is a requirement of the NCDENR REC Program. The following maps are attached for the Site:

Figure 1 - Site Location;

Figure 2 - Aerial View;

Figure 3 – Groundwater Quality Map (contains most recent data from monitoring wells associated with the site); and

Figure 4 – Priority List Sites Map.

If you have any questions or require additional information please do not hesitate to call either Rob MacWilliams at 704-522-0330 or Kevin Arnold at 919-461-1354.

Sincerely,

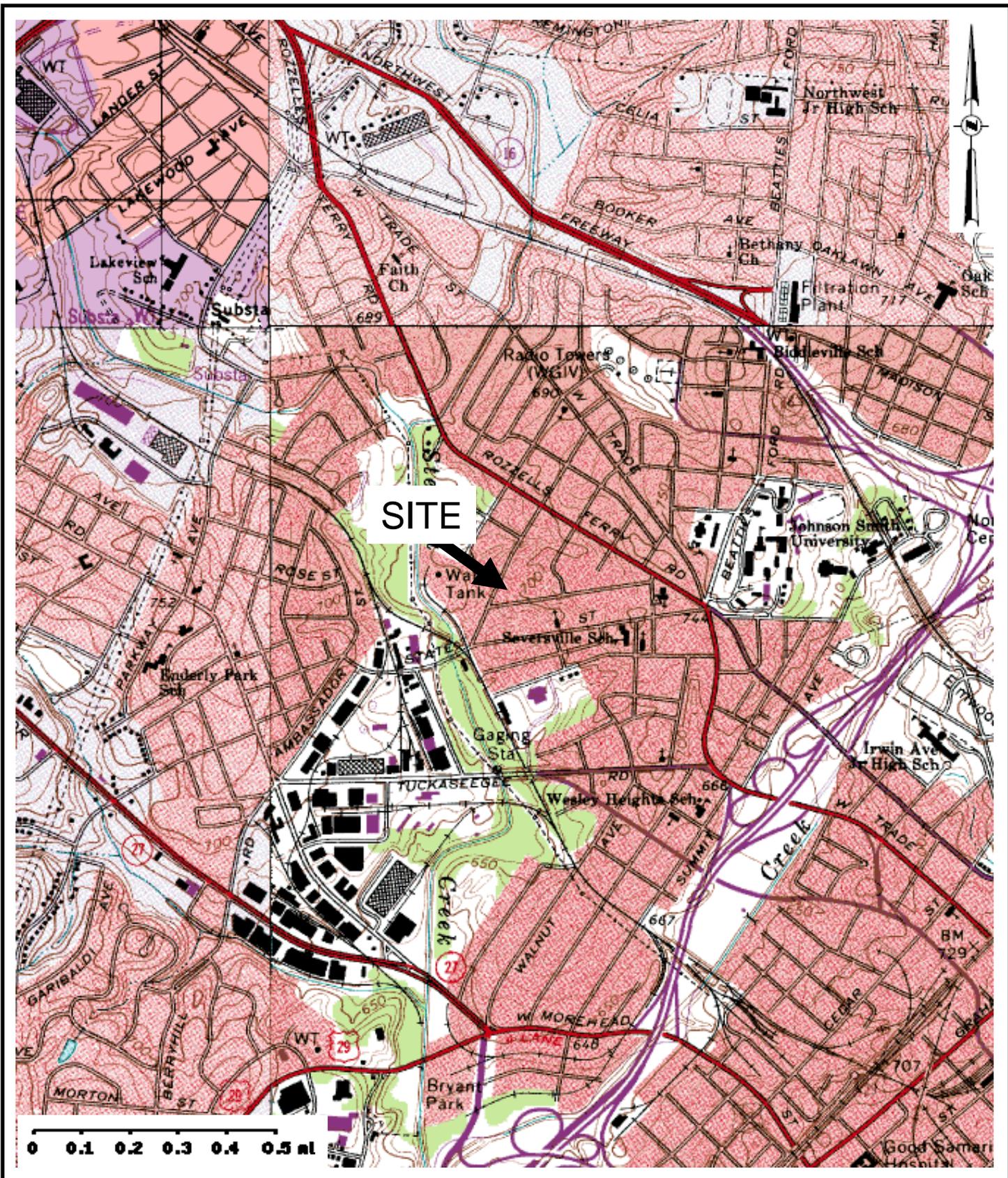
URS CORPORATION – NORTH CAROLINA

Kevin Arnold, PG, CHMM
Project Manager
Manager

Robert H. MacWilliams, PG, RSM
Vice President/Senior Program

URS Corporation – North Carolina
6000 Fairview Drive, Suite 200
Charlotte, North Carolina 28210
(704) 522-0330 Phone
(704) 522-0063 Fax

