Final Report
for the Removal Action
at the Zonolite Road Site (GAO 144)
DeKalb County, Georgia

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
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April 2012

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CERTIFICATION

Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed Date

Robert J. Medler 4/24/2012

Robert J. Medler
Director
Remedium Group, Inc.
A Subsidiary of W. R. Grace & Co.

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ACRONYMS

ABS	Activity-Based Sampling
AOC	Administrative Settlement Agreement and Order on Consent
CARB	California Air Resources Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
EPD	Environmental Protection Division
GAO	Government Accountability Office
HASP	Health and Safety Plan
MAS	Materials Analytical Services
NIOSH	National Institute of Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
QAPP	Quality Assurance Project Plan
QMP	Quality Management Plan
RCRA	Resource Conservation and Recovery Act
START	Superfund Technical Assistance and Response Team
SVOC	Semivolatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TEM	Transmission Electron Microscopy
URS	URS Corporation
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY

In 2010, the U.S. Environmental Protection Agency (EPA) conducted a removal site evaluation at the W.R. Grace & Co. - Conn. former Zonolite Road Site in Atlanta, DeKalb County, Georgia. The site evaluation was in response to an EPA initiative to investigate vermiculite facilities that received vermiculite concentrate from the W.R. Grace vermiculite mine in Libby, Montana. The former Zonolite Road vermiculite expansion site operated from 1950 to 1970, and received between 499 and 1,225 tons of vermiculite concentrate from the mine in Libby, Montana. EPA and EPA's Superfund Technical Assistance and Response Team (START) contractor conducted activity-based air sampling (ABS) and bulk material sampling at the site. Asbestos was detected in one ABS air sample in the area that appeared somewhat elevated above the surrounding terrain (the "plateau" area). The preliminary analytical results for bulk samples indicated either non-detect or trace quantities of asbestos, except for two samples that reported low percentage levels of Libby amphibole asbestos (0.5% and 0.75%). In a follow-up investigation, EPA and W.R. Grace collected additional samples from the plateau on December 6, 2010. The results of the sampling confirmed Libby amphibole asbestos within the plateau area. Soil samples collected in the subsurface of the plateau were found to have concentrations ranging from no asbestos found to 2% tremolite. Asbestos was identified in each of the bulk samples of vermiculite from <1% to 2% tremolite.

In March 2011, EPA completed the removal site evaluation and determined that the site met the criteria for removal eligibility. In April 2011, W.R. Grace and EPA entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) to excavate to native soil an elevated area measuring approximately 175 ft by 250 ft. The removal action level for asbestos in soil and the action level for air established by EPA Region 4 for the Zonolite Road site are as follows:

- Soil Removal Action Level: 0.25% Libby amphibole asbestos
- Action Level: 0.02 fibers per cubic centimeter (f/cc) for ABS

In May 2011, W.R. Grace retained URS Corporation (URS) to provide consulting and management activities during the removal action at the Zonolite Road Site. Mobilization and site preparation began on October 31, 2011. Air monitoring activities were conducted at the site throughout the removal action to substantiate that ambient air outside of the work area was not contaminated, show that removal action personnel were protected, and verify that there was no threat to the general public.

Excavation of suspect vermiculite material began in the plateau area and proceeded to the east. The presence of vermiculite was initially estimated at a depth of 2 ft to 3 ft. However, once soil removal began, vermiculite was found at depths varying from 6 ft to 10 ft. The suspect vermiculite material was excavated until native soils were encountered.

Based on visual inspection, suspect vermiculite material was present in an area west of the plateau up to the unnamed creek and south to the drainage ditch along the southern property line. Suspect vermiculite material was also present in the creek berms on the northern and western sides of the site.

After excavation of the area west of the plateau up to the creek berm and the area south of the plateau, the erosion control fencing was adjusted to encompass the cleared area. At this time, two concrete pads were discovered on the eastern part of the site (referred to as the northern and southern concrete pads). After excavation of visible vermiculite in the areas around the southern and northern concrete pads, some suspect material was still observed in the sidewalls of the excavation near the concrete pads. The suspect material was sampled and analyzed by W.R. Grace and EPA for the presence of asbestos. Trace amounts of asbestos were detected in two of the three sidewall samples collected by EPA. This material was excavated, and resampling indicated the soil cleanup standard was achieved. W.R. Grace and EPA also performed soil sampling beneath the concrete pads. Asbestos was not detected above the site cleanup level beneath the concrete pads in both the EPA and W.R. Grace samples. Therefore, the concrete pads were left in place.

The northern and western creek berms were excavated last to prevent flooding of the site during rainfall events. During the creek berm removal process, 50-ft sections of berm were excavated down to native soils and immediately backfilled prior to removing the next section. Previous bulk sample results indicated the native soils met the cleanup standard. The creek berm was restored with backfill from the approved borrow pit.

Excavated material was transported to the EPA-approved Waste Management Pine Bluff Subtitle D Landfill in Ball Ground, Georgia. A total of 1,857 truckloads (approximately 26,064 tons) of excavated material were transported and disposed at the Pine Bluff Landfill during the removal action.

Confirmation bulk soil samples were collected throughout the removal activities from the creek berm area, underneath the southern and northern concrete pads, and in the grids in the excavated area. The bulk samples confirmed that the site soil action level of <0.25% asbestos was met.

To confirm that the asbestos-containing soil was remediated, two ABS sampling events were performed at the site. The first ABS event was performed in three separate areas of the excavated area. The second ABS sampling event was performed in three areas of the northern and southern concrete pads. The W.R. Grace analytical results for the air samples were non-detect for asbestos. After each ABS event was completed, a composite sample of the raked or swept soils was collected. Asbestos was not detected above the laboratory method detection limits in the bulk samples.

After the areas were confirmed clean by the ABS and bulk sampling data, the excavated areas were backfilled with approximately 843 loads, or approximately 10,538 cubic yards, of backfill. The area was graded and erosion control matting was installed on the creek berms. As agreed with DeKalb County, final grading of the site is the responsibility of DeKalb County.

Based on successful completion of removal action activities as indicated by the confirmation bulk soil and activity-based air sampling analytical results, No Further Action is warranted. The future of the site is the responsibility of the property owner, DeKalb County, Georgia.

1. INTRODUCTION

In response to a U.S. Environmental Protection Agency (EPA) Administrative Settlement Agreement and Order on Consent (AOC) for Removal Action, W.R. Grace contracted URS Corporation (URS) to provide consulting and management activities during the removal action at the Zonolite Road Site (GAO 144) in Atlanta, DeKalb County, Georgia. Specifically, URS was retained to assist W.R. Grace in implementing the following scope of work at the site:

- Develop project plans, including Removal Action Work Plan, Quality Assurance Project Plan (QAPP), Quality Management Plan (QMP), and Health and Safety Plan (HASP).
- Excavate and remove areas of asbestos-containing soil in the plateau area (approximately 175 ft by 250 ft elevated waste pile) to native soil with confirmatory sampling.
- Erect warning signs and fencing to prevent access to contaminated areas.
- Backfill excavated areas with clean fill material, if necessary.
- Dispose of contaminated soils at an approved facility.
- Suppress dust and control erosion during the removal action.
- Monitor and sample, as necessary, personal and ambient air during the removal activities.
- Restore disturbed areas in a manner that prevents flooding of adjacent properties and is consistent with future land use.
- Install a vegetative cover to prevent erosion of the soil backfill or disturbed areas and hydro-seed the area after backfilling is complete.
- Submit a written progress report to EPA concerning actions undertaken pursuant to the AOC every 2 weeks after EPA's approval of the Removal Action Work Plan until termination of the AOC, unless otherwise directed by the On-Scene Coordinator in writing.
- Submit a proposal for post-removal site control, if required.
- Submit a comprehensive final report summarizing the site conditions, field sampling activities, removal activities, screening results, and analytical results following the conclusion of the removal action.

This final report includes a good faith estimate of the actual costs incurred in complying with the AOC, a list of quantities and types of materials removed off-site, the ultimate destination of those materials, the analytical results of sampling and analyses performed, and accompanying appendices containing relevant documentation generated during the removal action.

1.1 Site Description

The Zonolite Road Site (GAO 144) is comprised of approximately 16 acres at 1167 Zonolite Place NE, in Atlanta, DeKalb County, Georgia. The eastern portion of the site is occupied by the Atlanta Soto Zen Center. The site is bordered by light-industrial and commercial businesses to the north and to the east. Peachtree Creek runs along the south and west sides of the site. Residential communities are located to the south, west, and north sides of the site. **Figure 1** shows the location of the site.

1.2 Project Team

Project team members and their roles during the removal action included:

- W.R. Grace: Daily onsite supervision.
- URS Corporation: Management and oversight.
- Winter Construction Company: Asbestos abatement, including excavation, transportation, disposal, backfilling, and site restoration.
- One Consulting Group, Inc.: Perimeter and personal air monitoring and activity-based sampling (ABS).
- GeoSurvey, Ltd.: Surveying to document sample locations and final extent of the excavated area.
- EPA and its Superfund Technical Assistance and Response Team (START) contractor, Tetra Tech, Inc.: Inspection and sampling.

1.3 Chronology of Events

The following presents the chronology of events during the removal action. More detailed information on these activities is provided in Section 3.

