

Scanned By	Date	DOC ID	Permit
Backus	08/23/2016	26647	9231-CDLF-2012

August 9, 2016

Ms. Patricia Backus, P.E.
Environmental Engineer
NCDENR Division of Waste Management
217 W. Jones Street
Raleigh, North Carolina

**RE: Construction Quality Assurance Report
Brownfield Road C&D Landfill (Closure Event No. 1)
Solid Waste Permit No. 92-31
Raleigh, North Carolina**

Dear Ms. Backus:

On behalf of Wake Reclamation, LLC, Smith Gardner, Inc. (S+G) would like to submit for your review the (2) enclosed Construction Quality Assurance (CQA) Reports (one(1) hard copy and one (1) electronic) for the Closure Event No. 1 at the Brownfield Road C&D Landfill.

As you are aware, Closure Event No. 1 took place simultaneously with Phase 2A- Stage 2 construction. A separate certification report for Stage 2 has been submitted earlier. We also have adjusted the **attached** financial to represent both construction of 7.7 acres and closure activities of 6.5 acres.

Should you have any questions to require clarification, please contact us at (919) 828-0577 or by email below.

Sincerely,
SMITH GARDNER, INC.

DocuSigned by:

Stacey A. Smith

Stacey A. Smith, P.E.

Project Manager, ext. 127

stacey@smithgardnerinc.com

Attachments: Financial Assurance – Brownfield Road CDLF

cc: Donald Plessinger, Waste Industries USA, Inc.
David Pepper, Waste Industries USA, Inc.
Jim Poole, Insure-NC



DATE: 27-Jun-16
BY: SAS

**Brownfield Road C&D Landfill (NC Solid Waste Permit No. 92-31)
Engineer's Closure Construction Cost Estimate**

Item No.	Item Description	Unit	Contractor			Comments
			Quantity	Unit Price	Total Price	
Closure Area (Horizontal Plan) ---->			AC	30.4		
1.0	Pre-Construction			Subtotal	\$45,400.00	
1.1	Construction Documents & Bidding	AC	30	\$15k + \$1k/AC	\$45,400.00	S+G Estimate
2.0	Construction				\$1,993,632.00	Reference 1
2.1	Surveys and Layout	AC	30	\$250.00	\$7,600.00	S+G Historical Estimate
2.2	Mobilization	AC	30	\$1,100.00	\$33,440.00	Based on 2016 Closure Event No. 1 Costs
2.3	Site Preparation (repairs to intermediate cover layer)	AC	30	\$2,100.00	\$63,840.00	Based on 2016 Closure Event No. 1 Costs
2.4	18" On-site Low Permeability Soil	CY	73,568	\$8.00	\$588,544.00	S+G Historical Estimate
2.5	18" Vegetative Support Layer	CY	73,568	\$3.50	\$257,488.00	S+G Historical Estimate
2.6	Landfill Gas Venting System	AC	30	\$3,000.00	\$91,200.00	Based on 2016 Closure Event No. 1 Costs
2.7	Cap Drainage Structures (berms, piping, etc.)	AC	30	\$27,000.00	\$820,800.00	Based on 2016 Closure Event No. 1 Costs
2.8	Erosion & Sediment Control (grading, silt fence, maintenance, etc.)	AC	30	\$1,800.00	\$54,720.00	S+G Historical Estimate
2.9	Revegetation	AC	30	\$2,500.00	\$76,000.00	S+G Historical Estimate
3.0	Quality Assurance, Certification, & Deed Notation				\$182,840.00	
3.1	Field Monitoring	AC	30	\$3,000.00	\$91,200.00	S+G Estimate
3.2	Laboratory Testing	AC	30	\$2,500.00	\$76,000.00	S+G Estimate
3.3	Engineering Certification	AC	30	\$5k + \$250/AC	\$12,600.00	S+G Estimate
3.4	Surveying and Deed Notation	AC	30	\$100.00	\$3,040.00	S+G Historical Estimate
4.0	Miscellaneous Costs to Close				\$38,000.00	
4.1	Erosion and Stormwater Control (outside landfill footprint)	AC	30	\$1,000.00	\$30,400.00	S+G Historical Estimate
4.2	Engineering and Reporting	AC	30	\$250.00	\$7,600.00	S+G Historical Estimate
5.0	Total Closure Costs					
Construction Estimate ---->					\$2,259,872	(2016\$)
<i>Cost per Acre ----></i>					<i>\$74,338</i>	
Total Estimate ---->					\$2,259,872	(2016\$) (See Notes 1 & 2)

Notes:

- All costs are presented in current dollars and should be increased at an inflation rate prescribed by the NCDENR Division of Waste Management per <http://portal.ncdenr.org/web/wm/sw/financialassurance> if additional review is not performed annually.
- This ESTIMATE has been prepared for financial assurance purposes only and shall not be considered a replacement for an actual bid from a licensed contractor and is considered acceptable within a +/- 10% of the Total Estimate value.

References:

- Wake Reclamation, LLC, Brownfield Road C&D Landfill, Phase 2B Permit to Construction, October 2015, prepared by Smith Gardner, Inc.
- Final Cover Event No. 1 CQA Documentation dated July 22, 2106 prepared by Smith Gardner, Inc. pending for 6.5 acres of closure.

Denotes values calculated in spreadsheet.

NOTE: Estimate for purpose of permitting only. Actual estimate will be based on actual constructed area.

DATE:
BY:27-Jun-16
SAS

**Brownfield Road C&D Landfill (NC Solid Waste Permit No. 92-31)
Engineer's Post Closure Cost Estimate**

Item	Quantity	Unit	Comments
Groundwater Monitoring			
Monitoring wells	9	wells	Reference 1
Surface water point	3	points	Reference 1
Sampling frequency	2	events	Reference 1
Field sampling, collection, and shipping	\$800	per event	S+G estimate
Laboratory Analysis	\$350	per well	S+G estimate
Data review, statistics, and reporting	\$2,000	per event	S+G estimate
Maintenance and repair	\$100	per well	S+G estimate
Subtotal Cost	\$14,900	per year	Compares to current pricing by Golder
Landfill Gas Management			
Control System Vents	16	vents	Pro-rated @ one (1) per two (2) acres.
Sub-Surface Perimeter Monitoring Probes	10	probes	Per Ref. 1
Control system monitoring, maintenance and repair	\$100	per vent per year	S+G estimate
Semi-Annual Perimeter Monitoring	\$150	per probe per year	S+G estimate
Subtotal Cost	\$3,100	per year	Averaged over post-closure period
Final Cover Management			
Area of maintenance	35	acres	Extends to area immediately around landfill.
Mowing	\$200	per acre	S+G estimate
Erosion and sediment control maintenance	\$200	per acre	S+G estimate
Topdressing (seed & fertilizer)	\$150	per acre	S+G estimate
Vector and rodent control	\$10	per acre	S+G estimate
Maintenance Mobilization	\$2,000	per year	S+G estimate
Subtotal Cost	\$21,600	per year	
Administration, Inspections, and Reporting			
Administration and record keeping	\$1,000	per year	S+G estimate
Inspection	\$1,000	per year	S+G estimate
Miscellaneous engineering	\$1,500	per year	S+G estimate
Subtotal Cost	\$3,500	per year	
Subtotal Post-Closure Costs			
Estimated Average Annual Costs	\$43,100	per year (2016\$)	
Number of Years for Post-Closure	30	years	
Cost per Acre	\$1,231	per year	
Subtotal Post Closure Costs	\$1,293,000	(2016\$) (See Notes 1 & 2)	
Potential Assessment and Corrective (Remedial) Action			
Minimum amount required by NCDENR Division of Waste Management	\$1,000,000	lump sum	Regulatory requirement (G.S. 130A-295.2 (h1))
Subtotal Remedial Cost	\$1,000,000	lump sum	
Total Post Closure and Remedial Costs	\$2,293,000	(2016\$) (See Notes 1 & 2)	
Total Closure, Post Closure, and Remedial Costs	\$4,552,872	(2016\$) (See Notes 1 & 2)	

Notes:

- All costs are presented in current dollars and should be increased at an inflation rate prescribed by the NCDENR Division of Waste Management per <http://portal.ncdenr.org/web/wm/sw/financialassurance> if additional review is not performed annually.
- This ESTIMATE has been prepared for financial assurance purposes only and shall not be considered a replacement for an actual bid from a licensed contractor and is considered acceptable within a +/- 10% of the Total Estimate value.

NOTE: Estimate for purpose of permitting only. Actual estimate will be based on actual constructed area.

References:

- Wake Reclamation, LLC., Brownfield Road C&D Landfill, Phase 2B Permit to Construction, October 2015, prepared by Smith Gardner, Inc.
Denotes values calculated in spreadsheet.

Construction Quality Assurance Report

Brownfield Road C&D Landfill – Closure Event No. 1 Raleigh, North Carolina

Prepared for:

Wake Reclamation, LLC
(A Subsidiary of Waste Industries USA, Inc.)
Raleigh, North Carolina



July 2016

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
Date 08/18/2016 By Patricia M. Beckus
DIN 26647
Attachment 1 Part III Document 20
Permit 9231-CDLF-2012 Permit DIN 26176

Prepared by:

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577



PRINTED ON 100% RECYCLED PAPER

© 2016 Smith Gardner, Inc.