FIGURES

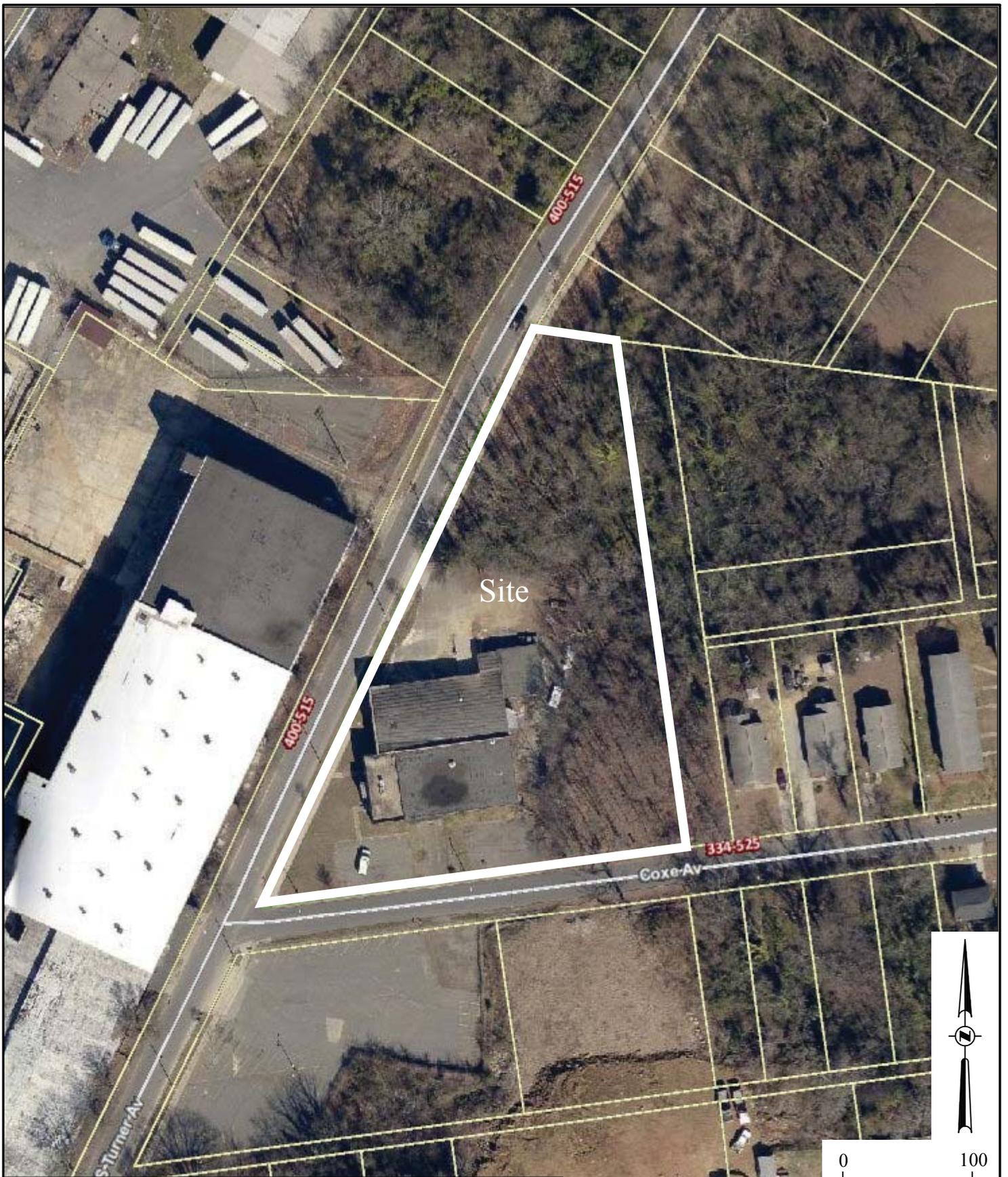


Reference: 7.5 Minute USGS Topographic Map: Charlotte East, North Carolina (1991)



Figure 1
Site Location Map

Former Flint Ink Facility
515 South Turner Avenue – Charlotte, North Carolina



Source: Polaris 3G - Mecklenburg County, North Carolina

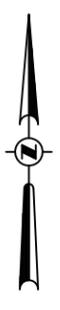


URS CORPORATION - NORTH CAROLINA
 SOUTHPARK TOWERS
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210
 TEL: (704) 522-0330
 FAX: (704) 522-0063

Aerial View
 Site Location Map
 515 S. Turner Avenue
 Charlotte, North Carolina

DRAWN BY: JLW - 5/19/15	CHECKED BY: KRA - 5/19/15	PROJECT NO. : 13651432
----------------------------	------------------------------	---------------------------

SHEET
Figure 2



LEGEND

- MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- 672.52 GROUNDWATER ELEVATION (ft. Above MSL)
- (672.78) GROUNDWATER ELEVATION for MW-1D Not Used in Countour
- POTENTIOMETRIC CONTOUR INTERVAL

Note: GW Contours created using Kriging contour method in Surfer.

ug/L MICROGRAMS PER LITER
 ND NOT DETECTED
 NA NOT ANALYZED

MW-7	NC 2L
3/5/2014	
ND	350

ALL CONCENTRATIONS SHOWN ARE IN ug/L.