May 10, 2011	Bankruptcy Court for the District of Delaware approved W.R. Grace's Order to enter into an Administrative Settlement Agreement and Order on Consent for Removal Action at the Atlanta (DeKalb County), Georgia site with EPA Region 4
May 26, 2011	EPA certified Waste Management Pine Bluff Landfill in Ball Ground, Georgia, as the removal action disposal facility
June 1, 2011	EPA, START, DeKalb County, W.R. Grace, and URS met on-site to discuss the extent of the cleanup
June 21, 2011	EPA issued the removal action cleanup levels
June 22, 2011	URS collected a soil sample for landfill profiling
June 23, 2011	W.R. Grace submitted the Draft Removal Action Work Plan to EPA
June 24, 2011	W.R. Grace submitted the Draft HASP and Draft QMP to EPA
June 28, 2011	Waste Management Pine Bluff Landfill in Ball Ground, Georgia, accepted the profile for disposal of the excavated soil at their facility
June 29, 2011	W.R. Grace submitted the Draft QAPP to EPA
July 11, 2011	EPA held a public meeting at the Quickshot Firing Range
July 26, 2011	EPA met with DeKalb County and the South Fork Conservancy regarding the site entrance road
August 1, 2011	EPA issued comments on the Draft Removal Action Work Plan and Draft HASP

August 15, 2011	• EPA issued comments on the Draft QAPP • EPA approved the Draft QMP
August 18, 2011	W.R. Grace conducted a bid walk meeting with contractors
August 26, 2011	W.R. Grace submitted the Revised Removal Action Work Plan (including the Air Monitoring Work Plan and Asbestos Removal Land Disturbance Plan), Revised QAPP, and Revised HASP
September 16, 2011	EPA clarified the exemption for a State of Georgia Land Disturbance Permit
September 20, 2011	• EPA issued comments on the Revised Removal Action Work Plan • EPA approved the Revised QAPP, Revised HASP, Draft Air Monitoring Work Plan, and Draft Asbestos Removal Land Disturbance Plan • W.R. Grace/URS met with DeKalb County to discuss erosion control plans
September 26, 2011	W.R. Grace submitted the Final Removal Action Work Plan to EPA
October 4, 2011	• EPA approved the Final Removal Action Work Plan • W.R. Grace submitted a request to EPA to change laboratories from EMSL Analytical, Inc. to Materials Analytical Services (MAS)
October 7, 2011	URS collected a sample from the Stephens Borrow Pit
October 11, 2011	EPA coordinated and attended a project planning meeting between W.R. Grace, DeKalb County, local businesses, and the South Fork Conservatory to discuss the removal project schedule, plans, and potential impacts
October 16, 2011	EPA approved W.R. Grace's request to change laboratories from EMSL Analytical, Inc. to MAS
October 17, 2011	W.R. Grace submitted analytical results from the Stephens Borrow Pit sample collected on October 7 to EPA
October 20, 2011	One Consulting Group conducted background air sampling
October 21, 2011	URS met with the northern property manager to discuss limiting access to the rear parking lot during removal
October 25, 2011	One Consulting Group conducted background air sampling
October 27, 2011	• One Consulting Group conducted background air sampling • Winter Construction Company forwarded documentation from Waste Management's Pine Bluff Landfill to EPA indicating a 6 millimeter liner for the trucks was acceptable

October 28, 2011	URS, DeKalb County, AECOM Engineering, and Landscape Architect-Sylvatica Studio for the South Fork Conservancy met to discuss DeKalb County's conceptual grading plans for the site
October 31, 2011	• EPA, Tetra Tech, W.R. Grace, URS, One Consulting Group, and Winter Construction Company mobilized on-site • Winter Construction Company began site preparation and setup activities
November 1, 2011	• W.R. Grace forwarded Resource Conservation and Recovery Act (RCRA) metals analytical results from the October 7 Stephens Borrow Pit soil sample to EPA • EPA approved the use of a 6 millimeter liner for the trucks
November 3, 2011	Winter Construction Company began installing erosion control fencing
November 4, 2011	W.R. Grace forwarded the final data package of asbestos analytical results for background air sampling to EPA
November 8, 2011	Winter Construction Company completed site setup
November 9, 2011	Winter Construction Company began soil excavation activities
November 11, 2011	Two sets of scaffolding were erected for the dump truck lining and sealing operations
November 18, 2011	URS collected a sample of backfill material from the Old Apex Plant Borrow Pit (Duncan Road, Cobb County)
November 25–27, 2011	A tree removal company removed undergrowth and trees from areas west and south of the initial excavation area
November 28, 2011	Winter Construction Company began excavation of vermiculite in soils located west of the plateau toward the creek
December 2, 2011	W.R. Grace, EPA, DeKalb County, AECOM, URS, and a representative from the South Fork Conservancy met to discuss site drainage, retention basin, and final grading
December 5, 2011	• URS forwarded analytical results from the soil sample collected from the Old Apex Plant Borrow Pit (Duncan Road, Cobb County) to EPA • W.R. Grace submitted the Final Air Monitoring Work Plan to EPA
December 12, 2011	EPA approved use of the Old Apex Plant Borrow Pit (Duncan Road, Cobb County)
December 20, 2011	URS collected six confirmation bulk soil samples from the creek berm
December 21, 2011	EPA requested bulk and activity-based sampling addenda to the Work Plan, QAPP, and Air Monitoring Work Plan

December 29, 2011	W.R. Grace submitted a Sampling Addendum related to bulk and activity-based sampling to EPA. A Grading Plan Addendum was also submitted to EPA based on DeKalb County's final grading plan
January 4, 2012	URS collected a five-point composite of soil from beneath the southern concrete pad and one additional grab sample from an exposed portion of the pad
January 5, 2012	• W.R. Grace forwarded analytical results from the six confirmation bulk soil samples collected December 20 to EPA • EPA's contractor collected three discrete soil samples of suspect material from the sidewalls along the edges of the northern (two samples) and southern (one sample) concrete pads • One Consulting Group collected eight discrete soil samples from piles of suspect material along the northern perimeter extending from the excavation area up to the construction entrance
January 6, 2012	URS/EPA collected discrete soil samples from the southern concrete pad sidewall (two samples) and northern concrete pad sidewall (three samples)
January 13, 2012	EPA, W.R. Grace, DeKalb County, URS, and South Fork Conservancy met to discuss final site grading and site closure
January 16, 2012	URS/EPA collected discrete and composite confirmatory soil samples from sampling grids P13, P18, P23, and P28 in the main site excavation bottom
January 17, 2012	URS collected a recycled crushed concrete sample from the Stephens Borrow Pit
January 18, 2012	• URS collected five discrete and one composite soil samples from approximately 3 ft below the southern concrete pad • URS collected a sixth discrete soil sample from approximately 3 ft below the area of the southern concrete pad where the concrete was missing
January 24, 2012	• W.R. Grace forwarded analytical results from the eight discrete soil samples collected January 5 to EPA • W.R. Grace forwarded analytical results from the six discrete soil samples collected January 4 to EPA • W.R. Grace forwarded analytical results from the recycled crushed concrete sample collected January 17 from the Stephens Borrow Pit to EPA

January 26, 2012	• W.R. Grace forwarded analytical results from the composite samples collected January 16 to EPA • URS/EPA collected four discrete soil samples from approximately 3 ft below the surface of the northern concrete pad (a composite sample of these four discrete samples was analyzed) • URS collected a crushed concrete sample from the Old Apex Plant Borrow Pit (Duncan Road, Cobb County)
January 31, 2012	W.R. Grace forwarded analytical results from the composite soil sample collected on January 26 to EPA
February 2, 2012	W.R. Grace issued the Final Grading Plan Addendum to EPA
February 6, 2012	One Consulting Group collected a discrete soil sample from the northern concrete pad sidewall after additional material was excavated
February 7, 2012	EPA/One Consulting Group conducted activity-based sampling in the excavation basin
February 17, 2012	W.R. Grace submitted the Final Activity-Based Sampling Addendum to EPA
February 20, 2012	Winter Construction Company completed removal activities
February 21, 2012	W.R. Grace forwarded analytical results of the re-sample collected on February 6 from the northern concrete pad sidewall to EPA
February 23, 2012	EPA/One Consulting Group performed activity-based sampling on the two concrete pads remaining at the site
February 24, 2012	W.R. Grace submitted February 23 activity-based sampling event results to EPA (email directly from MAS Laboratories)
March 1, 2012	EPA approved completion of the removal action activities
March 8, 2012	W.R. Grace issued letter of completion to EPA

2. SITE HISTORY

The Zonolite Road Site (GAO 144) was the former location of a vermiculite expansion (or exfoliation) plant. The expansion plant operated from 1950 until 1970. EPA conducted a removal site evaluation at the site in response to an initiative to investigate vermiculite facilities that received vermiculite concentrate from the W.R. Grace vermiculite mine in Libby, Montana. The site received between 499 and 1,225 tons of vermiculite concentrate from the W.R. Grace vermiculite mine in Libby, Montana.

2.1 Previous Activities

In the spring of 2010, EPA and EPA's START contractor conducted ABS and bulk material sampling at the site. The objective of the field effort was to evaluate potential human exposure risk from disturbance of materials potentially contaminated with asbestos. Of the four ABS events, three rounds did not yield detectable concentrations of asbestos in the air samples. The only detection of asbestos in any ABS air sample – at the detection limit of the analytical technique – was for an air sample associated with ABS Round 1, collected in the area that appeared somewhat elevated above the surrounding terrain (the "plateau" area). The preliminary analytical results for all bulk samples indicated either non-detect or trace (present but below levels that can be quantified) quantities of asbestos, except for two samples that reported low percentage levels of Libby amphibole asbestos (0.5% and 0.75%). These samples were also collected in the plateau area.