This document is intended for the sole use of the client for which it was prepared and for the purpose agreed upon by the client and Smith Gardner, Inc.

This page intentionally left blank.

Construction Quality Assurance Report

Brownfield Road C&D Landfill Closure Event No. 1 Raleigh, North Carolina

Prepared For:

Wake Reclamation, LLC

(A Subsidiary of Waste Industries USA, Inc.)

Raleigh, North Carolina

S+G Project No. BROWNFIELD-16-1

DocuSigned by:
Stacey A. Smith
Stacey A. Smith, P.E.
Senior Engineer

27B482DF1A09438... 8/10/2016



July 2016

NC LIC. NO. C-0828 (ENGINEERING)

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

This page intentionally left blank.

Brownfield Road C&D Landfill Closure Event No. 1 Raleigh, North Carolina

Construction Quality Assurance Report

Table of Contents

	<u>Page</u>
1.0 OVERVIEW	1
2.0 PROJECT DESCRIPTION	1
2.1 General.....	1
2.2 Reference Documents	1
2.3 Project Participants	1
2.3.1 Owner	1
2.3.2 Engineer/CQA Engineer	2
2.3.3 CQA Testing - Earthwork & Construction Monitoring	2
2.3.4 Contractor	2
2.3.5 Owner's Surveyor	2
3.0 SUMMARY OF CONSTRUCTION ACTIVITIES.....	3
3.1 Site Preparation	3
3.2 Landfill Gas Vents	3
3.3 Erosion and Sedimentation Control Measures.....	3
3.4 Final Cover	3
4.0 CQA PROGRAM	4
4.1 Scope of Services	4
5.0 EARTHWORK CQA.....	4
6.0 PROJECT CERTIFICATION	4

FIGURES

Figure 1	Limits of Certification
Figure 2	Final Cover As-Built

APPENDICES

Appendix A	Reference Documents (Permit)
Appendix B	Photographic Log
Appendix C	Meeting Minutes

This page intentionally left blank.

1.0 OVERVIEW

This Construction Quality Assurance (CQA) Report has been prepared to document the CQA activities performed during the Closure Event No. 1 of the Brownfield Road Construction and Demolition (C&D) Landfill. The landfill facility is located on Brownfield Road in Raleigh, North Carolina and is owned and operated by Wake Reclamation, LLC under North Carolina Solid Waste Permit No. 92-31.

2.0 PROJECT DESCRIPTION

2.1 General

Closure Event No. 1 is a 6.5 acre closure area of the existing C&D landfill. The construction documents were prepared by Smith Gardner, Inc. (S+G). The final cover was installed using soils obtained from on-site sources located within the limits of the facility. In addition to the cover, the Closure Event No. 1 design also includes associated side slope swales and erosion and sedimentation control (E&SC) measures.

2.2 Reference Documents

Closure Event No. 1 was constructed in accordance with the following documents :

Permit To Construct - Brownfield Road C&D Landfill - Phase 2B:

Approval for alternative cover issued by NCDENR-DWM on August 8, 2016 (copy provided in **Appendix A**).

Erosion and Sedimentation Control Plan for Brownfield Road C&D Landfill - Phase 2A Stage 2 Construction & Closure Event No. 1, submitted by Smith Gardner, Inc., January 2016, to update previous permits, as follows:

- Permit S#2148-A3 submitted by Smith Gardner, Inc., January 2016. Approved by Wake County Environmental Services Sedimentation & Erosion Control on February 3, 2016

2.3 Project Participants

The following parties were involved in the construction and CQA of Closure Event No. 1:

2.3.1 Owner

Wake Reclamation, LLC
2600 Brownfield Road
Raleigh, NC27610
Phone: (336) 883-3215
Contact: Donald Plessinger, Landfill Manager

2.3.2 Engineer/CQA Engineer

Smith Gardner, Inc. (S+G)
14 N. Boylan Ave.
Raleigh, NC 27603
Phone: (919) 828-0577
Fax: (919) 828-3899

Contacts: Stacey A. Smith, P.E., Senior Engineer
Carter T. Shore, E.I., Staff Engineer

2.3.3 CQA Testing - Earthwork & Construction Monitoring

Geotechnics (Soil Testing)
2200 Westinghouse Blvd., Suite 103
Raleigh, NC 27604
Phone: (919) 876-0405
Fax: (919) 876-0460

Contacts: Michael Smith, Regional Manager
Aaron Smith, Field Technician

2.3.4 Contractor

Baxter Johnson Contracting (BJC)
PO Box 33343
Raleigh, NC 27636
Phone: (919) 851-2617

Contacts: Brady Johnson, President
Brad Murray, Site Superintendent

2.3.5 Owner's Surveyor

Surveying Solutions, PC
PO Box 376
Louisburg, NC 27549
Phone: (919) 340-2250

Contact: Dwayne Kroeze, PLS

3.0 SUMMARY OF CONSTRUCTION ACTIVITIES

Major elements of the project are discussed below. Photos documenting the construction of Closure Event No. 1 can be found in **Appendix C**. Prior to BJC beginning work, a project Pre-Construction Meeting was held on January 19, 2016.

3.1 Site Preparation

Construction of Closure Event No. 1 began on January 26, 2016 with the surveying/staking of the limits of construction and the initiation of site preparation activities by BJC.

3.2 Landfill Gas Vents

Landfill gas vents were installed in accordance with the project drawings.

3.3 Erosion and Sedimentation Control Measures

The construction of erosion and sedimentation control measures took place in conjunction with project activities and under the site permits issued by Wake County Erosion and Sedimentation Control Services (Appendix B). Permanent and temporary drainage channels were added as areas were brought to grade. Once areas reached final grade, the areas were vegetated in accordance with project requirements.

3.4 Final Cover

The work area was cleared and topsoil was taken to the stockpile area for later use by BJC on the closure area or future use as daily/intermediate cover by the Landfill. Afterwards, final cover placement took place. A minimum of two (2) feet of vegetative soil was placed, tracked in, and graded. Soil was visually inspected to verify that no deleterious material was present. Side slope swales and the side slope bench drain were constructed with appropriate structural fill material, compacted, and lined with matting. Down pipes were installed in conjunction with side slope swales. The perimeter ditch along the closure area was cleared and re-graded and matting and check dams installed. Down pipe out protection was then installed.

Upon completion of construction, Mr. Kroeze performed the record survey, and Carter Shore, E.I. from S+G conducted a post-construction cover inspection. Test holes were dug using a hand auger at a frequency of four(4) per acre to verify minimum final cover thickness.

4.0 CQA PROGRAM

4.1 Scope of Services

In satisfying the requirements of the Project CQA Manual for Closure Event No. 1, the following activities were performed:

- Observation and documentation of construction of final cover system.
- Review of submittals from the Contractor for conformance with project specifications and CQA requirements.
- Review/preparation of record drawings.
- Preparation of the final CQA report.

5.0 EARTHWORK CQA

The criteria for construction of embankment per the project specifications included the following:

- Materials: SP, SW, SM, SC, ML, or CL (ASTM D 2488) with no topsoil or other deleterious material and no stones or rocks in excess of one half the lift thickness as compacted;
- Moisture Content: As necessary for compaction; and
- Lift Thickness: 8-inch max. (compacted).

6.0 PROJECT CERTIFICATION

Based on the observations and results of the CQA program documented herein, it is our professional opinion that the construction of Closure Event No. 1 of the Brownfield Road C&D Landfill was completed in accordance with the following:

- The Project CQA Manual;
- The conditions of the Permit to Construct; and
- Acceptable engineering practices.

DocuSigned by:

 Stacey A. Smith, P.E.
 Senior Engineer



SMITH GARDNER, INC.

Appendix A

Reference Documents

**Construction Quality Assurance Report
Brownfield Road C&D Landfill Phase 2A Stage 2
Raleigh, North Carolina**

This page intentionally left blank.



PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

MICHAEL SCOTT
Director

August 8, 2016

Mr. Don Plessinger
General Manager
Wake Reclamation, LLC
2600 Brownfield Road
Raleigh, NC 27610

Subject: Approval of Modified Closure Plan
Brownfield Road C&D Landfill
Permit No. 9321-CDLF-2012. Wake County, Document Id No. 26585

Dear Mr. Plessinger:

The permit to construct application for Phase 2B (DIN 25398 and 25399) proposed an alternative cap system for closure of the landfill. The Division of Waste Management, Solid Waste Section (Section), has reviewed the modified closure plan and has determined that it meets the requirements for an alternative cap system as stated in 15A NCAC 13B .0543(e)(3). Therefore, per this letter, the Section approves the modification of the closure plan.

Please submit your construction quality assurance report for the partial closure of Phase 1 as soon as possible so it can be included in the current permit action.

If you have any other questions, you may contact me at (919) 707-8257 or by email at pat.backus@ncdenr.gov.