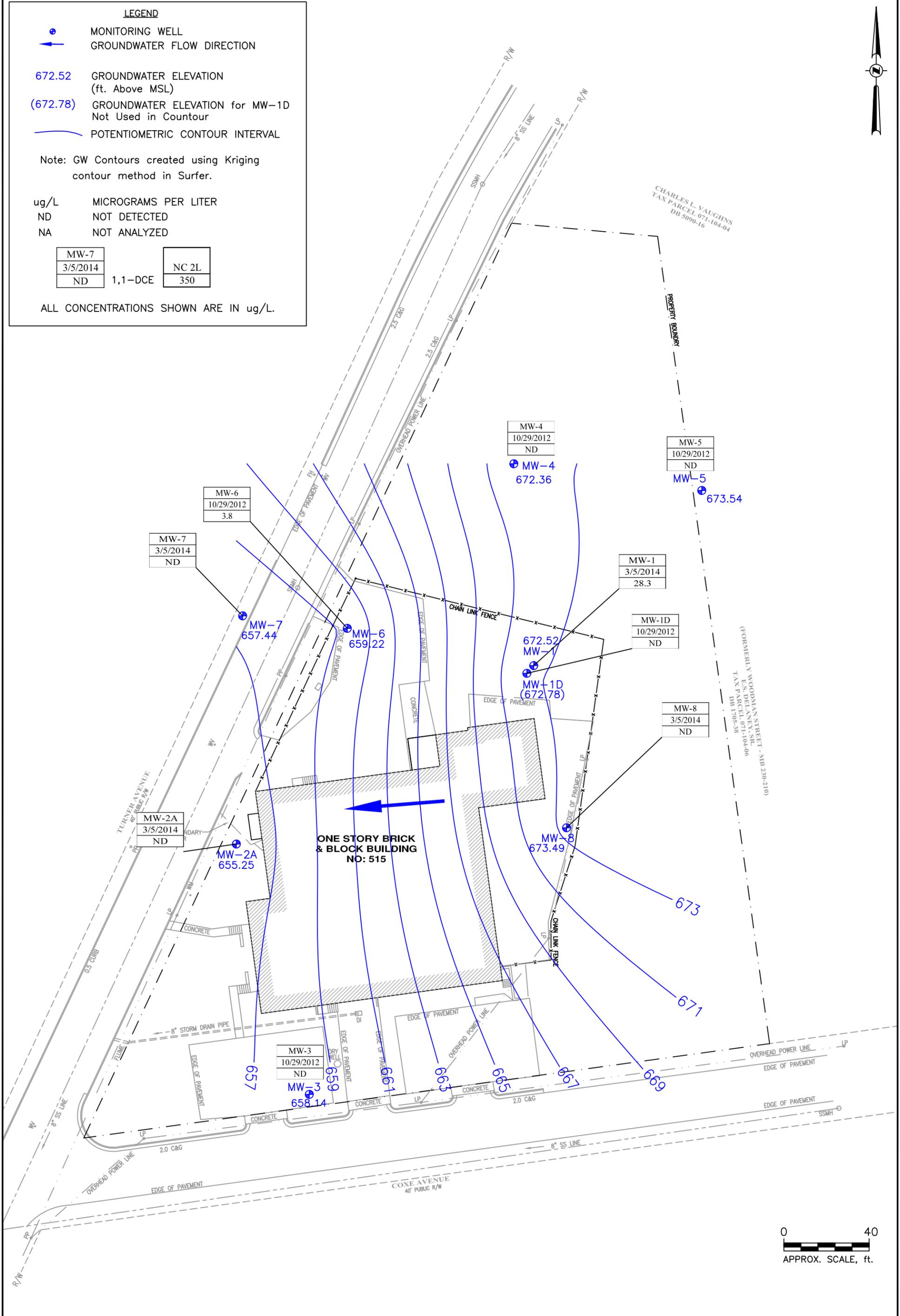
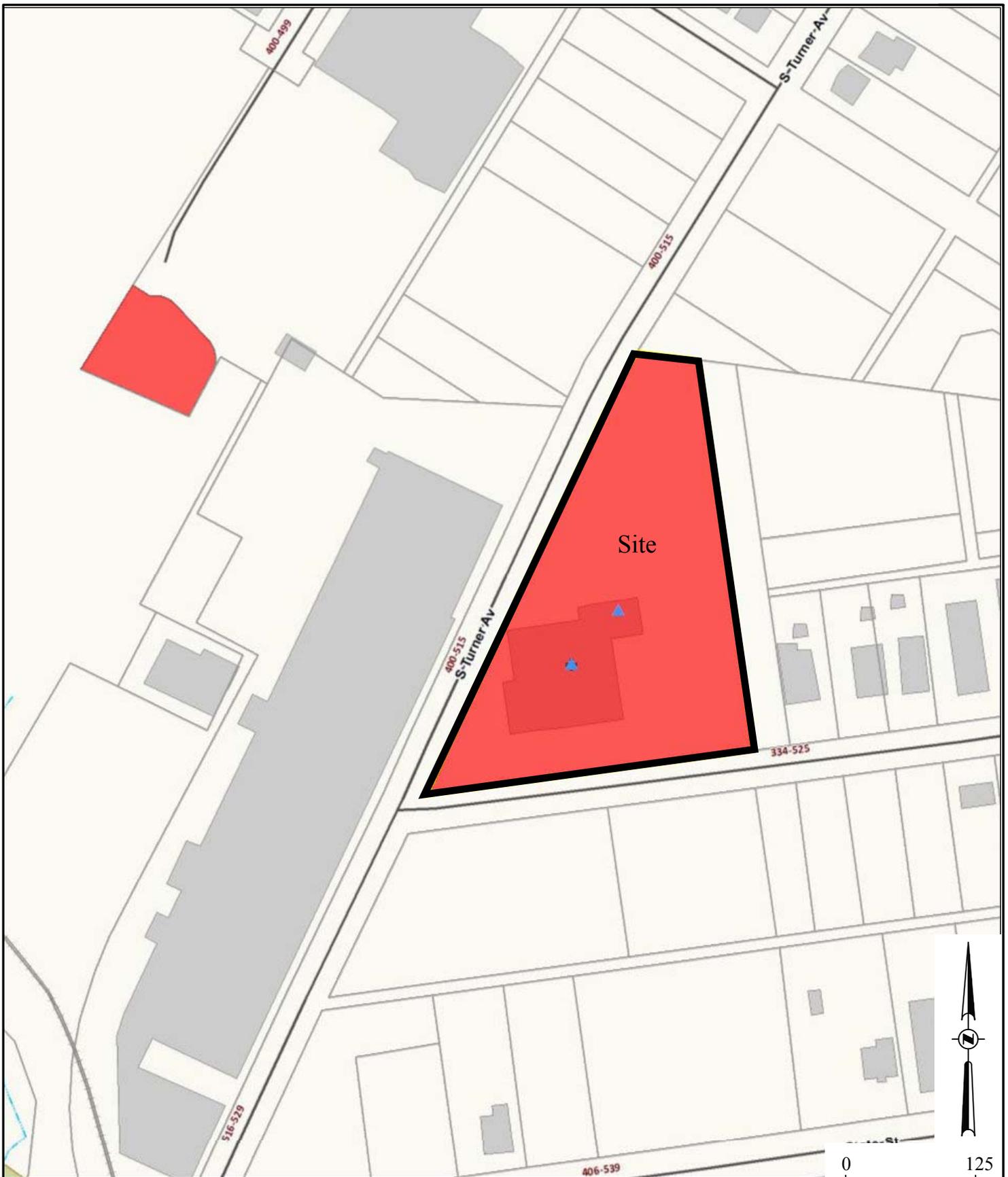