On November 12, 2010, EPA and START conducted a site visit to excavate small test pits into the plateau and other areas on the site to visually confirm the presence/absence of vermiculite beneath the ground surface. Test holes were excavated in several areas of the plateau and other selected areas of the site. In the plateau area test holes, EPA visually identified vermiculite at depths ranging from less than 6 in. below ground surface to somewhat deeper than 12 in. below ground surface. EPA did not observe vermiculite in any of the test excavations on other areas of the site. Based on these findings, EPA determined that vermiculite appeared to be present below the elevated land surface in the plateau area. The area where vermiculite is present was roughly estimated to occur in a zone about 175 ft wide by 250 ft long. The height of the plateau area appeared to range from about 0 ft to 6 ft above natural grade.

In a follow-up sampling investigation, EPA and W.R. Grace collected additional soil samples from the plateau on December 6, 2010. The results of the sampling confirmed Libby amphibole asbestos within the plateau. Soil samples collected in the subsurface of the plateau were found to have concentrations ranging from no asbestos found to 2% tremolite. Asbestos was identified in each of the bulk samples of vermiculite from <1% to 2% tremolite.

In March 2011, EPA completed the removal site evaluation, determining the site met the criteria for removal eligibility.

2.2 Administrative Settlement Agreement and Order on Consent

In April 2011, W.R. Grace and EPA entered into an Administrative Settlement Agreement and Order on Consent for Removal Action to excavate to native soil an elevated (plateau) area measuring approximately 175 ft by 250 ft.

On May 10, 2011, the Bankruptcy Court for the District of Delaware approved W.R. Grace's Order to enter into an Administrative Settlement Agreement and Order on Consent for Removal Action at the Atlanta (DeKalb County), Georgia site with EPA Region 4.

2.3 Cleanup Objectives

On June 21, 2011, EPA issued removal action/cleanup levels for the site. The removal action level for asbestos in soil and the action level for air established by EPA Region 4 for the vermiculite site are listed below. The action level for asbestos in air is based on a gardening scenario, which is the most conservative exposure scenario evaluated by EPA.

- Soil Removal Action Level: 0.25% Libby amphibole asbestos
- Action Level: 0.02 fibers per cubic centimeter (f/cc) for ABS

3. PROJECT REPORTS

3.1 Removal Action Work Plan and Addenda

URS prepared a Removal Action Work Plan for performing the removal action generally described in the AOC. W.R. Grace submitted the Draft Removal Action Work Plan to EPA on June 23, 2011. On August 1, 2011, EPA issued comments on the Draft Removal Action Work Plan. The Revised Removal Action Work Plan was submitted on August 26, 2011. On September 20, 2011, EPA issued comments on the Revised Removal Action Work Plan. The Final Removal Action Work Plan was submitted to EPA on September 26, 2011, and approved on October 4, 2011.

A Sampling Addendum was issued on December 29, 2011, to revise the sampling procedures outlined in the approved Removal Action Work Plan to account for the increased size of the site and removal/restoration of the drainage creek bank.

An Activity-Based Sampling Addendum was issued on February 17, 2012, to finalize the ABS procedures. The confirmation ABS protocol included in the Removal Action Work Plan assumed that the only surface where ABS would be performed would be bare soil. Discovery of large concrete pads during excavation required a modification to the original ABS protocol.

The approved Removal Action Work Plan is provided in **Appendix A**. **Appendix G** contains the EPA review and approval letters.

3.2 Quality Management Plan

URS developed a QMP in accordance with EPA requirements. The QMP was submitted to EPA on June 24, 2011, and approved on August 15, 2011. **Appendix B** contains the approved QMP and **Appendix G** contains the EPA approval letter.

3.3 Quality Assurance Project Plan

URS developed a QAPP in accordance with EPA requirements. The QAPP was submitted to EPA on June 29, 2011. EPA issued comments on the Draft QAPP on August 15, 2011. The revised QAPP was submitted on August 26, 2011, and approved on September 20, 2011. **Appendix C** contains the approved QAPP and **Appendix G** contains the EPA approval letter.

3.4 Health and Safety Plan

A HASP was prepared in accordance with Occupational Safety and Health Administration (OSHA) regulations [29 Code of Federal Regulations (CFR) 1910.120] and EPA requirements. The HASP was submitted to EPA on June 29, 2011. EPA issued comments on the Draft HASP on August 1, 2011. The revised HASP was submitted on August 26, 2011, and approved on September 20, 2011. **Appendix D** contains the approved HASP and **Appendix G** contains the EPA approval letter.

3.5 Air Monitoring Work Plan

URS retained a third party contractor (One Consulting Group, Inc. of Atlanta, Georgia) to develop an air monitoring plan for implementation during the removal action. The Air Monitoring Work Plan details the procedures for baseline monitoring prior to the start of the removal action, personnel and perimeter air monitoring during the removal action, and activity-based air sampling at the end of the removal action. EPA approved the Air Monitoring Work Plan on September 20, 2011. **Appendix E** contains the approved Air Monitoring Work Plan and **Appendix G** contains the EPA approval letter.

3.6 Land Disturbance Plan

A land disturbance permit application was prepared as part of the Removal Action Work Plan and was submitted on August 26, 2011, to EPA and DeKalb County for review. On September 16, 2011, EPA notified the Georgia Environmental Protection Division (EPD) that the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response action at the Zonolite Road Site was exempted by law from the requirement to obtain federal, state, or local permits related to any activities conducted under CERCLA Section 121(c)(1). This letter was specifically issued to address the encroachment upon the 25-ft state creek buffer regulations. A copy of the EPA letter to Georgia EPD is included in **Appendix G.**

On September 20, 2011, W.R. Grace and URS met with DeKalb County to review the permit application and plan. DeKalb County subsequently provided comments and URS resubmitted the plan to fulfill the requirements of the permit. EPA determined that W.R. Grace did not need to obtain the permit but had to meet the requirements of the permit such as the development of a Land Disturbance Plan, management of surface water run-off, erosion control, installation of best management practices, and dust suppression. The Land Disturbance Plan was approved by EPA on October 4, 2011.

3.7 Progress Reports

Written progress reports were submitted to EPA every 2 weeks throughout the course of the removal activities at the site. These reports described significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems. The progress reports are provided in **Appendix H**.

4. SUMMARY OF REMOVAL ACTION ACTIVITIES

This section summarizes the removal action activities conducted at the Zonolite Road Site. Photographs showing various site activities throughout the removal action are provided in **Appendix I**.

4.1 Pre-Removal Activities

Figure 2 is an aerial site plan showing conditions prior to initiating the removal action.

4.1.1 Waste Sampling

Prior to the start of the removal action, a sample of the material from the plateau area was collected on June 22, 2011, for laboratory analysis for the waste disposal profile at the Waste Management Pine Bluff Landfill located in Ball Ground, Georgia. Waste Management requested the material be analyzed for Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and herbicides, metals, and RCRA metals.

The analytical results of the material did not exceed the TCLP regulatory limits. Therefore, the waste was classified as nonhazardous waste. The analytical results of the RCRA total metals did not exceed the landfill permit limits. On June 28, 2011, Waste Management indicated their acceptance of the profile for disposal of the waste at their Pine Bluff Landfill in Ball Ground, Georgia.

The waste sampling analytical results are summarized in **Table 1** and provided in **Appendix J.**

4.1.2 Site Survey

GeoSurvey Ltd., a licensed Georgia surveyor, surveyed the site prior to start of the removal action as part of the land disturbance plan preparation. The site was resurveyed after the erosion control fencing was expanded. Surveying was also performed throughout the project in support of the site activities to establish control points, delineate property boundaries, determine creek elevations on the unnamed tributary to Peachtree Creek, and establish final grading elevations.

4.1.3 Property Access Agreements

W.R. Grace and/or DeKalb County currently own all the property where the removal activities occurred, except for a small parcel at the site entrance owned by Pete Poulos. An access agreement with DeKalb County was consummated in July 2011 and with Mr. Poulos in November 2011.

4.1.4 Public Meetings

EPA conducted public meetings prior to (July 11 and 26, 2011) and during (October 11, 2011, and January 13, 2012) the removal action. EPA also met individually with the various businesses

in the vicinity of the site to discuss the start of the removal and the planned activities. URS met with Gerlinda Grimes, manager of the northern adjacent property, on October 21, 2011, to request that the parking in the rear of the facility be restricted during daytime removal action activities for health and safety concerns.

4.1.5 Borrow Pit Sampling

Two borrow pits were identified as potential candidates to use as a source of backfill during the removal action. The first borrow pit was Stephens Borrow Pit located at 5173 Pelican Drive in College Park, Georgia. The second borrow pit (referred to as Old Apex Plant Borrow Pit) was located on Duncan Road in Cobb County. A sample of the Stephens Borrow Pit material was collected on October 7, 2011, and a sample of the Old Apex Plant Borrow Pit (Duncan Road, Cobb County) was collected on November 18, 2011. These samples were submitted to Atlanta Environmental Services, Inc. of Atlanta, Georgia, for analysis of VOCs by EPA SW-846 Method 8260B, SVOCs by EPA SW-846 Method 8270C, and RCRA metals by EPA SW-846 Method 6101/7410. A portion of the sample was also sent to MAS in Suwanee, Georgia, for analysis for asbestos utilizing EPA Method 600/R-93/116 with California Air Resources Board (CARB) 435 Prep 400 Count. No VOCs, SVOCs, or asbestos were detected in the samples above the laboratory method detection limits. Several RCRA metals were detected in the soil samples but were within naturally occurring concentrations. The analytical results for both borrow pits were submitted to EPA on October 17, 2011 (Stephens Borrow Pit) and December 5, 2011 (Old Apex Plant Borrow Pit) for approval. The analytical results are summarized in **Table 2** and provided in **Appendix K.**

Prior to the need for borrow material, the Old Apex Plant Borrow Pit was suggested for use due to its proximity to the trucking company being used. Use of the Old Apex Plant Borrow Pit reduced travel time for the trucks considerably. Rather than get final approval for the Stephens Borrow Pit, W.R. Grace pursued confirmation of the Old Apex Plant Borrow Pit. On December 12, 2011, EPA approved the Old Apex Plant Borrow Pit as a source of backfill. **Appendix G** contains the EPA approval letter.