Sincerely,

Patricia M. Backus, P.E., Environmental Engineer
Division of Waste Management, NCDEQ

cc: David Pepper, Waste Industries USA, Inc.
Stacey Smith, P.E., Smith + Gardner
Ed Mussler, P.E., Permitting Branch Supervisor
Drew Hammonds, Eastern District Supervisor
Elizabeth Patterson, Environmental Senior Specialist



Facility Permit No: 92-31
Material Recovery C&D Landfill
Permit to Construct and Operate
January 28, 2011
Doc ID: 12346
Page 1 of 16

North Carolina Department of Environment and Natural Resources
Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION

CONSTRUCTION AND DEMOLITION LANDFILL FACILITY
Permit No. 92-31

MATERIAL RECOVERY, LLC
and WCA WASTE SYSTEMS, INC., wholly owned subsidiaries of
WCA WASTE CORPORATION
are all hereby issued a

PERMIT TO CONSTRUCT
MATERIAL RECOVERY C&D LANDFILL
Phase 2A, and a

PERMIT TO OPERATE
MATERIAL RECOVERY C&D LANDFILL
Phase 1, Cells A, B, and C

Located at 2600 Brown Field Road, southeast of Raleigh, Wake County, North Carolina, in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The legal description of the site is identified on the deeds recorded for this property listed in Attachment No. 1 of this permit.

Edward F. Mussler, III, P.E.,
Permitting Branch Supervisor
Solid Waste Section

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Telephone 919-508-8400 \ Fax 919-733-4810 \ Internet <http://wastenotnc.org>

An Equal Opportunity / Affirmative Action Employer – Printed on Dual Purpose Paper

One
North Carolina
Naturally

ATTACHMENT 1

PART I: PERMITTING HISTORY

Permit Type	Date Issued	Doc ID
Site Suitability Approval Letter	January 24, 2003	10050
Original Issue PTC (Phase 1 – Cells A, B, & C)	January 31, 2003	3232
PTO Phase 1, Cell A	October 1, 2003	10050
PTO Modification - New franchise / Wood waste processing area added	February 18, 2005	3600
PTO–Phase 1, Cell B	May 23, 2006	230
PTO– Phase 1, Cell C, and ownership change	January 28, 2008	3612
PTC Phase 2A	January 28, 2011	12346
PTO – 5 year amendment Phase 1, Cells A, B, and C	January 28, 2011	12346

1. In 2003, a Permit to Construct for Phase 1, and Permit to Operate for Phase 1 Cell A were issued to Material Recovery, LLC, owned by MRR Southern, LLC. The Permit to Construct was recorded on February 14, 2003, at Book 9914, Pages 701 – 720 in the Wake County Register of Deeds.
2. On or about April 5, 2005, business entities which were wholly owned by WCA Waste Corporation purchased four solid waste management facilities in North Carolina owned by MRR Southern, LLC, including the construction and demolition waste landfill permitted to Material Recovery, LLC. Subsequent to the purchase of the facility, WCA obtained a franchise for the landfill from Wake County and applied for the permit to operate the facility to be re-issued to WCA Waste Systems, Inc. and Material Recovery, LLC. During this period, WCA continued to operate the landfill as previously permitted to Material Recovery, LLC. The permit that approved the ownership change was issued in January 2008.

PART II: LIST OF DOCUMENTS FOR THE APPROVED PLAN

1. *Volume One - Site Application, Material Recovery, LLC/Brown-field Road Construction & Demolition Landfill.* December 2001. Joyce Engineering, Inc., Greensboro, NC. Revised through 2003. Doc ID 3602 (partial, Section II).
2. *Volume Two - Site Application, Material Recovery, LLC/Brown-field Road*

Construction & Demolition Landfill. December 2001. Joyce Engineering, Inc., Greensboro, NC. Revised through 2003. Doc ID 10463.

3. *Construction Certification, Phase 1, Cell A*. Prepared by Joyce Engineering, Greensboro, NC. September 16, 2003.
4. Modification: Letter dated 25 March 2004 requesting the use of soils off-site with less than 10 ppm nitrate and addressing that soils with greater than 10 ppm nitrate levels be utilized on-site. Doc ID 10051.
5. Modification: New franchise approvals for Material Recovery, LLC. 20 January 2004 and 2 February 2004, Wake Board of Commissioners. The franchise changes include adding Franklin County to the service area and increasing the daily disposal amount. Doc ID 10551.
17. *Construction Quality Assurance Report, WCA Brownfield Road C&D Landfill Cell B*. Prepared by: David Garrett, P.G., P.E, Raleigh, NC. May 22, 2006. Doc ID 232.
18. Letter from Stephen R. Berlin to Paul Crissman, dated November 16, 2006, requesting issuance of permit to WCA Waste Corporation and providing information to support the request for permit issuance. Doc ID 823.
19. *Construction Quality Assurance Report, WCA Brownfield Road C&D Landfill Cell C*. Prepared by: David Garrett, P.G., P.E, Raleigh, NC. April 13, 2007. Doc ID 3828.
20. *Application for Permit to Construct, Phase 2A*. Prepared by David Garrett, P.G., P.E, Raleigh, NC. June 25, 2008, revised through December 2010. Doc ID 12363.
21. *Application for Permit to Construct, Phase 2A, Design Hydro Report, Water Quality Monitoring Plan, and Landfill Gas Monitoring Plan*. Prepared by David Garrett, P.G., P.E, Raleigh, NC. June 25, 2008, revised through March 2010. Doc ID 10041. Approval letter Doc ID 10047.

PART III: PROPERTIES APPROVED FOR THE SOLID WASTE FACILITY

Wake County, N.C. Register of Deeds					
Book	Page	Grantee	Grantor	Tract	Acres
8806	845	Material Recovery, LLC	William A. Turner and wife, Debra C. Turner	1	113.55
8806	849	Material Recovery, LLC	Ashley Turner Enterprises, Inc.	N/A	98.41
Book of Maps 2002	791	Material Recovery, LLC	Material Recovery, LLC	1A and 1B	211.96
Book of Maps 2003	1508	Material Recovery, LLC	Material Recovery, LLC and Margaret Talton	1	210.19
Total Site Acreage					210.19

The Wake County property ID is 174 163 9103, and the Real Estate ID is 4648.

PART IV: GENERAL PERMIT CONDITIONS

1. This permit is issued by the North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section (Section). In accordance with North Carolina Solid Waste Management Rule 15A NCAC 13B .0201(d), a solid waste management facility permit shall have two parts: a Permit to Construct and a Permit to Operate. The Permit to Construct shall expire January 28, 2016. The Permit to Construct shall be implemented in accordance with Attachment 2 of this permit. The Permit to Operate shall expire January 28, 2016. The Permit to Operate must be implemented in accordance with Attachment 3 of this permit.
2. The persons to whom this permit is issued (“permittee”) are the owners and operators of the solid waste management facility.
3. (Intentionally Blank)
4. When this property is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer must contain in the deed description section, in no smaller type than that used in the body of the deed or instrument, a statement that the property has been used as a sanitary landfill and a reference by book and page to the recordation of the permit.
5. By beginning construction or receiving waste at this facility the permittee shall be considered to have accepted the terms and conditions of this permit.

6. Construction and operation of this solid waste management facility must be in accordance with the Solid Waste Management Rules, 15A NCAC 13B, Article 9 of Chapter 130A of the North Carolina General Statutes (NCGS 130A-290, et seq.), the conditions contained in this permit, and the approved plan. Should the approved plan and the rules conflict, the Solid Waste Management Rules shall take precedence unless specifically addressed by permit condition.
7. This permit is issued based on the documents submitted in support of the application for permitting the facility identified in Attachment 1, "List of Documents for Approved Plan," which constitutes the approved plan for the facility. Where discrepancies exist, the most recent submittals and the Conditions of Permit shall govern.
8. This permit may be transferred only with the approval of the Section, through the issuance of a new or substantially amended permit in accordance with applicable statutes and rules. In accordance with NCGS 130A-295.2(g), the permittee must notify the Section thirty (30) days prior to any significant change in the identity or business structure of either the owner or the operator, including but not limited to, a proposed transfer of ownership of the facility or a change in the parent company of the owner or operator of the facility.
9. The permittee is responsible for obtaining all permits and approvals necessary for the development of this project including approval from appropriate agencies for sedimentation and erosion control, and a General or Individual National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit, if applicable. Issuance of this permit does not remove the permittee's responsibilities for compliance with any other local, state or federal rule, regulation or statute.

- End of Section -

ATTACHMENT 2 CONDITIONS OF PERMIT TO CONSTRUCT

1. Pursuant to the NC Solid Waste Management Rules (Rule) 15A NCAC 13B .0201(c) and (d)(1), this permit approves construction for Phase 2A of the landfill, consisting of approximately 16.7 acres with a projected operating capacity of 1,400,000 cubic yards of airspace.
2. The initial, substantial, construction authorized by this Permit to Construct must commence within 18 months from the issuance date of this permit. If substantial construction does not begin within 18 months from the issuance date of this permit, then the permit to construct shall expire. Substantial construction includes, but is not limited to, issuance of construction contracts, mobilization of equipment on site, and construction activities including installation of sedimentation and erosion control structures. The permittee may reapply for the Permit to Construct prior to the expiration date. The re-application will be subject to the statutes and rules in effect on that date and may be subject to additional fees.
3. Construction of all solid waste management units within this facility must be in accordance with the pertinent approved plans and only for those phases of development approved for construction as described in Attachment I, Part II, List of Documents for the Approved Plan.
4. The permittee must conduct a preconstruction meeting at the facility prior to initiating construction of any unit/cell and must notify the Section at least 10 days prior to the meeting.
5. Modifications or revisions of the approved documents or changes during construction of any landfill unit/cell require approval by the Section, and may constitute a permit modification and be subject to a permitting fee.
6. The following conditions must be met prior to operation of Phase 2A:
 - a. Construction Quality Assurance (CQA) documentation and a certification by the project engineer that the landfill was built in accordance with approved plans and the conditions of the permit must be submitted to the Section for review and approval.
 - b. The edge of the waste footprint must be identified with permanent physical markers, for both existing units and the new unit.