Figure 3
 DRAWN BY: BGS
 CHECKED BY: KA
 PROJECT NO.: 60408261

SITE MAP

URS CORPORATION - NORTH CAROLINA
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210
 TEL: (704) 522-0330
 FAX: (704) 522-0063

GROUNDWATER QUALITY MAP: 1,1-DCE
 FORMER FLINT INK FACILITY
 515 SOUTH TURNER AVENUE
 CHARLOTTE, NORTH CAROLINA



Note: Sites shown in red are known contamination sites
 Source: Mecklenburg County Well Information System 3.0



URS CORPORATION - NORTH CAROLINA
 SOUTHPARK TOWERS
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210
 TEL: (704) 522-0330
 FAX: (704) 522-0063

Mecklenburg County
 Priority List Sites Map
 515 S. Turner Avenue
 Charlotte, North Carolina

DRAWN BY: JLW - 5/19/15	CHECKED BY: KRA - 5/19/15	PROJECT NO. : 13651432
----------------------------	------------------------------	---------------------------

SHEET
Figure 4

From: [Setzer, Britt](#)
To: [Arnold, Kevin](#)
Cc: [MacWilliams, Rob](#)
Subject: RE: Flint Ink - Former Sinclair and Valentine, Facility ID No. 083-6778631
Date: Thursday, May 28, 2015 8:11:10 AM

Thanks for the information. Although this area appears to be predominately served by municipal water, we will retain this information for any future public well siting requests we may receive.

Britt Setzer - Britt.Setzer@ncdenr.gov

Regional Engineer

North Carolina Department of Environment & Natural Resources

Division of Water Resources - Public Water Supply Section

610 East Center Avenue, Suite 301

Mooresville, NC 28115

Ph: (704) 663-1699 Fax: (704) 663-3772

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties unless the content is exempt by statute or other regulation.

From: Arnold, Kevin [<mailto:kevin.arnold@aecom.com>]
Sent: Wednesday, May 27, 2015 6:07 PM
To: Setzer, Britt
Cc: MacWilliams, Rob
Subject: Flint Ink - Former Sinclair and Valentine, Facility ID No. 083-6778631

Hello Britt,

Attached is notification of 1,1-DCE concentrations in groundwater which exceed the federal MCL but are below the North Carolina 2L groundwater standard on the former Sinclair and Valentine property. The attachment provides notification that groundwater at this site may not be suitable for use as drinking water until such time that EPA revises their MCLs to reflect current health-based concentrations. This notice is a requirement of the NCDENR REC Program.

Please respond to this e-mail so I know you have received.

Feel free to contact me if you have questions. Thanks.

