

PERMIT APPLICATION FOR CONTINUED OPERATION

Greene County Construction and Demolition Landfill Facility

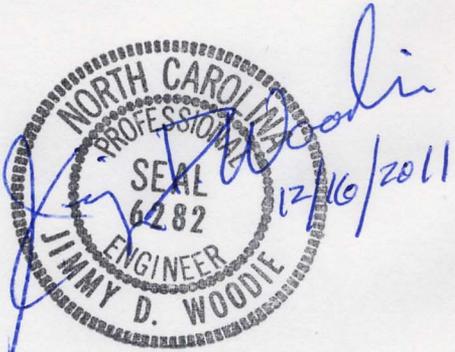
Permit NO.: 4002-CDLF-1997

Site Location: 105 Landfill Road
Walstonburg, NC 27888

Applicant: County of Greene

Applicant's Address: 229 Kingold Blvd., Suite D
Snow Hill, NC 28580

MESCO Project Number
G07061



Permit No.	Date	Document ID No.
40-02	April 18, 2012	16384

Revised November 2011
Revised October 2011
Revised March 2010
Revised September 2009
June 2008

**DOCUMENT APPROVED
FOR ISSUANCE OF PTO - PHASES 1 & 2**
Division of Waste Management
Solid Waste Section
Received Dated: **June 2008** and revised through **November 2011**
Date: April 18, 2012 By: Ming-Tai Chao

Submitted By:

Municipal Engineering Services Company, P.A.

Garner	Boone	Morehead City
P.O. Box 97	P.O. Box 349	P.O. Box 828
Garner, NC 27529	Boone, NC 28607	Morehead City, NC 28557
(919) 772-5393	(828) 262-1767	(252) 726-9481

CIVIL/SANITARY/ENVIRONMENTAL ENGINEERS

SOLID WASTE MANAGEMENT

Municipal Services



Engineering Company, P.A.

SITE PLANNING/SUBDIVISIONS

SUBSURFACE UTILITY ENGINEERING (SUE)

December 16, 2011

Ming-Tai Chao, P.E.
Environmental Engineer II
NCDENR – Solid Waste Section
401 Oberlin Rd.
Raleigh, NC 27605

Fac/Perm/Co ID #	Date	Doc ID#
40-02 Ming	12 / 20 / 2011	DIN 15793

Re: Application for Permit to Continue Operation
Greene County C & D Landfill, Permit No. 40-02-CDLF-1997

Dear Mr. Chao:

In response to your November 4, 2011 letter, we submit the following:

Operation Plan

Response to NCDENR Comment Numbers 1:

The text in Section 1.1 has been revised as requested.

Response to NCDENR Comment Number 2:

The text in Section 1.2(1)(h)(xiv) has been revised as requested.

Response to NCDENR Comment Number 3 (i.-iv):

The text has been revised to address these items as requested.

Response to NCDENR Comment Number 4:

Drawing Number F1(sheet 3 of 7) and the text has been revised as requested.

Response to NCDENR Comment Number 5:

We have revised the text in Section 1.3 as requested.

Response to NCDENR Comment Number 6(i.-vi.):

The text has been revised to address the items as requested.

Facility Plan

Response to NCDENR Comment Number 7:

The typographical error has been revised as requested.



Response to NCDENR Comment Number 8:

The text has been revised as requested.

Response to NCDENR Comment Number 9:

The text has been revised as requested.

Response to NCDENR Comment Number 10:

Text has been added as requested.

Response to NCDENR Comment Number 11:

We have added the tonnage as requested.

Drawings**Response to NCDENR Comment Number 12:**

Drawing Number F1(sheet 3 of 7) has been revised as requested.

Response to NCDENR Comment Number 13:

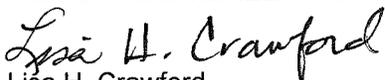
Drawing Number CL3 (sheet 5 of 5) has been revised as requested.

Response to DWM Comment regarding ACM and CAP plans

The Public meeting records have been enclosed as requested. The CAP plan request will be addressed under separate cover.

Please find enclosed 1 hard copy of the revised drawings and text and 1 electronic copy. If you have any questions or need additional information please don't hesitate to give us a call.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., PA


Lisa H. Crawford
Designer

LHC:lhc
Enclosures

cc: David Jones, Public Works Director

FOR OFFICE USE ONLY

QUAD. NO. _____ SERIAL NO. _____

Lat. _____ Long. _____ RO _____

Minor Basin _____

Basin Code _____

Header Ent. _____ GW-1 Ent. _____

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: GAI Consultants

DRILLER REGISTRATION NUMBER: 446

STATE WELL CONSTRUCTION PERMIT NUMBER: N/A

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Wootens Crossroads County: Greene

SR 1239

(Road, Community, or Subdivision and Lot No.)

2. OWNER Greene County Attn: Jessie Tyndall

ADDRESS 229 Kingold Blvd

(Street or Route No.)