- c. The Permittee must contact the appropriate regional environmental specialist and permitting engineer to determine whether the Section chooses to hold a pre-operative meeting with key landfill personnel and representatives of the Section.
 - d. Documentation of financial assurance mechanisms must be submitted to the Section. The financial assurance amount must include closure and post-closure costs including the new phase to receive the PTO, in accordance with 15A NCAC 13B .0546, and must include costs for potential assessment and corrective action, in accordance with NCAC 13A 295.2 (h).
 - e. The Permittee must obtain a Permit to Operate for the phase from the Section in accordance with 15A NCAC 13B .0201(d).
 - f. New groundwater monitoring wells for Phase 2A, as shown on Drawing MP1 (Doc ID 10041), must be installed and monitored, in accordance with the approval letter (Doc ID 10047).
 - g. New landfill gas monitoring wells, as shown on Drawing MP1 (Doc ID 10041), must be installed and monitored.
 - h. An electronic (pdf) copy of the Sedimentation and Erosion Control permit or approval letter from Wake County for Phase 2A must be submitted to the Section.
7. If dried sludge from the site's previous use as a composting/sludge application site are encountered during excavation of the landfill cell, the dried sludge must be stockpiled separately from the insitu soils and must not be used in the cell construction.
 8. No rock blasting is allowed in construction without written approval of a blasting plan by the Section.
 9. Prior to construction of Phases 2B through 5, a Permit to Construct application must be submitted for approval to the Section. The application must be prepared in accordance with applicable statutes and rules in effect on that date and will be subject to a permitting fee.
 10. Pursuant to Rule 15A NCAC 13B .0542(i)(2), burning of land-clearing debris generated on-site, as a result of construction activities, requires approval by the Section prior to initiating the burn. In addition, the Division of Air Quality and local fire department must approve the activity prior to burning.

Geologic, Water Quality, and Landfill Gas Monitoring Requirements

11. Prior to construction of the phase or cell(s) within the phase, all piezometers, borings, and groundwater and landfill gas monitoring wells within the footprint must be properly abandoned by overdrilling first (exception of non-cased borings) and sealed with grout in accordance with 15A NCAC 2C .0113 (d)(2), entitled "Abandonment of Wells."
12. In areas where soil is to be undercut, abandoned piezometers, groundwater and landfill gas monitoring wells and borings must not be grouted to pregrade land surface, but to the proposed base grade surface to prevent having to cut excess grout and possibly damage the wells.
13. A Licensed Geologist must report any pertinent geological feature(s) exposed during phase or cell excavation. Prior to placing any landfill liner, the geologist must submit to the Section hydrogeologist a written report that includes an accurate description of the exposed geological feature(s) and effect of the geological feature(s) on the design, construction, and operation of the cell, phase, or unit.
14. A Licensed Geologist must supervise the installation of groundwater monitoring wells and landfill gas monitoring wells. Each groundwater monitoring well and landfill gas well must be surveyed for location and elevation. Each groundwater monitoring well and landfill gas monitoring well must have an identification plate permanently attached to the well, in accordance with 15A NCAC 2C .0108(o).
15. Any modification to the approved water quality monitoring, sampling, landfill gas, and analysis plan must be submitted to the Section Hydrogeologist for review.
16. Groundwater and landfill gas monitoring well construction and abandonment must meet the requirements of 15A NCAC 02C.
17. Within 30 days of completed construction of each new groundwater and landfill gas monitoring well, a well construction record, well schematic, boring log, field log and notes, and description of well development activities, certified by a Licensed Geologist, must be submitted to the Section. Form GW-1(b) must be used for both groundwater and landfill gas wells. The submittal must also include a scaled topographic map, showing the location and identification of new, existing, and abandoned wells and piezometers.
18. Within thirty (30) days of the abandonment of any groundwater monitoring well or landfill gas monitoring well, the well abandonment record and any additional information included in the abandonment record must be certified by a Licensed Geologist, and

submitted to the Section. Form GW-30 must be used for both groundwater and landfill gas wells.

19. All forms, reports, maps, plans, and data submitted to the Section must include an electronic (pdf) copy.
20. Proper abandonment records must be submitted to the Section for the residential drinking water well located in the center of Phase 2. The records must be submitted with the CQA report for the construction area of Phase 2 containing the well.

Erosion and Sedimentation Control Requirements

21. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act N.C.G.S. 113A-50, et seq., and rules promulgated under 15A NCAC 4. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.
22. Facility construction, operations or practices must not cause or result in a discharge of pollution, dredged material, and/or fill material into waters of the state in violation of the requirements under Sections 401 and 404 of the Clean Water Act, as amended.
23. Modifications to the approved sedimentation and erosion control activities require approval by the North Carolina Land Quality Section. The Section must be notified of any sedimentation and erosion control plan modifications.

- End of Section -

ATTACHMENT 3 CONDITIONS OF OPERATING PERMIT

PART I: OPERATING CONDITIONS

1. The Permit to Operate shall expire January 28, 2016. Pursuant to 15A NCAC 13B .0201(g), no later than September 28, 2015, the permittee must submit to the Section a permit amendment application prepared in accordance with 15A NCAC 13B .0535 (b).
2. This permit approves the continued operation of Phase 1, Cells A, B, and C of the landfill, as well as the onsite environmental management and protection facilities as described in the approved plans. Operation of future phases or cells requires written approval of the Section after documentation has been submitted that the area has been constructed in accordance with applicable statutes and rules.
3. The following table lists the dimensions and details for the landfill, both existing and planned. Total gross capacity is defined as the volume measured from the bottom of waste through the top of final cover. The estimated life of the landfill, for both northern and southern areas, is approximately 21.9 years from 2010.

Phase	Acres	Gross Capacity	Status
1	20	1,636,000	Partially filled
2A	16.7	1,400,000	Approved for construction
2B	8.2	1,400,000	future
2C	*	1,400,000	future
Total northern area	45	5,836,000	
Southern area 3-5	24.2	2,300,000	future
Total northern and southern areas	69.2	8,136,000	

*Phase 2C will be vertical fill over Phases 1, 2A, and 2B.

4. The permittee must maintain permanent markers that accurately identify the edge of the approved waste disposal boundary.

5. Fill operations must be contained within the approved elevation contours as shown on the approved application drawings. The maximum approved fill elevation for Phase 2A is 310 feet mean sea level, as shown on Drawing 8 (E2), Doc ID 12363.
6. The landfill is permitted to receive the following waste types:
 - a. "C&D solid waste" as defined in 15A NCAC 13B, Rule .0532(8) means solid waste generated solely from the construction, remodeling, repair, or demolition operations on pavement and buildings or structures. C&D waste does not include municipal and industrial wastes that may be generated by the on-going operations at buildings or structures.
 - b. "Inert debris" as defined in G.S. 130A-290 (a)(14) means solid waste that consists solely of material such as concrete, brick, concrete block, uncontaminated soil, rock, and gravel.
 - c. "Land-clearing debris" as defined in G.S. 130A-290 (a)(15) means solid waste which is generated solely from land clearing activities, limited to stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material.
 - d. "Asphalt" in accordance with G.S. 130-294(m).
7. Regulated asbestos-containing material must be managed in accordance with 40 CFR 61. Disposal of asbestos waste must be in accordance with 15 NCAC 13B .0542 (c).
8. Those wastes listed in 15A NCAC 13B .0542 (e) must not be accepted for disposal including, but not limited to, hazardous waste, municipal solid waste, liquid waste, commercial and industrial wastes, and yard trash.
9. Wastewater treatment sludge is not approved for disposal. Wastewater treatment sludge may be accepted, with the approval of the Section, for utilization as a soil conditioner and incorporated into or applied onto the vegetative growth layer. The wastewater treatment sludge must not be applied at greater than agronomic rates nor to a depth greater than six inches.
10. The facility is approved to accept approximately 1100 tons per day, approximately 286 days per year (5.5 days per week), with a maximum variance in accordance with GS 130A-294(b1)(1) and consistent with the approved franchise granted by the County of Wake dated February 2, 2004.
11. This facility is permitted to receive solid waste generated within the following counties: Chatham, Durham, Franklin, Johnston, Orange, and Wake and the municipalities

contained within those counties, consistent with the approved franchise approved by the Wake County Board of Commissioners.

12. The permittee must not knowingly dispose of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:
 - a. Prohibits generators or collectors of C&D waste from disposing of that type or form of C&D waste.
 - b. Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.
13. The facility operator must complete an approved operator training course in compliance with G.S. 130A-309.25.
 - a. A responsible individual certified in landfill operations must be on-site during all operating hours of the facility at all times while open for public use to ensure compliance with operational requirements.
 - b. All pertinent landfill-operating personnel must receive training and supervision necessary to properly operate the C&D landfill unit in accordance with G.S. 130A-309.25 and addressed by memorandum dated November 29, 2000.
14. The permittee must actively employ a training and screening program at the facility prepared in accordance with Section .0544(e) for detecting and preventing the disposal of excluded or unauthorized wastes. At a minimum, the program must include:
 - a. Random inspections of incoming loads or other comparable procedures.
 - b. Records of any inspections.
 - c. Training of personnel to recognize hazardous, liquid, and other excluded waste types.
 - d. Development of a contingency plan to properly manage any identified hazardous, liquid, MSW, or other excluded or unauthorized wastes. The plan must address identification, removal, storage, and final disposition of these wastes.
15. The use of alternative periodic cover requires approval, prior to implementation, by the Section. Requests for alternative periodic cover approval must include a plan detailing the comprehensive use and a demonstration of the effectiveness of the alternative cover, developed according to Section guidelines. Plans that are approved by the Section will be incorporated into, and made a part of, the approved documents listed in Attachment 1.