Kevin Arnold, P.G., CHMM

Project Manager

D 919-461-1354 C 404-550-8212

kevin.arnold@aecom.com

AECOM

AECOM Technical Services of North Carolina, Inc.

URS Corporation - North Carolina

1600 Perimeter Park Drive, Suite 400

Morrisville, NC 27560

T 1-919-461-1100 F 1-919-461-1415

www.aecom.com

[Twitter](#) | [Facebook](#) | [LinkedIn](#) | [Google+](#)

This e-mail and any attachments contain AECOM confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.



May 27, 2015

Division of Water Resources
Public Water Supply Section Mooresville Regional Office
North Carolina Department of Environment & Natural Resources
610 East Center Avenue
Mooresville, NC 28115

Att: Mr. Britt Setzer, Regional Engineer
Program Supervisor

Re: Notification of Site Closure Request
Flint Ink (Former Sinclair & Valentine Site)
515 South Turner Avenue
Charlotte, North Carolina
NCD Facility ID No. 083 6778 631

Dear Mr. Setzer:

URS Corporation – North Carolina (URS) is providing you with notification concerning the planned closure of the above referenced Site which contains concentrations of 1,1-DCE in groundwater which exceed the federal MCL but are below the North Carolina 2L groundwater standard. The intent of this notification is to inform you that groundwater at this site may not be suitable for use as drinking water until EPA revises their MCLs to reflect current health-based concentrations. This notice is a requirement of the NCDENR REC Program. The following maps are attached for the Site:

Figure 1 - Site Location;

Figure 2 - Aerial View;

Figure 3 – Groundwater Quality Map (contains most recent data from monitoring wells associated with the site); and

Figure 4 – Priority List Sites Map.

If you have any questions or require additional information please do not hesitate to call either Rob MacWilliams at 704-522-0330 or Kevin Arnold at 919-461-1354.