Snow Hill NC 28580

City or Town State Zip Code

3. DATE DRILLED 8-26-94 USE OF WELL Monitoring

4. TOTAL DEPTH 26.0

5. CUTTINGS COLLECTED YES NO

6. DOES WELL REPLACE EXISTING WELL? YES NO

7. STATIC WATER LEVEL Below Top of Casing: 19.74 FT.
 (Use "-" if Above Top of Casing)

8. TOP OF CASING IS 2.74 FT. Above Land Surface*

* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

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

10. WATER ZONES (depth): _____

11. CHLORINATION: Type N/A Amount _____

12. CASING:

From	Depth	To	Diameter	Wall Thickness or Weight/Ft.	Material
<u>+2.74</u>		<u>9.1</u>	<u>2"</u>	<u>Sch 40</u>	<u>PVC</u>
From _____	To _____	Ft. _____	_____	_____	_____
From _____	To _____	Ft. _____	_____	_____	_____

13. GROUT:

From	Depth	To	Material	Method
<u>0</u>		<u>6.3</u>	<u>Cement</u>	<u>Grout</u>
<u>6.3</u>		<u>7.5</u>	<u>Bentonite</u>	<u>Pellet</u>

14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material
<u>9.1</u>		<u>24.1</u>	<u>2"</u>	<u>.010</u>	<u>PVC</u>
From _____	To _____	Ft. _____	_____	_____	_____
From _____	To _____	Ft. _____	_____	_____	_____

15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material
<u>7.5</u>		<u>26.0</u>	_____	<u>Silica</u>
From _____	To _____	Ft. _____	_____	_____

16. REMARKS: Monitoring Well 4 17.15' - water level after 24 hours

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

Wendell W. Parker
 SIGNATURE OF CONTRACTOR OR AGENT

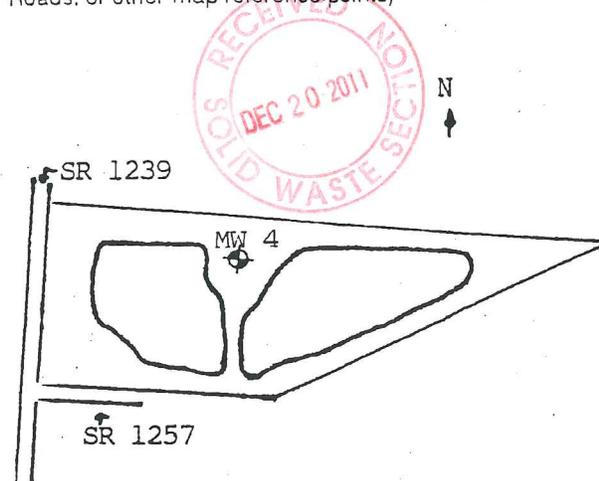
10-6-94
 DATE

DEPTH		DRILLING LOG
From	To	Formation Description
<u>3.5</u>	<u>5.5</u>	<u>Red orange mottled gray clay few f sand</u>
<u>8.5</u>	<u>10.5</u>	<u>Orange mot gr silty clay</u>
<u>13.5</u>	<u>15.5</u>	<u>Red sandy clay down thin seams of f sand</u>
<u>18.5</u>	<u>20.5</u>	<u>Red sandy clay down rd sand w/thin seams of clay</u>
<u>23.5</u>	<u>25.5</u>	<u>Orange gr silty clay w/few f sand down grades lt gr clay</u>
<u>26.0</u>		<u>Bottom of boring</u>

If additional space is needed use back of form

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)



FOR OFFICE USE ONLY		
QUAD. NO. _____	SERIAL NO. _____	
Lat. _____	Long. _____	RO _____
Minor Basin _____		
Basin Code _____		
Header Ent _____		GW-1 Ent _____

WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: GAI Consultants

DRILLER REGISTRATION NUMBER: 446

STATE WELL CONSTRUCTION PERMIT NUMBER: N/A

1. WELL LOCATION: (Show sketch of the location below)
 Nearest Town: Wootens Crossroads County: Greene

SR 1239

(Road, Community, or Subdivision and Lot No.)

2. OWNER Greene County Attn: Jessie Tyndall
 ADDRESS 229 Kingold Blvd
 (Street or Route No.)
Snow Hill NC 28580
 City or Town State Zip Code

3. DATE DRILLED 8-28-94 USE OF WELL Monitoring

4. TOTAL DEPTH 30.4

5. CUTTINGS COLLECTED YES NO

6. DOES WELL REPLACE EXISTING WELL? YES NO

7. STATIC WATER LEVEL Below Top of Casing: 19.1 FT.
 (Use "+" if Above Top of Casing)

8. TOP OF CASING IS 2.6 FT. Above Land Surface*

*Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

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

10. WATER ZONES (depth): _____

11. CHLORINATION: Type N/A Amount _____

12. CASING:

From	Depth	To	Diameter	Wall Thickness or Weight/Ft.	Material
<u>+2.6</u>	<u>14</u>	<u>Ft.</u>	<u>2"</u>	<u>Sch 40</u>	<u>PVC</u>
From _____	To _____	Ft.	_____	_____	_____
From _____	To _____	Ft.	_____	_____	_____