16. Financial assurance must be continuously maintained for the duration of the facility in accordance with Rule 15A NCAC 13B .0546, 15A NCAC 13B .0547 (2), and NCGS 130A 295.2 (h). The owner and operator must annually adjust cost estimates including closure and post-closure activities, and potential assessment and corrective action costs, for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s), pursuant to 15A NCAC 13B .0546.
17. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act N.C.G.S. 113A-50, et seq., and rules promulgated under 15A NCAC 4. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.
18. Facility construction, operations or practices must not cause or result in a discharge of pollution, dredged material, and/or fill material into waters of the state in violation of the requirements under Sections 401 and 404 of the Clean Water Act, as amended.
19. Modifications to the approved sedimentation and erosion control activities require approval by the North Carolina Land Quality Section. The Section must be notified of any sedimentation and erosion control plan modifications.
20. An updated closure and post-closure plan must be submitted for approval at least 90 days prior to closure or partial closure of any landfill unit. The plan must include all steps and measures necessary to close and maintain the C&D unit in accordance with all rules in effect at that time. At a minimum, the plan must address the following:
 - a. Design of a final cover system in accordance with 15 NCAC 13B .0543(c), or the solid waste management rules in effect at the time of closure;
 - b. Construction and maintenance/operation of the final cover system and erosion control structures; and
 - c. Surface water, ground water, and explosive gas monitoring.

PART II: MONITORING AND REPORTING REQUIREMENTS

21. Groundwater, surface water, and landfill gas monitoring locations must be established and monitored as identified in the approved plans (Doc ID 10041 and 10047). Any proposed modification to an approved plan must be submitted to the Section and approved prior to implementation.

22. The permittee must obtain approval from the Section for the modification of any groundwater or landfill gas monitoring well. Design, construction, abandonment, surveying, and well plate identification of groundwater and landfill gas monitoring wells must be implemented in accordance with the conditions in Attachment 2, Geologic, Water Quality, and Landfill Gas Monitoring Requirements.
23. Groundwater monitoring wells and surface water sampling locations must be sampled at least semi-annually in accordance with 15A NCAC 13B .0544, the approved water quality monitoring plan, and the current policies and guidelines of the Section in effect at the time of sampling. In accordance with 15A NCAC 13B .0544(d), landfill gas monitoring must be conducted quarterly, unless otherwise specified by the Section.
24. Monitoring reports of the analytical results for surface water and groundwater monitoring sampling events must be submitted to the Section within 120 days of the sample collection date. Analytical laboratory data must be submitted in electronic portable document format (pdf) and in a spreadsheet format in an Electronic Data Deliverable (EDD) Template. All monitoring reports must contain:
 - a. a potentiometric surface map for the current sampling event,
 - b. analytical laboratory reports and summary tables,
 - c. a completed Solid Waste Environment Monitoring Data Form, and
 - d. laboratory data submitted in accordance with the EDD Template.
25. A readily accessible unobstructed path must be maintained so that groundwater and landfill gas monitoring wells and surface water sampling locations are accessible using four-wheel drive vehicles.
26. Documentation of well completion, development details, repair, abandonment, and all other pertinent activities associated with each groundwater and landfill gas monitoring well must be maintained in the facility operating record. The permittee must maintain a record of all groundwater, surface water, and landfill gas monitoring events and analytical data in the operating record.
27. All forms, reports, maps, plans, and data submitted to the Section must include an electronic (pdf) copy.
28. All landfill gas monitoring events must be conducted by properly trained personnel and must include monitoring for all explosive gases, including hydrogen sulfide. Landfill gas monitoring must include interior monitoring of onsite buildings.

29. Landfill gas monitoring results must be recorded on forms provided by the Section and be maintained in the facility's operating record.

REPORTING AND RECORDKEEPING

30. Copies of this permit, the approved plans, and all records required to be maintained by the permittee must be maintained at the facility and made available to the Section upon request during normal business hours.
31. The owner or operator must maintain records of the following. Scales must be used to weigh the amount of waste received. The daily reports are to be summarized into a monthly report for use in the required annual reports.
- a. The amount of all accepted solid waste materials as (i) C&D wastes, (ii) material used as alternate periodic cover, and (iii) recyclable material.
 - b. Daily records of waste received, and origins of the loads.
32. On or before August 1 annually, the Permittee must submit an annual facility report to the Section, on forms prescribed by the Section.
- a. The reporting period shall be for the previous year beginning July 1 and ending June 30.
 - b. The annual facility report must list the amount of waste received in tons and be compiled:
 - i) On a monthly basis.
 - ii) By county, city or transfer station of origin.
 - iii) By specific waste type.
 - iv) By disposal location within the facility.
 - v) By diversion to alternative management facilities.
 - c. A measurement of volume utilized in the landfill cells must be performed during the second quarter of the calendar year. The date and volumes, in cubic yards, must be included in the report.
 - d. The amount of waste, in tons from scale records, disposed in landfill cells from October 1, 2003 through the date of the annual volume survey must be included in the report.

- e. The tons of C&D waste recycled, recovered or diverted from disposal including a description of how and where the material was ultimately managed, as applicable, must be included in the report.
- f. The completed report must be forwarded to the Regional Environmental Senior Specialist for the facility by the date due on the prescribed annual facility report form.
- g. A copy of the completed report must be forwarded to each county manager for each county from which waste was received the facility. Documentation that a copy of the report has been forwarded to the county managers must be sent to the Regional Environmental Senior Specialist by the date due on the prescribed annual facility report form.

**PART III: MISCELLANEOUS SOLID WASTE MANAGEMENT CONDITIONS,
(SPECIFY)**

- 33. The reclamation pad operation as shown on the application drawings is not approved for construction or operation.
- 34. The wood waste/land clearing debris storage and processing operation as shown in the application text and on drawings is not approved for operation at this time.

- End of Permit Conditions -



Wake County Environmental Services Department
 Water Quality Division, Watershed Management Section
 336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602
 TEL 919 856-7400 • FAX 919 743-4772

WMCPA – WATERSHED MANAGEMENT CONSTRUCTION PLAN APPROVAL

Project Name Brownfield Road C&D Landfill (stockpile addition) **Watershed** Lower Neuse
Date Received 2/3/16 **Date Processing Initiated** 2/3/16 **Disturbed Acreage** 86.39
S&E Permit Number S#2148 **Plan Review Fee** \$2925(paid) **S&E Permit Fee** \$2846(pending)
SW Permit Number S#2148 **Plan Review Fee** N/A **SW Permit Fee** N/A

Applicant:

Name Wake Reclamation , LLC
2600 Brownfield Rd
 Address: Raleigh, NC 27610
 Phone: 919-779-3339
 Email: _____

Engineer:

Name: Smith Gardner, INC
14 N Boylan Ave
 Address: Raleigh, NC 27603
 Phone: 919-828-0577 x142
 Email: Carter@smithgardnerinc.com

Plan Date/Revision Date: 12.24.15/2.3.16

Approval Date: 2/3/16	The above-referenced erosion control and stormwater management plans have been reviewed and conditionally approved. Brownfield C&D is approved for the addition of 11.39 ac disturbance for a stockpile that is to be converted back to existing conditions, grade and land cover, upon abandonment of stockpile. Conversion back to existing conditions exempts requirement for stormwater for this additional disturbance. The permit acreage will be added to an existing 75 ac with a new site total of 86.39 ac. [Merged from Permit S#998008]
--	---

Approved Site Data:

Permitted Imp (SF)= TBD Road ISA (SF)= TBD Lots ISA (SF)= TBD Other ISA (SF)= TBD
 Nitrogen Pre (lb/ac/yr)= TBD Nitrogen Post (lb/ac/yr)= TBD Nitrogen Post BMP (lb/ac/yr)= TBD Nitrogen Offset (lb)= TBD

Conditions of Approval

Items marked with an "X" were noted as conditions of the Stormwater and Sediment and Erosion Control Plan approval. Unless otherwise noted, all references shown in brackets are for the *Wake County Unified Development Ordinance (UDO)*, adopted 04/17/06.

<input checked="" type="checkbox"/>	1.	A mandatory preconstruction meeting is required between the owner, contractor, and Wake County prior to issuance of the Stormwater and Land Disturbance Permits. Please call to schedule this meeting at your convenience. The Stormwater and Land Disturbance permit fees are due at that time.
<input checked="" type="checkbox"/>	2.	Grading, other than for installation of soil erosion and sedimentation control measures, is prohibited prior to the issuance of a Certificate of Compliance. [10-30-7(D)]
<input checked="" type="checkbox"/>	3.	Contractor shall follow plans strictly and maintain contact with Wake County prior to making any field modifications to erosion and sediment control devices. No devices shall be removed without prior approval from Wake County.