Sincerely,

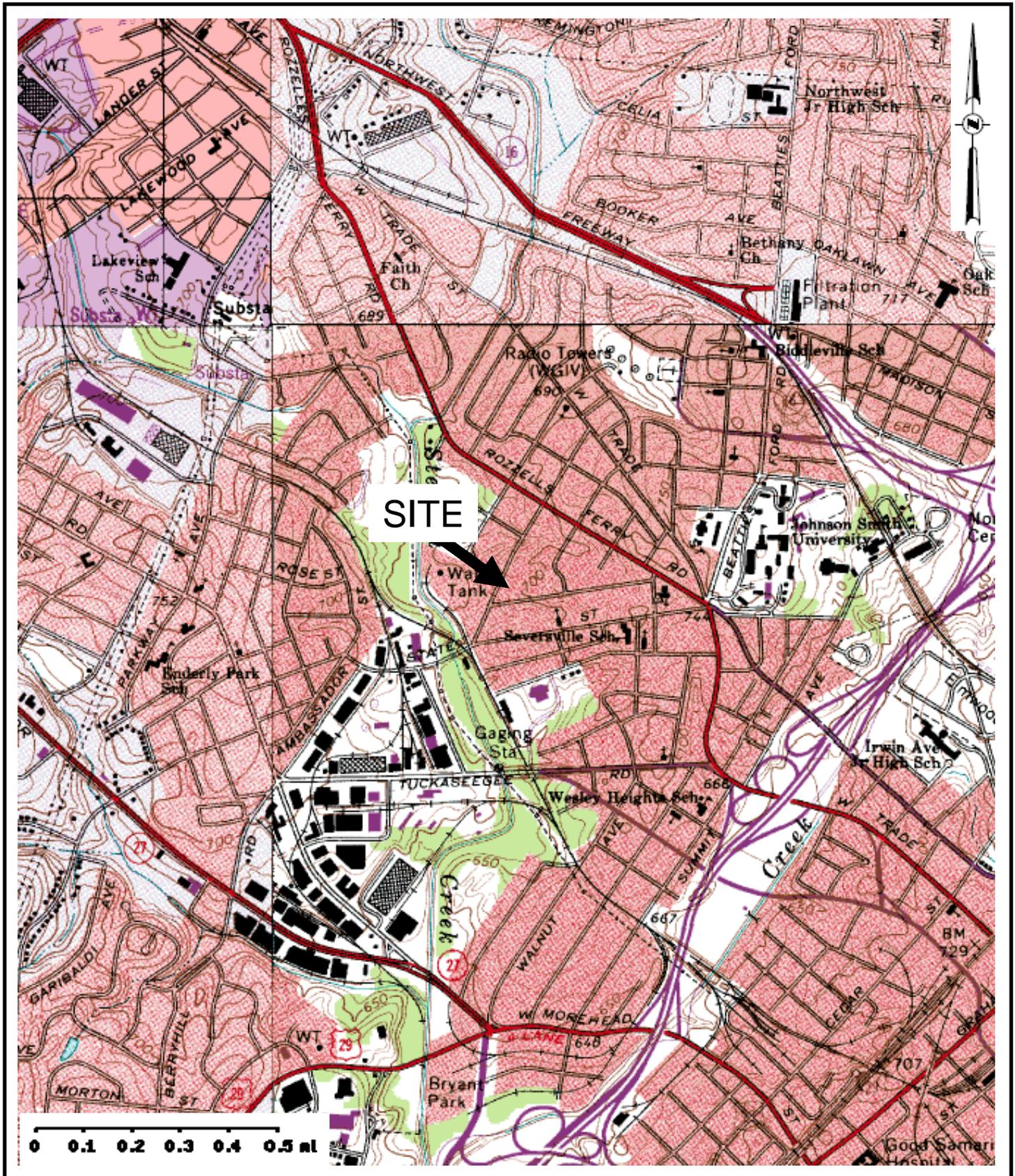
URS CORPORATION – NORTH CAROLINA

Kevin Arnold, PG, CHMM
Project Manager

Robert H. MacWilliams, PG, RSM
Vice President

URS Corporation – North Carolina
6000 Fairview Drive, Suite 200
Charlotte, North Carolina 28210
(704) 522-0330 Phone
(704) 522-0063 Fax

FIGURES

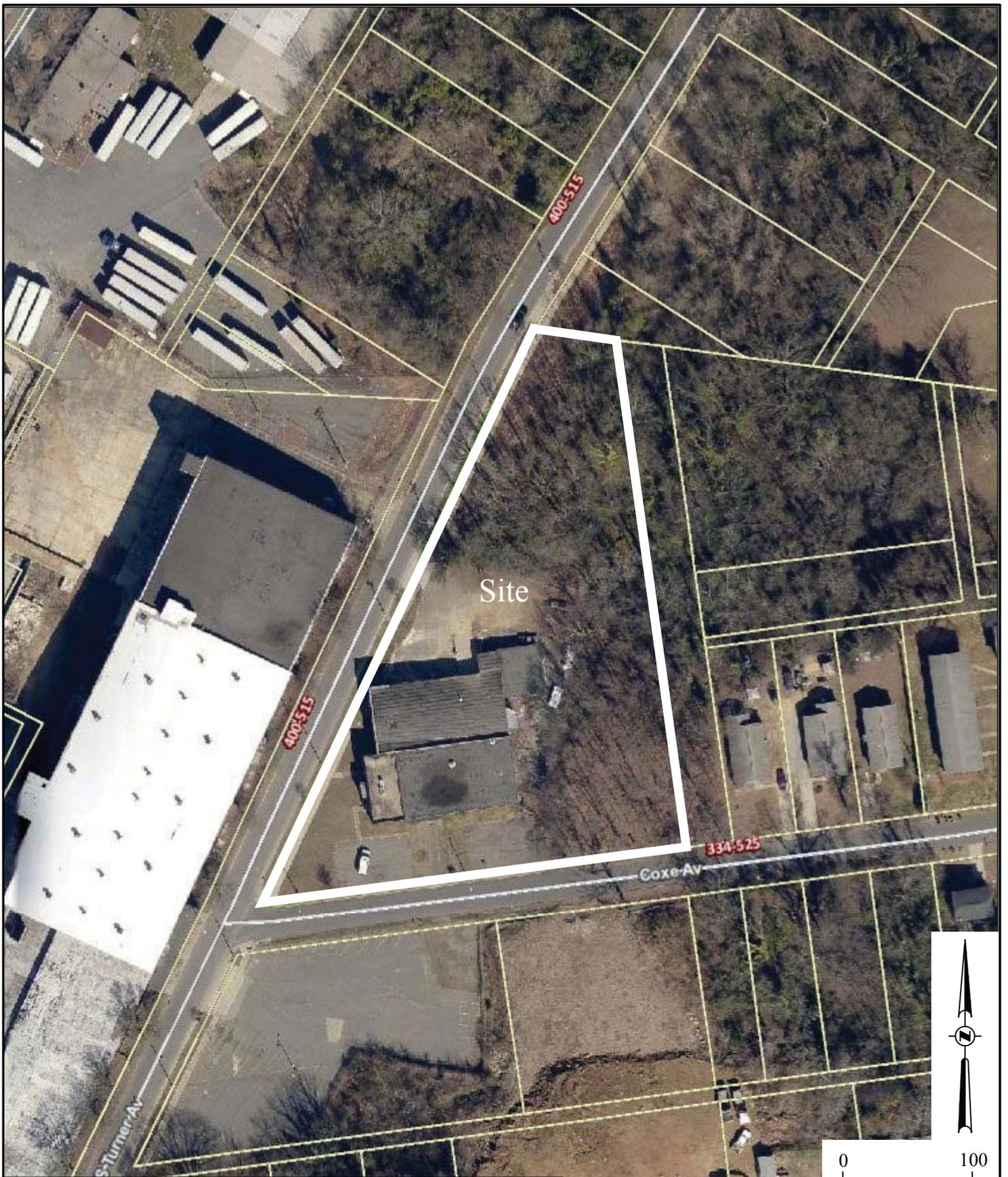


Reference: 7.5 Minute USGS Topographic Map: Charlotte East, North Carolina (1991)