On January 17 and 26, 2012, samples of crushed concrete/soil were obtained from each borrow pit since this material was needed to construct the base for a haul road in the soft soils along the creek berms. No VOCs, SVOCs, or asbestos was detected in the samples above the laboratory method detection limits. Several RCRA metals were detected in the soil samples but were within naturally occurring concentrations. These samples were analyzed for VOCs, SVOCs, RCRA metals, and asbestos. The analytical results are summarized in **Table 2** and provided in **Appendix K.**

4.2 Removal Activities

Previous sampling by EPA and W.R. Grace tentatively defined the area requiring removal as the plateau area measuring approximately 250 ft by 175 ft. The northern boundary of the material was located adjacent to a drainage stream bank. The soil removal process was performed in accordance with the Georgia EPD Asbestos Removal and Encapsulation Rules (Official Code of Georgia Annotated 391-3-14) and 29 CFR 1910.1101.

4.2.1 Site Preparation

W.R. Grace and its contractor, Winter Construction Company, mobilized to the site on October 31, 2011, to begin site preparation for removal action activities. Placement of the office trailer, generator, portable toilets, site fencing, and signage, clearing and grubbing, installation of erosion control devices, installation of site entrance road and gate, and establishment of the hot zone and decontamination zone were completed by November 8, 2011.

4.2.2 Site Security

Site security consisted of temporary fencing erected on the northern side of the site in the grassy area between the stream and asphalt parking lot. The fencing was standard 6-ft high temporary chain link fencing. Signs were posted on 75-ft centers on the temporary fencing providing a warning of a restricted area. Site access was controlled using a gate on the access road leading from Zonolite Place NE. Access to the site was limited to authorized persons only.

4.2.3 Erosion Control

Erosion control fencing was installed from November 3 to 8, 2011. The catch basin was installed at the northeastern corner of the site to collect surface water runoff for filtration prior to discharge. During removal action activities, One Consulting Group performed daily erosion control inspections as required by the erosion control regulations. On November 22, 2011, URS engineers inspected the erosion control features to verify installation in accordance with the Land Disturbance Plan. On December 1, 2011, the erosion control devices were inspected again after the area of excavation and the erosion control devices were expanded to the south and west of the plateau area. The Land Disturbance Plan was subsequently updated the week of December 19, 2011, and the revised plan was maintained at the site.

4.2.4 Clearing and Grubbing

Clearing and grubbing of the plateau area was conducted from November 1 to 8, 2011. Additional clearing and grubbing activities were conducted to facilitate excavation of vermiculite-containing soils located west and south of the plateau area. The thick undergrowth and trees in these areas were removed and chipped, mulched, and stockpiled onsite for future use by DeKalb County.

4.3 Excavation Activities

Excavation activities began on November 9, 2011, and continued until February 20, 2012, when the last truckloads of excavated material were transported offsite to Waste Management's Pine Bluff Landfill. The area of excavation is shown in **Figure 3**.

4.3.1 Dust Suppression

Dust suppression during active excavation consisted of wetting the soils utilizing direct application of water from a water truck and fire hose. Daily personnel air monitoring and perimeter air monitoring confirmed the dust suppression methods were effective during the removal.

4.3.2 Work Zones

Excavation activities were conducted in three zones to control the potential spread of contamination. Prior to the start of excavation activities, a support zone, a contamination reduction zone, and an exclusion zone were established. The support zone served as the center for team communications and emergency response. Appropriate sanitary, safety, and support equipment were located in this zone. The contamination reduction zone provided an area for personnel and portable equipment decontamination. It was used for exclusion zone entry and exit and for donning/removing personal protective equipment. Areas that contained, or were suspected to contain, asbestos were marked as an exclusion zone.

4.3.3 Truck Loading

The truck lining and wrapping area, personnel decontamination zone, and truck wash station were established at the western end of the construction access road where it entered the excavation area. The excavation and truck loading process was set up to minimize dust and limit entry/exit into the excavation area. Trucks entered the site using the construction access road and proceeded to the scaffolding area to be lined with 6 millimeter poly sheeting. Once lined, the trucks proceeded to the excavation area for loading. After the truck was loaded, it returned to the scaffolding area, and the excavated material was sealed in the liner to prevent dust emissions during transport. Prior to exiting the exclusion zone, the truck was decontaminated and the rinse water collected in a sump. Periodically, the collected rinse water was filtered through a filter bag and the water discharged onsite.

4.3.4 Plateau Area Excavation

Excavation began in the plateau area and proceeded to the east. The suspect vermiculite material was originally estimated at a depth of approximately 2–3 ft. As the excavation progressed, the depth of the vermiculite material was greater than initially estimated and varied from approximately 6 to 10 ft in depth until native soils were encountered. Generally, the depth of the material became shallower toward the east. The suspect vermiculite material was excavated until native soils were encountered. Once the material was excavated and native soils encountered, plastic sheeting was placed over the soils until bulk confirmation and ABS were performed and the area cleared.

During excavation of the plateau area, visible vermiculite was observed in soils west and south of the plateau area. Based on the inspection of the areas outside the plateau area, suspect vermiculite material was observed in the area west of the plateau up to the unnamed creek and

south to the drainage ditch along the southern property line (see **Figure 3**). The material was also present in the creek berms on the northern and western sides of the site.

During site meetings in December 2011, EPA and W.R. Grace agreed that the northern and western creek berms would be excavated last to prevent flooding of the site during rainfall events. EPA and W.R. Grace also agreed to revise procedures for removal of the creek berm and sampling underneath the berm to verify the vermiculite material had been removed. Revised sampling procedures were outlined in EPA's letter dated December 21, 2011 (provided in **Appendix G**). The revised sampling procedures outlined the collection of a bulk sample every 100 ft along the existing berm where the vermiculite had already been excavated to native soils. This data would be utilized to verify the vermiculite-containing soils had been sufficiently removed in the berm area so as not to delay reconstruction of the berms.

Excavation of the area west of the plateau up to the creek berm and the area south of the plateau started on November 28, 2011. After the southern and western areas were cleared, the erosion control fencing was adjusted to encompass the cleared area. During the trenching for installation of the erosion control fencing, two concrete pads were discovered on the eastern part of the site (referred to as the northern and southern concrete pads). Visible vermiculite was excavated in the areas around the southern and northern concrete pads in January 2012. After the initial excavation, some suspect material was observed in the sidewalls of the excavation near the concrete pads. The suspect material was sampled and analyzed by W.R. Grace and EPA for the presence of asbestos. Trace amounts of asbestos were detected in two of the three sidewall samples collected by EPA on January 5, 2012. This material was excavated and resampling indicated the cleanup standard was achieved. On January 28, 2012, W.R. Grace and EPA performed sampling beneath the concrete pads. Asbestos was not detected above the site cleanup level beneath the concrete pads in both the EPA and W.R. Grace samples. Therefore, the concrete pads were left in place.

4.3.5 Creek Berm Excavation

Also in January 2012, excavation of the creek berms began in the northwest corner of the site after a haul road was constructed to support the excavation equipment and trucks. During the creek berm removal process, a 50-ft section of berm was excavated down to native soils (where the previous bulk sample results indicated the soils met the cleanup standard). After reaching native soil, the creek berm was restored with backfill from the approved borrow pit prior to proceeding to the next 50-ft section. This process was repeated until the entire creek berm along the northern and western sides of the site was excavated and replaced. The creek berm restoration process was completed the week of February 20, 2012. The creek berm sampling and analytical results are discussed in detail in Section 4.4.1.

4.4 Confirmation Sampling Activities

Confirmation sampling was conducted in the excavation area to verify the asbestos material was removed in accordance with the AOC. The confirmation samples were collected in accordance with the Removal Action Work Plan addenda.

4.4.1 Creek Berm Bulk Sampling

On December 20, 2012, URS collected six bulk soil samples along the northern and western creek berms where the vermiculite soils had already been excavated down to native soils. Samples were taken approximately every 100 ft along the northern and western perimeter adjacent to the ditch/creek berm. The revised sampling procedures for the creek berms were outlined in an EPA letter dated December 21, 2011 (provided in **Appendix G**).

Bulk soil samples were collected to verify that vermiculite in the areas adjacent to the berms had been removed so that when the creek berms were removed, restoration of the creek berm would not be delayed. The samples were delivered to MAS in Suwanee, Georgia, for analysis for asbestos utilizing EPA Method 600/R-93/116 with CARB 435 Prep 400 Count. The analytical results are summarized in **Table 3** and provided in **Appendix L**. Analysis of the six samples did not detect asbestos above the laboratory method detection limit. The locations of the creek berm bulk soil samples are shown on **Figure 4.**

4.4.2 Bulk Soil Sampling

On January 5, 2012, bulk samples were collected from eight suspect dirt piles located east of the excavation area along the northern boundary to determine whether the dirt piles contained asbestos above the site cleanup standards. Additional bulk samples were collected from underneath the southern and northern concrete pads (January 18, 2012) and in the grids in the excavated area (January 16, 2012). The analytical results of the bulk samples are summarized in **Table 3** and provided in **Appendix L.** The locations of the bulk soil samples are shown on **Figure 4.** The bulk samples confirmed that the site soil action level of <0.25% asbestos was met.