Wake County Environmental Services Department
 Water Quality Division, Watershed Management Section
 336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602
 TEL 919 856-7400 • FAX 919 743-4772

WMCPA – WATERSHED MANAGEMENT CONSTRUCTION PLAN APPROVAL

<input checked="" type="checkbox"/>	4.	Wake County's sedimentation pollution control program is <u>performance oriented</u> , requiring protection of the natural resources and adjoining properties. If at any time during the project it is determined that the Erosion and Sedimentation Control Plan is inadequate to meet the requirements of the Erosion and Sedimentation Control Ordinance of Wake County, this office may require revisions in the plan and its implementation to ensure compliance with the Ordinance.
<input checked="" type="checkbox"/>	5.	All projects that have approved plans for an E&SC permit on or after Aug. 3, 2011 are covered by the NPDES Construction Stormwater General Permit, NCG 010000. In addition, effective October 1, 2010, persons conducting land-disturbing activities larger than one acre must inspect their project after each phase of the project, and document the inspection in writing. A packet with information on the NPDES General Permit and the Self-inspection Program will be provided at the preconstruction meeting. Permits and inspection reports shall be maintained on site.
<input type="checkbox"/>	6.	SUBDIVISIONS ONLY Builders are required to obtain grading permits for cumulative disturbance over one acre (including non-contiguous lots).
Stormwater COAs - All conditions of approval must be completed and approved by Wake County prior to final plat approval or signoff of the Certificate of Occupancy (C.O.) for future building permits. Items required prior to final plat or building permit approval are checked and listed below.		
<input type="checkbox"/>	7.	As-Built Plans – Upon completion of required improvements, an as-built plan of required stormwater improvements must be submitted (must indicate that stormwater improvements were constructed in accordance with the approved plan). [9-31-2]
<input type="checkbox"/>	8.	Maintenance Plan
	<input type="checkbox"/>	a. The developer must record and reference on the record plat, a maintenance plan providing instruction about annual maintenance tasks and associated costs for at least a 20-year period. [9-32-3(A)]
	<input type="checkbox"/>	b. It will be the responsibility of the property owners association or lot owner to update the maintenance plan at least every 10 years. [9-32-3(B)]
<input type="checkbox"/>	9.	Maintenance Agreement
	<input type="checkbox"/>	a. The developer must record and reference on the record plat, a maintenance agreement or restrictive covenant that sets for the property owners association's or lot owner's continuing responsibilities for maintenance, including how cost will be apportioned among lot owners served. [9-32-4(A)]
	<input type="checkbox"/>	b. The maintenance agreement must provide that the association and its individual members are jointly and severable liable for maintenance. [9-32-4(B)]
<input type="checkbox"/>	10.	All maintenance documents required must be submitted prior to record plat approval and must be referenced on the record plat. For developments not requiring record plats, documentation must be submitted prior to building permit issuance. [9-32-6]
<input type="checkbox"/>	11.	Performance Guarantee – The county may not approve a record plat or issue a building permit until stormwater improvements required of the developer have been completed or a performance guarantee has been provided. [9-31-1]
Applicable Regulations		
<input type="checkbox"/>	12.	9-32-2 Parties Responsible for Maintenance of Improvements
	<input type="checkbox"/>	a. The developer must maintain stormwater improvements until accepted by a property owners association or lot owner. The developer must disclose which party will be responsible for continued maintenance on the record plat.
	<input type="checkbox"/>	b. Before improvements are accepted for maintenance by the property owners association or lot owner, the developer must certify to the property owners association or lot owner and the county that improvements are complete and functioning as designed.



Wake County Environmental Services Department
 Water Quality Division, Watershed Management Section
 336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602
 TEL 919 856-7400 • FAX 919 743-4772

WMCPA – WATERSHED MANAGEMENT CONSTRUCTION PLAN APPROVAL

<input checked="" type="checkbox"/>	13.	<i>Part 5 – Enforcement and Penalties</i>
<input checked="" type="checkbox"/>	a.	Failure to complete required improvements or failure to maintain improvements as required by the approved plan are violations and subject to a fine of up to \$1,000 per day. [9-50]
<input checked="" type="checkbox"/>	b.	Inspection of Stormwater Improvements – Wake County agents have the right to inspect sites to determine whether stormwater improvements are being installed and maintained in compliance with the ordinance. [9-51]
<input type="checkbox"/>	14.	10-30-6 Validity of Plan, Lapse of Approval - An approved erosion and sedimentation control plan is valid for 2 calendar years from the date of approval. If a land disturbance permit has not been obtained within the 2-year period, the erosion and sedimentation control plan approval becomes null and void.
<input checked="" type="checkbox"/>	15.	10-20-11 Standards for Landfills
<input checked="" type="checkbox"/>	a.	Land disturbance permits for landfills are valid for five (5) calendar years. If no construction activity has begun within 2-years, the land disturbance permit becomes null and void.
<input checked="" type="checkbox"/>	b.	A valid land disturbance permit is required for the duration of the —active life of the landfill or phased permitted portion thereof until completion of closure activities.
<input checked="" type="checkbox"/>	c.	Land disturbance permits for landfills may be renewed in 5-year increments.
<input checked="" type="checkbox"/>	d.	Land Disturbance permits for landfills may be automatically renewed upon the certification of Financially Responsible Party and upon concurrence by County staff that there are no major modifications to the approved plan and that the project adheres to all current applicable standards.
<input checked="" type="checkbox"/>	e.	Automatic permit renewals will not be subject to plan review and land disturbance permit fees.
<input checked="" type="checkbox"/>	f.	No plan shall be approved unless it complies with all applicable state and Wake County erosion and sedimentation control and stormwater management requirements. Approval assumes the applicant's compliance with federal and state water quality and landfill laws, regulations and rules in addition to Wake County's regulations.
<input checked="" type="checkbox"/>	g.	Adequate erosion and sediment control measures consisting of vegetative cover, materials, structures or devices must be utilized to prevent sediment from leaving the landfill facility.
<input checked="" type="checkbox"/>	h.	Whenever the County determines that significant erosion and sedimentation is occurring as a result of land-disturbing activity, despite application and maintenance of protective practices, the party conducting the land-disturbing activity will be required to and shall take additional protective action.
<input checked="" type="checkbox"/>	i.	Adequate erosion and sediment control measures consisting of vegetative cover, materials, structures or devices must be utilized to prevent excessive on-site erosion of the landfill facility or portion thereof.
<input checked="" type="checkbox"/>	j.	Erosion and sedimentation control measures, structures and devices for landfills must be designed, constructed and maintained to manage the calculated maximum peak rate of runoff generated by the 24-hour, 25-year storm event. Runoff rates must be calculated using the procedures in the USDA, Soil Conservation Service's National Engineering Field manual for Conservation Practices, or the North Carolina Department of Environment and Natural Resources Erosion and Sediment Control Planning and Design Manual or other calculation procedures acceptable to Wake County.
<input checked="" type="checkbox"/>	k.	Stormwater plan review for landfills shall be included in the plan review for erosion and sedimentation control and stormwater improvements shall be permitted under the land disturbance permit upon payment of applicable land disturbances review and permit fees.
<input checked="" type="checkbox"/>	l.	Landfills shall conform to the requirements of the Sedimentation and Pollution Control Law (15A NCAC 04) and any required NPDES permits.
<input checked="" type="checkbox"/>	m.	Phased permits may be closed upon compliance with Wake County's certificate of completion requirements.
<input checked="" type="checkbox"/>	16.	10-30-8 Actions Required Prior to Land Disturbance



Wake County Environmental Services Department
 Water Quality Division, Watershed Management Section
 336 Fayetteville St. • P.O. Box 550 • Raleigh, NC 27602
 TEL 919 856-7400 • FAX 919 743-4772

WMCPA – WATERSHED MANAGEMENT CONSTRUCTION PLAN APPROVAL

<input checked="" type="checkbox"/>	a.	S&EC plan approval and land disturbance permit issued must be prominently displayed until all construction is complete, all permanent sedimentation and erosion control measures are installed and the site has been stabilized. A copy of the approved plan must be kept on file at the job site.
<input checked="" type="checkbox"/>	b.	No person shall initiate a land-disturbing activity until notifying Wake County of the date that the land-disturbing activity will begin.
<input checked="" type="checkbox"/>	17.	10-31-1 Authority
<input checked="" type="checkbox"/>	a.	County officials may enter any property, public or private, at reasonable times for the purpose of investigating and inspecting the sites of any land-disturbing activity. No person shall refuse entry or access to any authorized representative or agent for the County who requests entry for purposes of inspections, and presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such representatives while in the process of carrying out their official duties.
<input checked="" type="checkbox"/>	b.	Agents and officials of the County will periodically inspect land-disturbing activities to ensure compliance with the North Carolina Sedimentation Pollution Control Act, this article, or rules or orders adopted or issued pursuant to this article, and to determine whether the measures required in the erosion and sedimentation control plan are effective in controlling erosion and sedimentation resulting from land-disturbing activity.
<input checked="" type="checkbox"/>	c.	Any land-disturbing activity will be the responsibility of the person(s) conducting the land disturbing activity, including the property owners. Failure to prevent off site sedimentation will be deemed a violation of the erosion and sedimentation control regulations of this article.