Figure 1
Site Location Map

Former Flint Ink Facility
515 South Turner Avenue – Charlotte, North Carolina



Source: Polaris 3G - Mecklenburg County, North Carolina

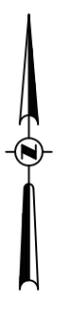


URS CORPORATION - NORTH CAROLINA
 SOUTHPARK TOWERS
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210
 TEL: (704) 522-0330
 FAX: (704) 522-0063

Aerial View
 Site Location Map
 515 S. Turner Avenue
 Charlotte, North Carolina

DRAWN BY: JLW - 5/19/15	CHECKED BY: KRA - 5/19/15	PROJECT NO. : 13651432
----------------------------	------------------------------	---------------------------

SHEET
Figure 2



LEGEND

- MONITORING WELL
- GROUNDWATER FLOW DIRECTION
- 672.52 GROUNDWATER ELEVATION (ft. Above MSL)
- (672.78) GROUNDWATER ELEVATION for MW-1D Not Used in Countour
- POTENTIOMETRIC CONTOUR INTERVAL

Note: GW Contours created using Kriging contour method in Surfer.

ug/L MICROGRAMS PER LITER
 ND NOT DETECTED
 NA NOT ANALYZED

MW-7	NC 2L
3/5/2014	
ND	350

ALL CONCENTRATIONS SHOWN ARE IN ug/L.