4.4.3 Activity-Based Sampling

Two ABS events were performed at the site to determine whether the asbestos-containing soil had been remediated. The first ABS event was performed on February 7, 2012, in three separate areas of the excavated basin area. Three workers raked soils in the excavated areas where DeKalb County indicated a walking path may be constructed in the future. The analytical results of the ABS event were non-detect for asbestos. After ABS was completed, a composite bulk sample of the raked pile of soil was collected and submitted to MAS for analysis of asbestos by EPA Method 600/R-93/116 with CARB 435 Prep 400 Count. The analytical results of the bulk sample are summarized in **Table 3** and provided in **Appendix L.** Asbestos was not detected above the laboratory method detection limits in the bulk sample.

The second ABS event was performed on February 23, 2012, where sweeping occurred in three areas of the northern and southern concrete pads. The W.R. Grace analytical results were non-detect for asbestos. After the ABS was completed, a composite sample of the swept soil was collected and submitted to MAS for analysis of asbestos by EPA Method 600/R-93/116 with CARB 435 Prep 400 Count. The analytical results of the bulk sample are summarized in **Table 3** and provided in **Appendix L.** Asbestos was not detected above the laboratory method detection limits in the bulk sample.

The ABS areas are shown on **Figure 5** and described in detail in the Air Monitoring Report included in **Appendix M.**

4.5 Waste Management

The Pine Bluff Subtitle D Landfill located in Ball Ground, Georgia was selected as the landfill to receive the excavated material. EPA approved the landfill in a letter dated May 26, 2011, indicating the landfill was in compliance with the requirements of CERCLA Section 121(d)(3).

A total of 1,857 truckloads (approximately 26,064 tons) of excavated material were transported and disposed at the Pine Bluff Landfill. Copies of the final manifests and weigh tickets are provided on a CD in **Appendix N**.

4.6 Site Restoration

Site restoration was performed after confirmation samples verified the site action levels were accomplished and included the excavated areas as well as any areas disturbed or damaged by the project. Site restoration generally consisted of removing temporary fencing and signs, plastic sheeting, trash, and construction debris in disturbed areas, backfilling, hydroseeding excavated areas, and installation of proper erosion control measures.

As part of the site restoration process, the construction entrance and the entrance gate were left in-place as agreed with DeKalb County. The perimeter fencing and signs and the silt fencing were removed.

4.6.1 Backfill

The creek berm areas were backfilled beginning in January. After the main excavation areas were confirmed clean by the February 7, 2012 ABS data, W.R. Grace backfilled the excavated areas. Approximately 843 loads, or approximately 10,538 cubic yards, of borrow material from the Old Apex Plant Borrow Pit (Duncan Road, Cobb County) were utilized to backfill the creek berm and excavated areas.

4.6.2 Grading

Final grading was performed in accordance with the Final Grading Plan Addendum (provided in **Appendix F**). The elevations of the grading were spot checked by GeoSurvey to ensure the elevations were approximate and in accordance with the approved plan. As agreed with DeKalb County, final grading of the site is the responsibility of DeKalb County.

4.6.3 Erosion Control

After the excavated areas were backfilled in accordance with the approved DeKalb County Grading Plan, erosion control matting provided by DeKalb County was installed on the creek berms during the week of February 20, 2012. The disturbed areas were hydroseeded with all fescue grass seed (as requested by DeKalb County) and straw was applied on top to prevent

erosion of the seed until germination. W.R. Grace also installed 40 ft of riprap on the creek berm along the northern side of the site where the unnamed creek exited the concrete culvert.

5. AIR MONITORING

This section briefly summarizes the air monitoring activities and analytical results. A more detailed report summarizing the air monitoring activities, analytical data, and interpretation of results is provided in **Appendix M.**

5.1 Background Air Sampling

Prior to the start of the removal action, three background sampling events were performed on October 20, 25, and 27, 2011, to document background asbestos fibers in air concentrations. During each of these background sampling events, two air samples were collected from inside the proposed removal area, as well as four air samples at the four cardinal directions around the perimeter of the site. The air samples were submitted to the analytical laboratory for transmission electron microscopy (TEM) analysis under standard chain of custody procedures. Asbestos fibers were not detected in any background air samples analyzed.

5.2 Personnel Air Monitoring

Personnel air sampling was conducted in order to document potential worker exposure to asbestos during the removal action and to comply with applicable OSHA regulations. Personnel air sampling was performed daily during any land disturbing activities, including site preparation and removal action, for the duration of the work day or period of land disturbance. Personnel air samples were submitted to the analytical laboratory for TEM analysis under standard chain of custody procedures. Asbestos fibers were not detected in any personnel air samples analyzed above the EPA action level of 0.02 f/cc.

Spot-check air samples were also performed to ensure that engineering controls were properly maintained during removal action activities. These spot checks were performed the first six work days of the removal action, from November 9 to 16, 2011. For each day of spot-check sampling, two air samples were obtained in the removal action area, and two to three air samples were obtained from different locations outside the removal area, depending on the duration of the work day and the direction and speed of the wind. Spot-check air samples were field analyzed by phase contrast microscopy on-site by a NIOSH-582 certified individual. Asbestos fibers were not detected in any spot-check air sample analyzed above the EPA action level of 0.02 f/cc.

5.3 Perimeter Air Monitoring

Five perimeter ambient air samples were obtained during each day of land disturbing activities, including, but not limited to, site preparation and removal action, for the duration of the work day. The air samples were collected from the perimeter of the removal action area and analyzed using TEM. The air samples were obtained from the removal action's perimeter in the four cardinal directions, with two of the five air sample locations placed on the north side of the property, closest to the industrial and commercial complex. The ambient air samples were submitted to the analytical laboratory for TEM analysis under standard chain of custody procedures. Asbestos fibers were not detected in any perimeter air sample analyzed above the EPA action level of 0.02 f/cc.

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6. COSTS

Following is the estimated cost for the Zonolite Road Site, Atlanta (DeKalb County), Georgia, Final Report.

Line No.	Category	Amount
(1)	Outside Consulting & Report Preparation	$138,336.85
(2)	Soil Removal & Disposal	1,594,374.47
(3)	Air Monitoring	101,115.00
(4)	Analytical Costs - Soil & Air	108,782.00
(5)	Remedium Administration & Oversight	155,439.81
(6)	Total Estimated Cost for Final Report	$2,098,048.13

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7. CONCLUSION

Based on successful completion of removal action activities as indicated by the confirmation bulk soil and activity-based air sampling analytical results, No Further Action is warranted. EPA approved completion of the removal action activities in their letter dated March 1, 2012, and W.R. Grace issued its letter of completion to EPA on March 8, 2012. The future of the site is the responsibility of the property owner, DeKalb County, Georgia.

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Table 1. Waste Characterization Sample

Sample ID	Date Collected	Sample Type	Location	TCLP [a]	RCRA Metals [b]
CS-1	6/22/2011	Grab	Plateau Area	BRL	NE

[a] Analyzed by EPA SW-846 Method 1311/6010C
[b] Analyzed by EPA SW-846 Method 6010C

BRL = not detected above the laboratory method detection limits
NE = does not exceed landfill permit limitations

Table 2. Borrow Pit Sample Analytical Results

Sample ID	Date Collected	Sample Type	Location	VOCs [a]	SVOCs [b]	RCRA Metals [c]	Asbestos [d]	Borrow Material Approved
Stephens Borrow Pit	10/7/2011	Grab	Stephens Borrow Pit	BRL	BRL	NE	BRL	Not used
Cobb Borrow	11/18/2011	Grab	Duncan Road Cobb County	BRL	BRL	NE	BRL	Yes
RC - Crushed Concrete	1/17/2012	Grab	Stephens Borrow Pit	BRL	BRL	NE	BRL	Not used
Apex Concrete - Crushed Concrete/Soil	1/26/2012	Grab	Duncan Road Cobb County	BRL	BRL	NE	BRL	Yes

[a] VOCs analyzed by EPA SW-846 Method 8260B
[b] SVOCs analyzed by EPA SW-846 Method 8270D
[c] RCRA metals analyzed by EPA SW-846 Method 6010C
[d] Asbestos analyzed by CARB Method 435

BRL = not detected above the laboratory method detection limits
NE = does not exceed a regulatory standard

Table 3. Bulk Soil Sample Analytical Results

Line Number	Sample ID	Date Collected	Sample Type	Location	Sample Depth	W.R. Grace Analytical Results [a]	Split Collected by EPA	EPA Analytical Results [b]	Area Cleared	Comments
1.	CB-1	12/20/2011	Grab	Creek Berm	0-6"	ND	No	NR	Yes	EPA approved Grace results
2.	CB-2	12/20/2011	Grab	Creek Berm	0-6"	ND	No	NR	Yes	EPA approved Grace results
3.	CB-3	12/20/2011	Grab	Creek Berm	0-6"	ND	No	NR	Yes	EPA approved Grace results
4.	CB-4	12/20/2011	Grab	Creek Berm	0-6"	ND	No	NR	Yes	EPA approved Grace results
5.	CB-5	12/20/2011	Grab	Creek Berm	0-6"	ND	No	NR	Yes	EPA approved Grace results
6.	CB-6	12/20/2011	Grab	Creek Berm	0-6"	ND	No	NR	Yes	EPA approved Grace results
7.	CP1-1	1/4/2012	Aliquot/Grab	Southern Concrete Pad	0-6"	Hold	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
8.	CP1-2	1/4/2012	Aliquot/Grab	Southern Concrete Pad	0-6"	Hold	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
9.	CP1-3	1/4/2012	Aliquot/Grab	Southern Concrete Pad	0-6"	Hold	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
10.	CP1-4	1/4/2012	Aliquot/Grab	Southern Concrete Pad	0-6"	Hold	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
11.	CP1-5	1/4/2012	Aliquot/Grab	Southern Concrete Pad	0-6"	Hold	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
12.	CP1-6	1/4/2012	Grab	Southern Concrete Pad	0-6"	ND	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
13.	CP1-Composite	1/4/2012	Composite of CP1-1 thru CP1-5	Southern Concrete Pad	0-6"	ND	No	NR	No	EPA requested resampling to a depth of 3' beneath the concrete pad
14.	CSP-SWC	1/5/2012	Grab	Southern Pad SW Corner	2'	Trace	No	NR	No	Assessment sample of suspect material. This material was removed and disposed.
15.	CNP-NWC	1/5/2012	Grab	Northern Pad NW Corner	2'	ND	No	NR	No	Assessment sample of suspect material. This material was removed and disposed. See re-sample CNP-SW-1R
16.	C-NWL	1/5/2012	Grab	Northern Pad NW Corner	2'	Trace	No	NR	No	Assessment sample of suspect material. This material was removed and disposed. See re-sample CNP-SW-1R