Wake County Watershed Management Section is not responsible for subject approvals of other Local, State or Federal Agencies. The subject approvals are (but not limited to) Federal Emergency Management Area Flood regulations/requirements, Division of Water Quality under stormwater or other water quality regulations/requirements, U.S. Army Corps of Engineers under Article 404/401 (Wetlands/Streams) jurisdiction/requirements, and/or any Federal, State, County and Local municipal regulations or permit requirements. The approval issued in this letter cannot supersede any other required permit or approval.

**Watershed Manager
 Name & Signature:**


 Shawn Springer, PE

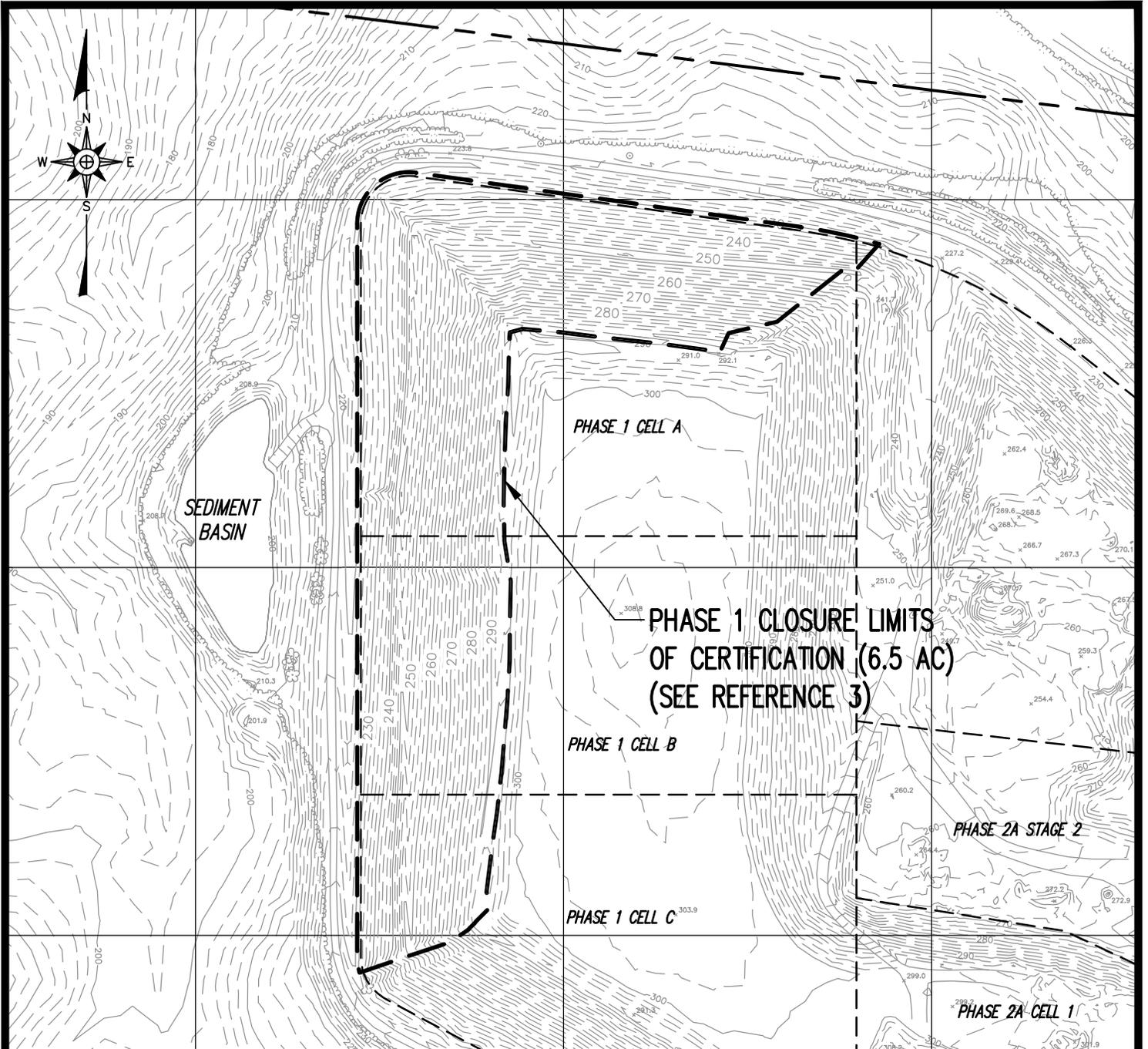
Contact Info:

shawn.springer@wakegov.com
 919-369-6135

Figures

**Construction Quality Assurance Report
Brownfield Road C&D Landfill Closure Event No. 1
Raleigh, North Carolina**

This page intentionally left blank.



REFERENCE:

1. FACILITY PROPERTY LINE FROM A MAP ENTITLED "MATERIAL RECOVERY, LLC. & MAGARET TALTON" PREPARED BY TRC TRIANGLE, DATED 7/16/03, RECORDED IN BOOK OF MAPS 2003, PAGE 1508, WAKE COUNTY REGISTER OF DEEDS.
2. EXISTING TOPOGRAPHY FROM AERIAL SURVEY DATED JANUARY 2, 2016 BY GEODATA CORPORATION, ZEBULON, NC. SITE DATUM SURVEY CONTROL.
3. PHASE 1 CLOSURE TOPOGRAPHY FROM FIELD SURVEY DATED JUNE 30, 2016 BY SURVEYING SOLUTIONS, P.C., YOUNGSVILLE, NC.



PREPARED FOR:

**WAKE RECLAMATION, LLC
BROWNFIELD ROAD C&D LANDFILL
PHASE 1 CLOSURE
LIMITS OF CERTIFICATION**

PREPARED BY:

NC LIC. NO. C-0828 [ENGINEERING]

SMITH+GARDNER

14 N. Boylan Avenue, Raleigh NC 27603 | 919.828.0577

DRAWN:

C.T.J.

APPROVED:

SAS
S.A.S.

SCALE:

AS SHOWN

DATE:

Jul 2016

PROJECT NO.:

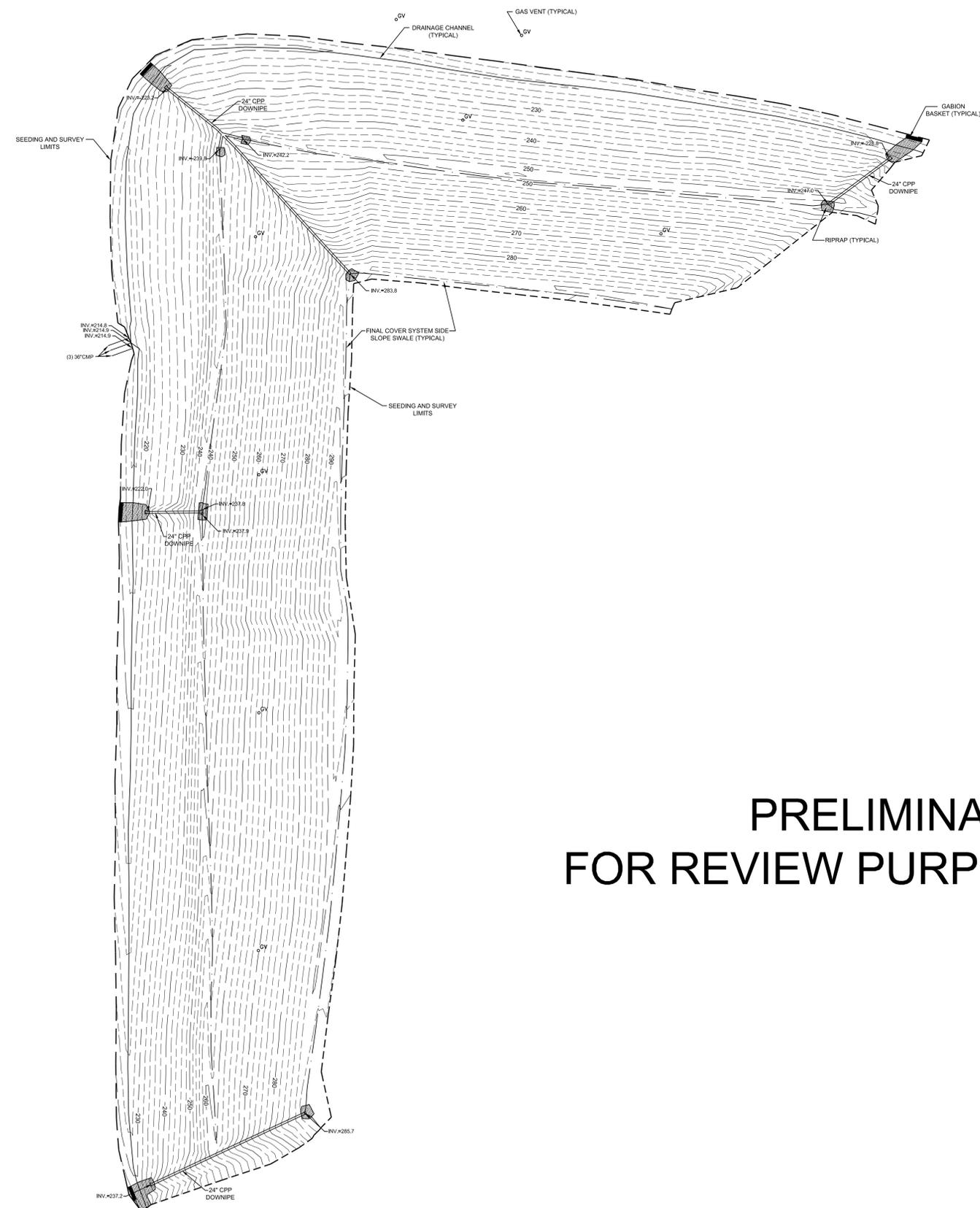
BROWNFIELD 16-1

FIGURE NO.:

1

FILE NAME:

WI-A1191



PRELIMINARY
FOR REVIEW PURPOSES ONLY



SURVEY OF
BROWNFIELD ROAD C&D LANDFILL
PHASE 1 CLOSURE

COUNTY: WAKE	DATE	REVISION(S)
STATE: NC		
SCALE: 1"=60'		
SURVEY DATE: JUNE 30, 2016		
PROJECT: 160005		
DWG: 2016 BROWNFIELD FINAL COVER SURVEY		



Appendix B

Photographic Log

**Construction Quality Assurance Report
Brownfield Road C&D Landfill Phase 2A Stage 2
Raleigh, North Carolina**

This page intentionally left blank.