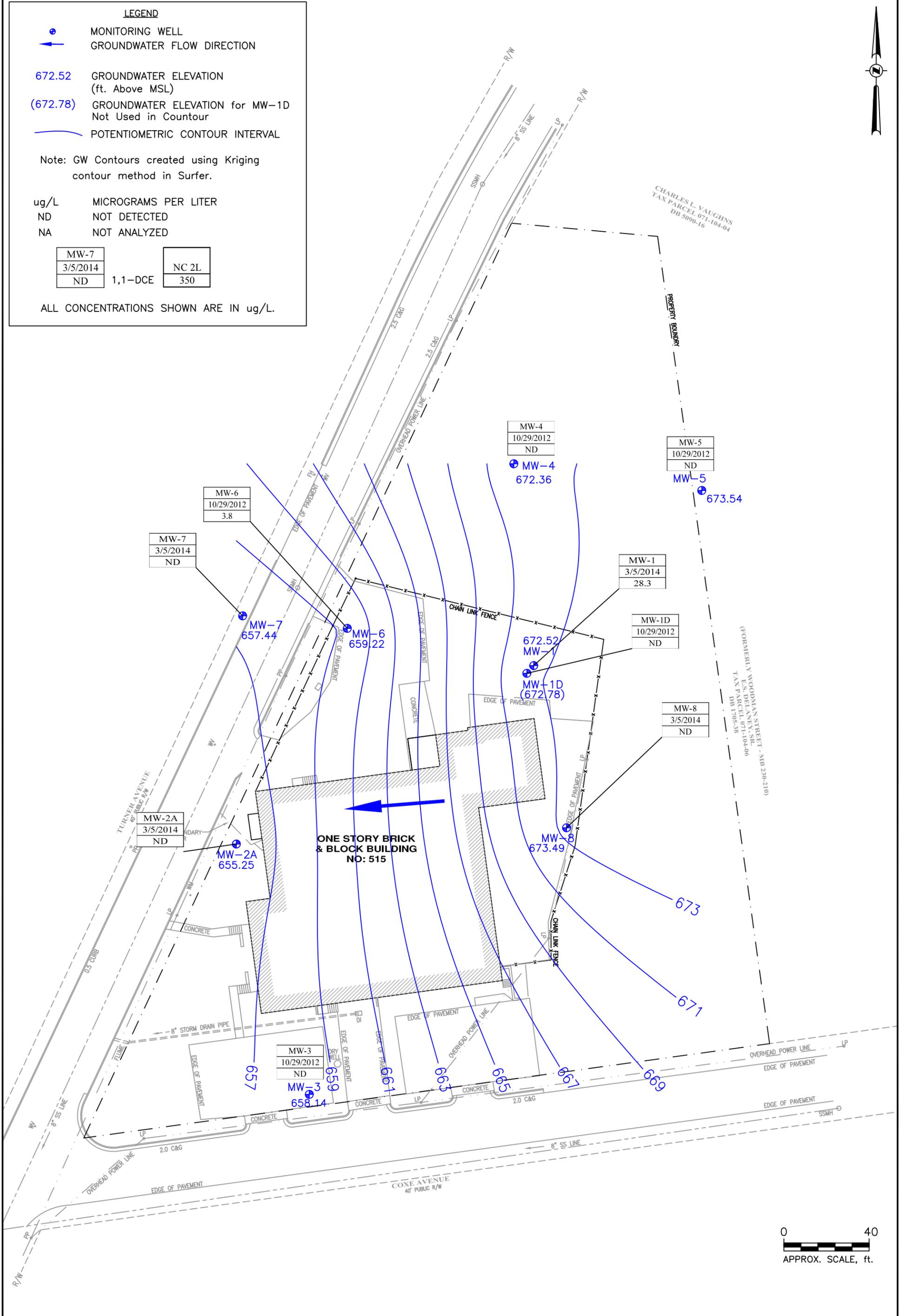
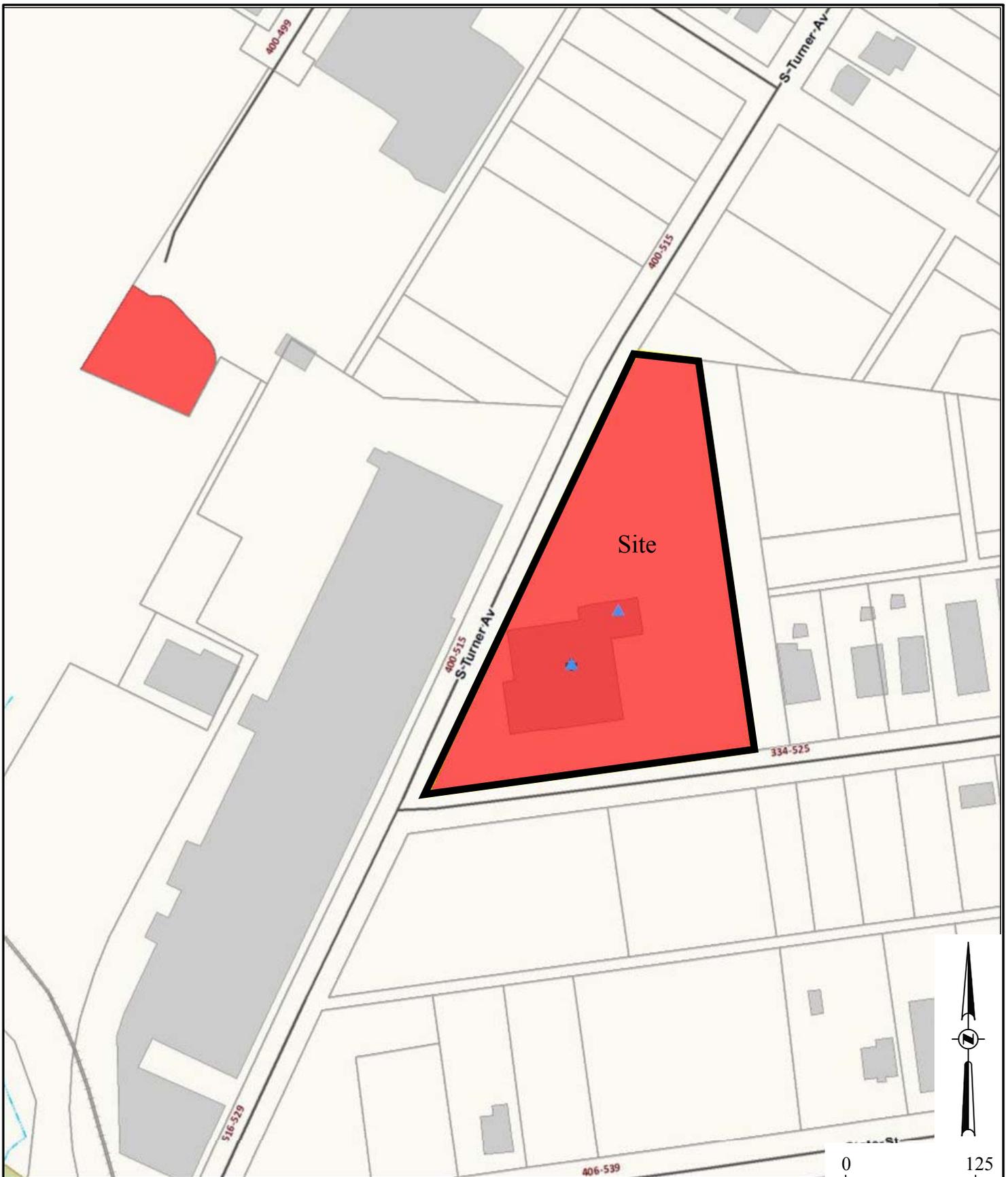


Figure 3
 DRAWN BY: BGS
 CHECKED BY: KA
 PROJECT NO.: 60408261

SITE MAP

URS CORPORATION - NORTH CAROLINA
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210
 TEL: (704) 522-0330
 FAX: (704) 522-0063

GROUNDWATER QUALITY MAP: 1,1-DCE
 FORMER FLINT INK FACILITY
 515 SOUTH TURNER AVENUE
 CHARLOTTE, NORTH CAROLINA



Note: Sites shown in red are known contamination sites
 Source: Mecklenburg County Well Information System 3.0



URS CORPORATION - NORTH CAROLINA
 SOUTHPARK TOWERS
 6000 FAIRVIEW ROAD, SUITE 200
 CHARLOTTE, NC 28210
 TEL: (704) 522-0330
 FAX: (704) 522-0063

Mecklenburg County
 Priority List Sites Map
 515 S. Turner Avenue
 Charlotte, North Carolina

DRAWN BY: JLW - 5/19/15	CHECKED BY: KRA - 5/19/15	PROJECT NO. : 13651432
----------------------------	------------------------------	---------------------------

SHEET
Figure 4