Line Number	Sample ID	Date Collected	Sample Type	Location	Sample Depth	W.R. Grace Analytical Results [a]	Split Collected by EPA	EPA Analytical Results [b]	Area Cleared	Comments
17.	EP1-1	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Grace sample results. EPA did not collect split samples of piles which were located on the northern site boundary - east of the excavation area for samples EP1-1 through EP1-8
18.	EP1-2	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
19.	EP1-3	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
20.	EP1-4	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
21.	EP1-5	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
22.	EP1-6	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
23.	EP1-7	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
24.	EP1-8	1/5/2012	Grab	Dirt Pile east of excavation area along northern site boundary	0-6"	ND	No	NR	Yes	Same as above
25.	CSP-SW-1	1/6/2012	Grab	Southern Pad Side Wall	2'	ND	Yes	<0.02%	Yes	Both EPA (sample number ATV-SW-02) and Grace analytical results confirm sidewall is below cleanup standard

Line Number	Sample ID	Date Collected	Sample Type	Location	Sample Depth	W.R. Grace Analytical Results [a]	Split Collected by EPA	EPA Analytical Results [b]	Area Cleared	Comments
26.	CNP-SW-1	1/6/2012	Grab	Northern Pad Side Wall	2'	ND	Yes	0.43%	No	Material removed and resampled. See sample results line 59 - sample number CNP-SW-1R
27.	P-13	1/16/2012	Composite	Basin Grid 13	0-6"	ND	Yes	ND	Yes	3 aliquots (P13, P15, P16). Results confirm basin composite 13 is below cleanup standard
28.	P-18	1/16/2012	Composite	Basin Grid 18	0-6"	ND	Yes	ND	Yes	3 aliquots (P18, P20, P21). Results confirm basin composite 18 is below cleanup standard
29.	P-23	1/16/2012	Composite	Basin Grid 23	0-6"	ND	Yes	<0.02%	Yes	5 aliquots (P23, P24, P25, P26, P27). Results confirm basin composite 23 is below cleanup standard
30.	P-28	1/16/2012	Composite	Basin Grid 28	0-6"	ND	Yes	0.05%	Yes	5 aliquots (P28, P29, P30, P31, P32).Results confirm basin composite 28 is below cleanup standard
31.	P-13	1/16/2012	Aliquot/Grab	Basin Grid 13	0-6"	NS	No	NS	NA	Not sampled - underwater
32.	P-15	1/16/2012	Aliquot/Grab	Basin Grid 13	0-6"	NS	No	NS	NA	Not sampled - underwater
33.	P-16	1/16/2012	Aliquot/Grab	Basin Grid 13	0-6"	NS	No	NS	NA	Not sampled - underwater
34.	P-18	1/16/2012	Aliquot/Grab	Basin Grid 18	0-6"	NS	No	NS	NA	Not sampled - underwater
35.	P-20	1/16/2012	Aliquot/Grab	Basin Grid 18	0-6"	NS	No	NS	NA	Not sampled - underwater
36.	P-21	1/16/2012	Aliquot/Grab	Basin Grid 18	0-6"	NS	No	NS	NA	Not sampled - underwater
37.	P-23	1/16/2012	Aliquot/Grab	Basin Grid 23	0-6"	Hold	Yes	<0.02%	Yes	EPA lab inadvertently analyzed the sample
38.	P-24	1/16/2012	Aliquot/Grab	Basin Grid 23	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
39.	P-25	1/16/2012	Aliquot/Grab	Basin Grid 23	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
40.	P-26	1/16/2012	Aliquot/Grab	Basin Grid 23	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
41.	P-27	1/16/2012	Aliquot/Grab	Basin Grid 23	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
42.	P-28	1/16/2012	Aliquot/Grab	Basin Grid 28	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
43.	P-29	1/16/2012	Aliquot/Grab	Basin Grid 28	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample

Line Number	Sample ID	Date Collected	Sample Type	Location	Sample Depth	W.R. Grace Analytical Results [a]	Split Collected by EPA	EPA Analytical Results [b]	Area Cleared	Comments
44.	P-30	1/16/2012	Aliquot/Grab	Basin Grid 28	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
45.	P-31	1/16/2012	Aliquot/Grab	Basin Grid 28	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
46.	P-32	1/16/2012	Aliquot/Grab	Basin Grid 28	0-6"	Hold	Yes	LE	Yes	EPA lab inadvertently analyzed the sample
47.	CP1-6 3'	1/18/2012	Grab	Southern Concrete Pad	2-3'	ND	Yes	0.23%	Yes	Sample collected from notch in southern concrete pad
48.	CP1-3 Comp	1/18/2012	Composite of CP1-1 thru CP1-5	Southern Concrete Pad	2-3'	ND	Yes	0.18%	Yes	Not analyzed since composite sample was below site cleanup standard. Both EPA and Grace results confirmed composite sample below cleanup standard
49.	CP1-1	1/18/2012	Aliquot/Grab	Southern Concrete Pad	2-3'	Hold	Yes	N/A	Yes	Not analyzed since composite sample was below site cleanup standard
50.	CP1-2	1/18/2012	Aliquot/Grab	Southern Concrete Pad	2-3'	Hold	Yes	N/A	Yes	Not analyzed since composite sample was below site cleanup standard
51.	CP1-3	1/18/2012	Aliquot/Grab	Southern Concrete Pad	2-3'	Hold	Yes	N/A	Yes	Not analyzed since composite sample was below site cleanup standard
52.	CP1-4	1/18/2012	Aliquot/Grab	Southern Concrete Pad	2-3'	Hold	Yes	N/A	Yes	Not analyzed since composite sample was below site cleanup standard
53.	CP1-5	1/18/2012	Aliquot/Grab	Southern Concrete Pad	2-3'	Hold	Yes	N/A	Yes	Not analyzed since composite sample was below site cleanup standard
54.	NCP-Comp 3'	1/26/2012	Composite of NCP-1, NCP-2, NCP-3, NCP-4)	Northern Concrete Pad	2-3'	ND	Yes	ND	Yes	Composite of aliquots (NCP-1, NCP-2, NCP-3, NCP-4)
55.	NCP-1	1/26/2012	Aliquot/Grab	Northern Concrete Pad	2-3'	Hold	Yes	Hold	Yes	Not analyzed since composite sample was below site cleanup standard
56.	NCP-2	1/26/2012	Aliquot/Grab	Northern Concrete Pad	2-3'	Hold	Yes	Hold	Yes	Not analyzed since composite sample was below site cleanup standard

Line Number	Sample ID	Date Collected	Sample Type	Location	Sample Depth	W.R. Grace Analytical Results [a]	Split Collected by EPA	EPA Analytical Results [b]	Area Cleared	Comments
57.	NCP-3	1/26/2012	Aliquot/Grab	Northern Concrete Pad	2-3'	Hold	Yes	Hold	Yes	Not analyzed since composite sample was below site cleanup standard
58.	NCP-4	1/26/2012	Aliquot/Grab	Northern Concrete Pad	2-3'	Hold	Yes	Hold	Yes	Not analyzed since composite sample was below site cleanup standard
59.	CNP-SW-1R	2/6/2012	Northern Pad Sidewall Resample	Northern Concrete Pad Sidewall	2-3'	ND	Yes	ND	Yes	Resample of sample location CNP-SW-1 after additional suspect material excavated.
60.	AB-5-SC	2/7/2012	Composite of 3 raked piles	Excavation Basin Area	surface	ND	No	No	Yes	Composite sample of three raked piles from excavation basin collected during ABS sampling event
61.	ABS-2	2/23/2012	Composite of 3 swept piles	Northern and Southern Concrete Pads	surface	ND	No	No	Yes	Composite sample of three swept piles from northern and southern pads collected during ABS sampling event

[a] Grace analysis performed by PLM CARB 435
[b] EPA analysis by EPA method TEM Libby-03 (Rev 1)

<0.02% = not detected above the laboratory method detection limit
LE = laboratory error (aliquot sample should not have been analyzed because composite result was below site cleanup standard.
N/A = not analyzed
NA = not applicable
ND = not detected above laboratory method detection limit
NR = EPA did not request split sample
NS = not sampled