PHOTOGRAPHIC LOG

Client Name: Wake Reclamation, LLC	Site Location: Raleigh, North Carolina	Project No. BROWNFIELD-16-1
--	--	---------------------------------------

Photo No. 1	Date: 6/14/16
-----------------------	-------------------------

Direction Photo Taken:
Northwest

Description:
Placement of final cover and compaction of side slope swale.



Photo No. 2	Date: 6/14/16
-----------------------	-------------------------

Direction Photo Taken:
West

Description:
TRM installed in side slope swale.





PHOTOGRAPHIC LOG

Client Name: Wake Reclamation, LLC	Site Location: Raleigh, North Carolina	Project No. BROWNFIELD-16-1
--	--	---------------------------------------

Photo No. 3	Date: 6/14/16
Direction Photo Taken: Southeast	
Description: Grading of final cover.	



Photo No. 4	Date: 6/17/16
Direction Photo Taken: West	
Description: Down pipe inlet protection	





PHOTOGRAPHIC LOG

Client Name: Wake Reclamation, LLC	Site Location: Raleigh, North Carolina	Project No. BROWNFIELD-16-1
--	--	---------------------------------------

Photo No. 5	Date: 7/12/16	
Direction Photo Taken: East		
Description: Down pipe outlet protection.		

Photo No. 6	Date: 7/12/16	
Direction Photo Taken: South		
Description: Perimeter ditch and down pipe outlet protection.		



PHOTOGRAPHIC LOG

Client Name: Wake Reclamation, LLC		Site Location: Raleigh, North Carolina	Project No. BROWNFIELD-16-1
Photo No. 7	Date: 6/7/16		
Direction Photo Taken: South			
Description: Established vegetation in perimeter channel with matting and check dams along access road.			

Photo No. 8	Date: 6/7/16		
Direction Photo Taken: West			
Description: Phase 2A Stage 2 Subgrade			

Appendix C

Meeting Minutes

**Construction Quality Assurance Report
Brownfield Road C&D Landfill Closure Event No. 1
Raleigh, North Carolina**

This page intentionally left blank.

MEMORANDUM

Date:	February 15, 2016
To:	Distribution and Meeting Attendees
From:	Carter T. Shore, E.I. Smith Gardner, Inc. 
RE:	Brownfield Road C&D Landfill Phase 2A – Stage 2 Construction & Closure Event No. 1 Pre-Construction Meeting Summary

Attendees: See attached list and contact information.

Meeting Summary:

A pre-construction meeting was held Tuesday, January 16th at the scalehouse to discuss the plans for the construction of Phase 2A – Stage 2 and Closure Event No. 1 of the Brownfield Road C&D Landfill. The meeting began at 2:00 p.m. and the following items were discussed:

A. Tentative Construction Schedule/Milestones

The Notice to Proceed (NTP) was discussed and will be issued once bonds have been received from Baxter Johnson. Work will generally occur Monday through Saturday (7 a.m. to 7 p.m. as daylight allows). Initial plans are to focus on construction of sediment basin and stockpile area to allow for cell excavation. Closure work will begin in spring to increase success of revegetation. Work sequencing will be discussed and updated at regular construction meetings.

B. Designation of Responsible Personnel

Wake Reclamation, LLC (Owner)

David Pepper, Director of Capital Projects

Don Plessinger, Site Manager

Richard Call, Jr., Site Supervisor

S+G (Design and CQA Engineer)

Stacey Smith, P.E., Senior Engineer

Carter Shore, E.I., Staff Engineer

Geotechnics (Soil Testing)

Pre-Construction Meeting Summary – January 19, 2016

February 15, 2016

Page 2 of 3

Baxter Johnson Contracting, Inc. (Contractor)

Brady Johnson, Project Manager

Brad Murray, Site Superintendent

Wake County - Water Quality

Shawn Springer, P.E., Site Inspector

C. Field Decisions and Change Orders

- Conflicts between drawings and field conditions shall be brought to the attention of S+G ASAP for resolution.

D. Distribution of Contract Documents

S+G will provide copies as requested by contractor and site.

E. Submittals

- Submittals will be reviewed by Engineer and issued back to Contractor as quickly as possible.

Electronic submittals will be used.

F. Record Documents

- S+G and Geotechnics will perform and document all quality assurance testing.
- S+G will maintain all test and sample information for preparation of the certification report.

G. Use of Site and Owner's Requirements

- Site access will be through the existing entrances and as coordinated with Site (Mr. Call).
- All personnel were reminded that the job is at an active landfill. Mr. Plessinger has informed site personnel that Baxter Johnson equipment has right-of-way. Baxter Johnson discussed use of flagmen to control traffic flow.

H. Safety and First Aid Procedures

Safety was discussed. Baxter Johnson has an internal safety program that is used.

Pre-Construction Meeting Summary – January 19, 2016

February 15, 2016

Page 3 of 3

I. Security Procedures

- Baxter Johnson is responsible for security when working after landfill hours and the gate must be locked.
- Baxter Johnson is responsible for securing equipment on-site.

J. Pay Requests

- Pay requests should be submitted at/near the end of each month to S+G (Attn: Carter Shore).

S+G will forward approved pay requests to Mr. Pepper.

K. Other Items

Land disturbance and erosion control permits are still in the process of being reviewed by Mr. Springer. S+G will work on acquiring approval and the permits as quickly as possible so as to not hold up construction activities. A pre-construction meeting with a County representative present will need to take place.

L. Next Meeting

Regular project meetings will be held monthly during active construction. It was agreed that regular meetings would be held each month at the scalehouse. The initial meeting will be February 16th at 8 a.m.

Attachment: Attendee List
 Baxter Johnson Schedule

cc: Distribution:
 David Pepper, Waste Industries USA, Inc.
 Don Plessinger, Waste Industries USA, Inc.
 Richard Call, Jr., Waste Industries USA, Inc.
 Brady Johnson, Baxter Johnson
 File

**PRE-CONSTRUCTION MEETING
ATTENDEES**

NAME	COMPANY/AGENCY	PHONE	EMAIL
Stacey Smith, P.E.	Smith Gardner, Inc.	(919) 828-0577 x127 (Office) (919) 815-0803 (Cell)	stacey@smithgardnerinc.com
Carter Shore	Smith Gardner, Inc.	(919) 828-0577 x142 (Office) (919) 500-1686 (Cell)	carter@smithgardnerinc.com
Brady Johnson	BSC	919-624-0110	bjohnson@baxterjohnson.com
Bred murray	BSC	919 669-5387	b murray @ baxter johnson . com
Richard Call	W I	(919) 669-6729	RichardCall@wasteindustries.com
David Pepper	W I	(919) 877-2235	david-pepper@wasteindustries.com
Dan Plessinger	W.I.	919-921-1434	donald.plessinger@wasteindustries.com

ID	Name	Duration	Start	Finish	Performance	Resource Hours
1	Call Station Control	8 days	1/18/18 8:00 AM	1/27/18 8:00 PM	1	
2	Call Station Basin	10 days	1/25/18 8:00 AM	2/07/18 8:00 PM	2	
3	Call Site Prep	20 days	2/01/18 8:00 AM	3/01/18 8:00 PM	3	
4	Call Installation	30 days	3/01/18 8:00 AM	4/01/18 8:00 PM	4	
5	Call Parameter Pd	8 days	3/28/18 8:00 AM	4/10/18 8:00 PM	4	
6	Call Parameter Pd	10 days	4/04/18 8:00 AM	4/17/18 8:00 PM	4	
7	Cap: Pengalihan	8 days	4/11/18 8:00 AM	4/23/18 8:00 PM	7	
8	Cap: Site Prep	30 days	4/11/18 8:00 AM	5/11/18 8:00 PM	8	
9	Cap: Vegetative Soil Layer	30 days	4/25/18 8:00 AM	5/25/18 8:00 PM	8	
10	Cap: Area Slope Gravel	18 days	5/07/18 8:00 AM	5/25/18 8:00 PM	10	
11	Cap: Down Form	8 days	5/07/18 8:00 AM	5/25/18 8:00 PM	10	
12	Cap: Dan Vene	8 days	5/07/18 8:00 AM	5/25/18 8:00 PM	10	
13	Cap: Tembakulan	8 days	5/07/18 8:00 AM	5/25/18 8:00 PM	12	