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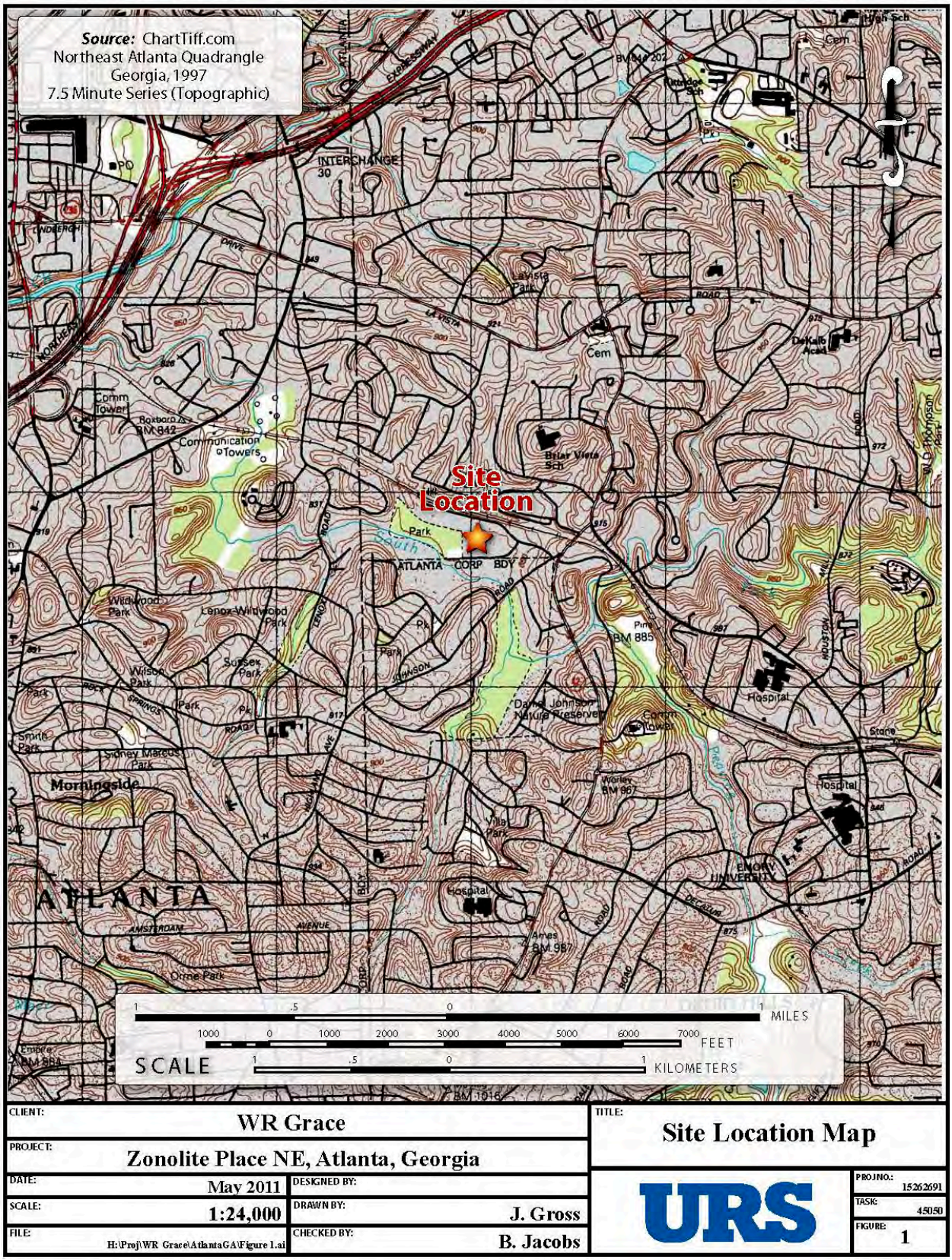

Figure 1. Site Location Map

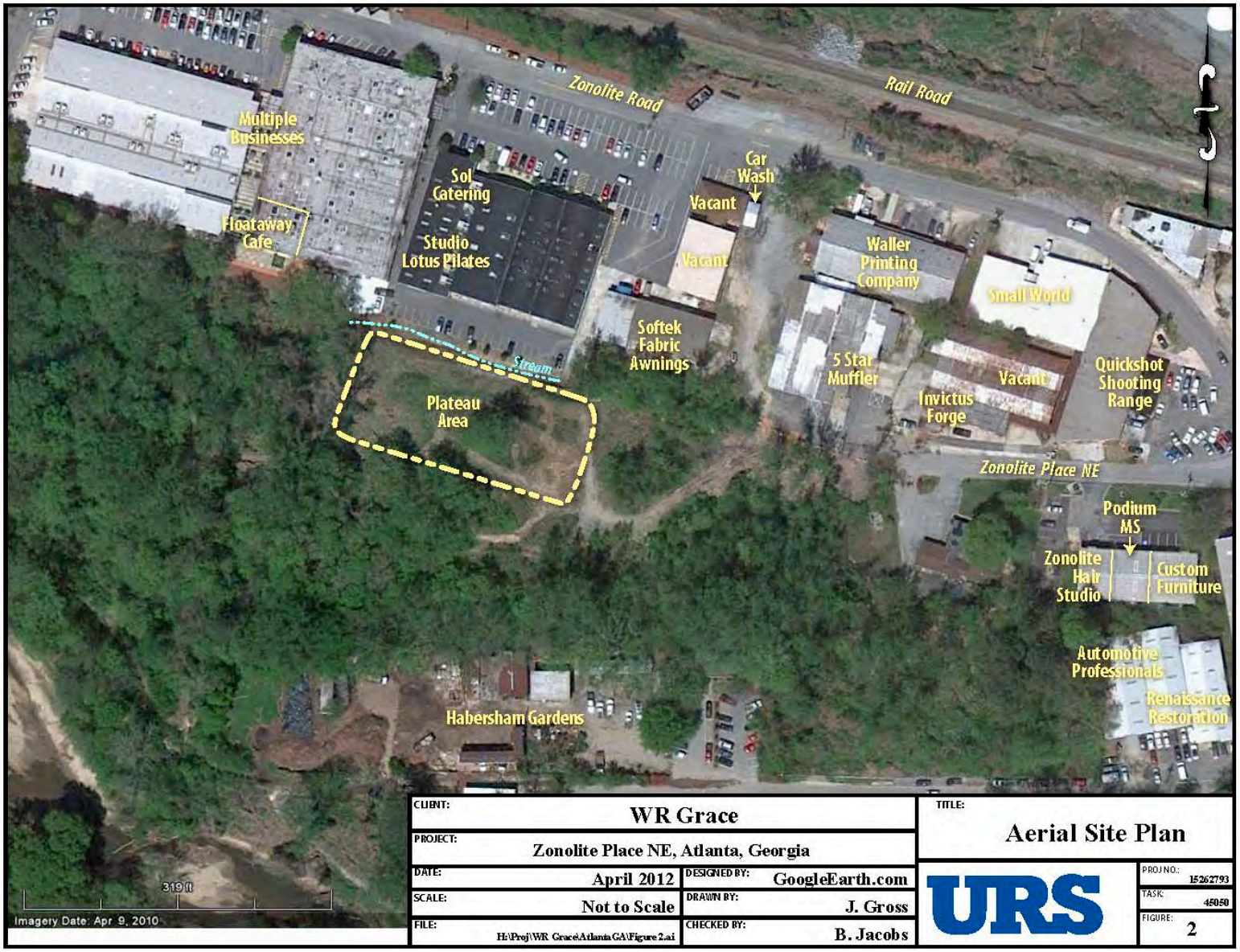

Figure 2. Aerial Site Plan

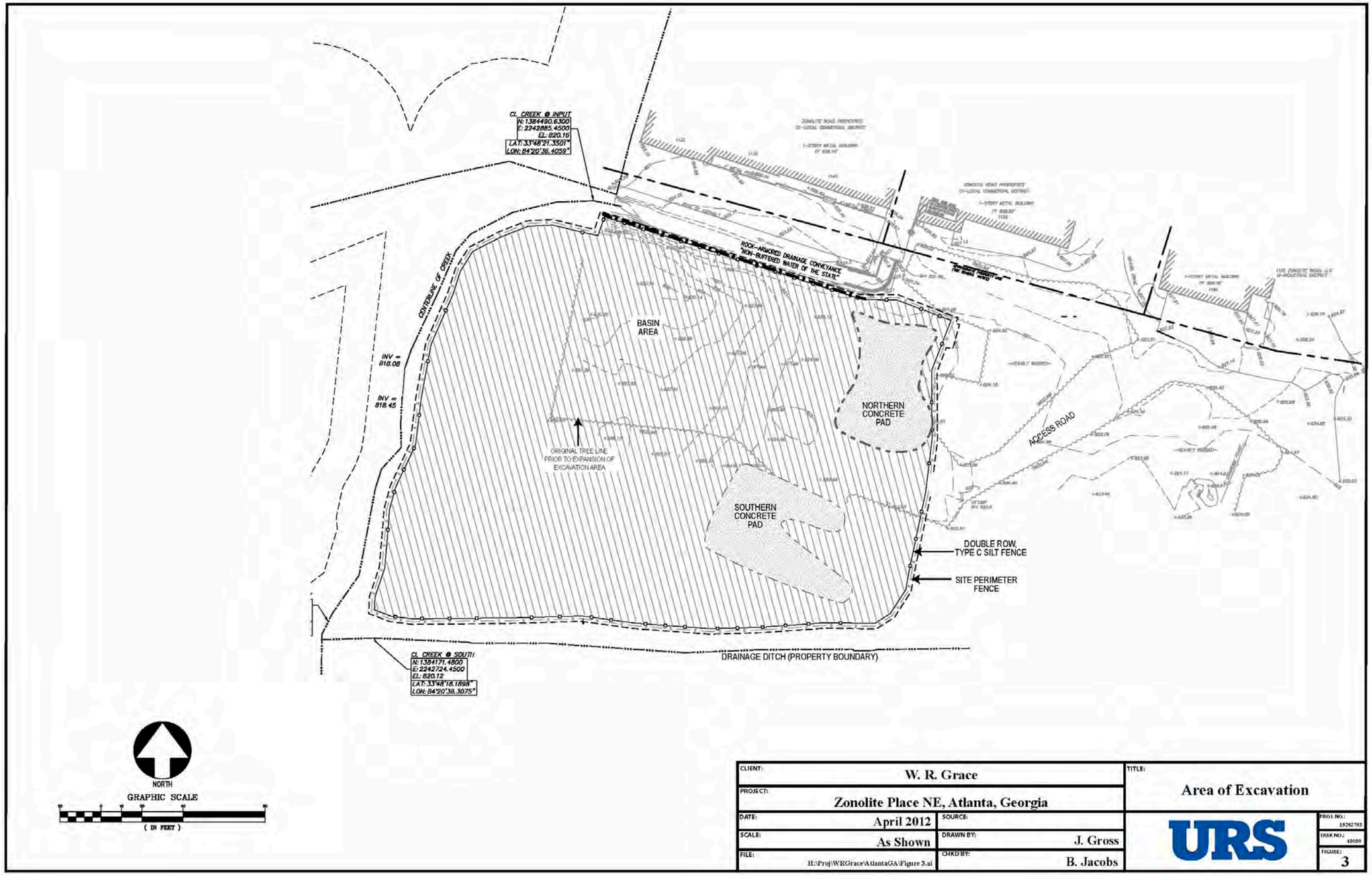

Figure 3. Area of Excavation

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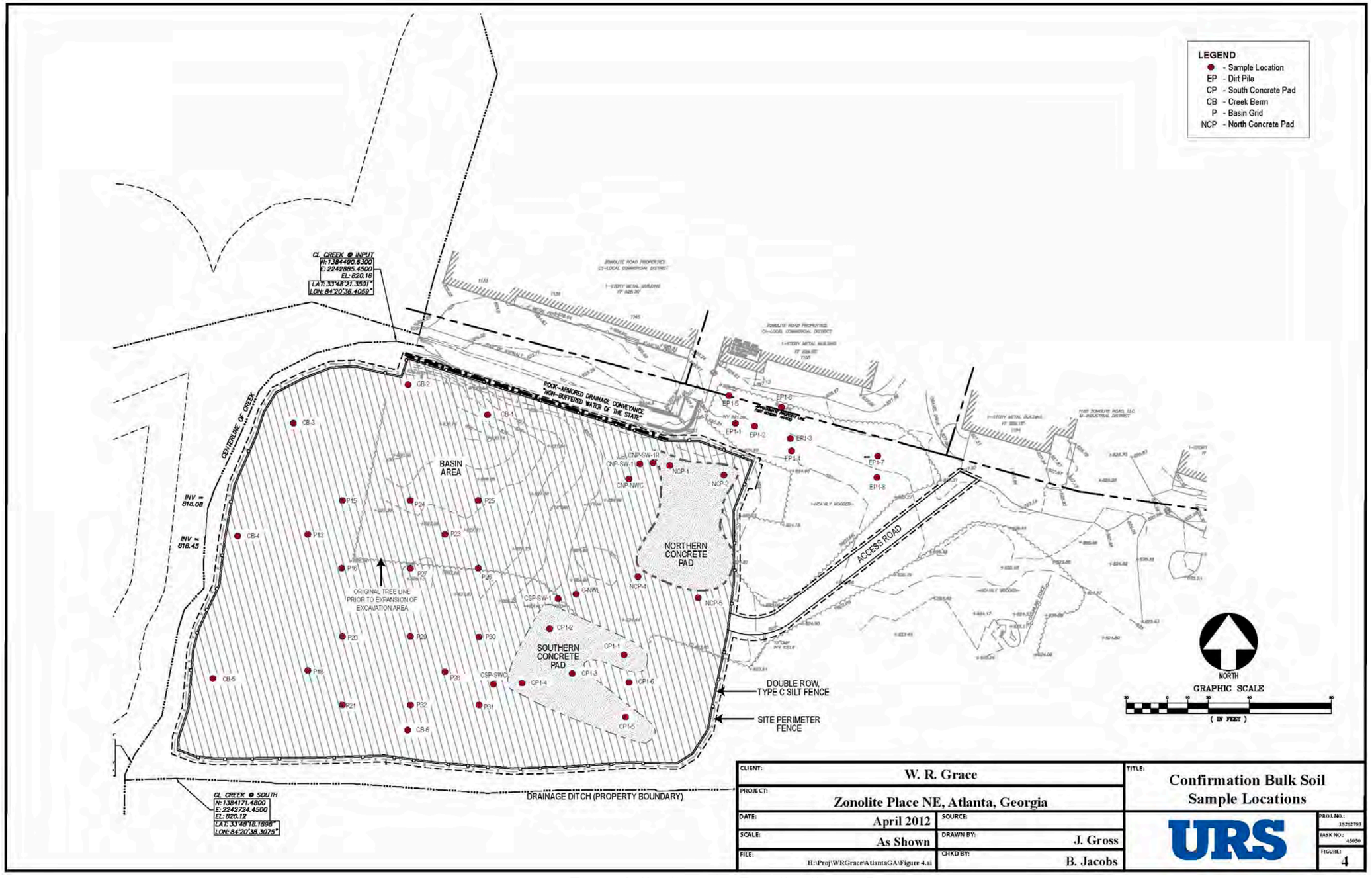

Figure 4. Confirmation Bulk Soil Sample Locations

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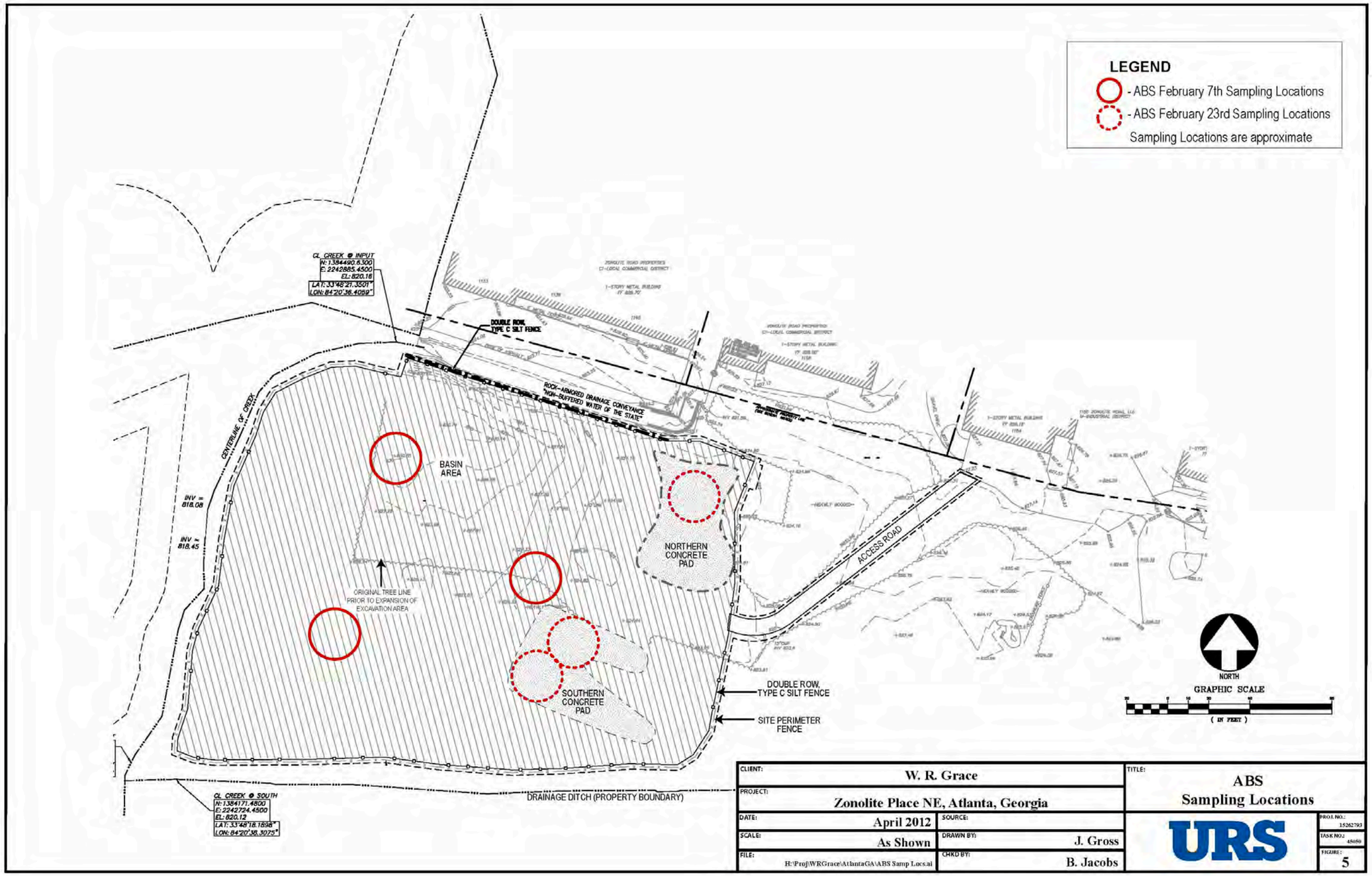

Figure 5. ABS Sample Locations

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