13. GROUT:

From	Depth	To	Material	Method
<u>0</u>	<u>11.5</u>	<u>Ft.</u>	<u>Cement</u>	<u>Grout</u>
<u>11.5</u>	<u>12.8</u>	<u>Ft.</u>	<u>Bentonite</u>	<u>Pellets</u>

14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material
<u>14</u>	<u>29.0</u>	<u>Ft.</u>	<u>2</u>	<u>.010</u>	<u>PVC</u>
From _____	To _____	Ft.	_____	_____	_____
From _____	To _____	Ft.	_____	_____	_____

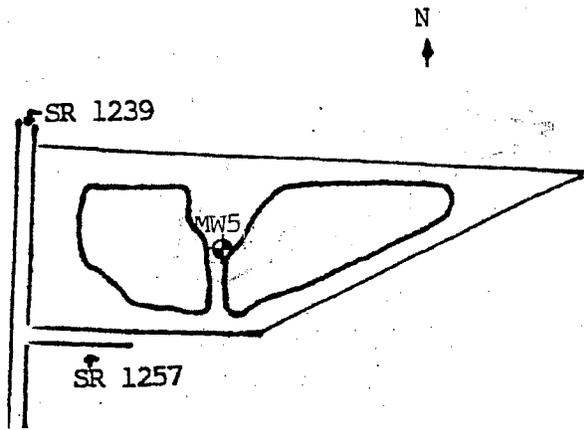
15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material
<u>12.8</u>	<u>30.4</u>	<u>Ft.</u>	_____	<u>Silica</u>
From _____	To _____	Ft.	_____	_____

16. REMARKS: Monitoring Well 5 16.4' - water level after 24 hours

DEPTH		DRILLING LOG
From	To	Formation Description
<u>0</u>	<u>0.5</u>	<u>Tan silty clay</u>
<u>3.5</u>	<u>5.5</u>	<u>Faintly orange mot gr silty clay down abunda rd mot silty clay</u>
<u>8.5</u>	<u>10.5</u>	<u>Med gray f sandy clay</u>
<u>13.5</u>	<u>15.5</u>	<u>Red mot gr f sandy cla down abundant rd mot gr sandy clay</u>
<u>18.5</u>	<u>20.5</u>	<u>Red mot sandy clay down red sand</u>
<u>23.5</u>	<u>25.5</u>	<u>Orange sandy clay grades or sandy clay</u>
<u>28.5</u>	<u>30.4</u>	<u>Orange clayey sand down seams clay & clean sand</u>

LOCATION SKETCH
 (Show direction and distance from at least two State Roads, or other map reference points)



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

Wendell W. Park 8-28-94
 SIGNATURE OF CONTRACTOR OR AGENT DATE
 Submit original to Division of Environmental Management and copy to well owner

**Minutes of February 29, 2008
Greene County, North Carolina
Assessment of Corrective Measures**

Meeting called to order at 11:00 am

The following were present

- Ethan Caldwell – Municipal Engineering Services
- Wayne Sullivan – Municipal Engineering Services
- David Jones – Greene County
- Don Davenport – Greene County

Ethan Caldwell summarized the findings of the Assessment of Corrective Measures

- Low level has been detected in one monitoring well.
- Contamination has not travel off site.
- Municipal water is available to the surrounding area.
- The recent identification of the contamination can be attributed to lowering of the PQL's.
- Modeling indicates contamination will not migrate off site.
- The most cost effective remediation option is natural attenuation.

Final selection of remedy will be determined based on implementation schedule, easy of implementation, and financial responsibility. A signed proclamation adopting the remedy will be prepared upon determination of remedy



County of Greene
State of North Carolina



Publisher's Affidavit

I, Jimmy Lewis, Circulation Manager of The Standard Laconic, a newspaper published in Snow Hill, County of Greene, North Carolina, do hereby certify that the notice in the action entitled:

Public Meeting Notice: Greene County

Appeared in The Standard Laconic for 1 consecutive week(s) beginning 1/23/08 and ending 1/23/08.

A copy of the notice is attached.
This the 11th day of September, 2009.



Jimmy Lewis
Circulation Manager of The Standard Laconic

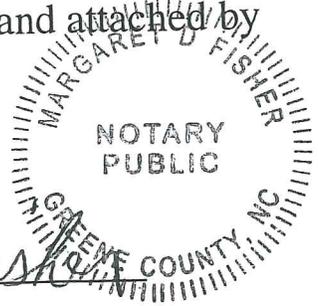
I, Margaret D. Fisher, a Notary Public, in and for the County and State aforementioned, do hereby certify the execution of the foregoing instrument for the purpose therein expressed.

In Witness Whereof, I have hereunto set my hand and attached by notarial seal, this the 11th day of Sept. 2009.

My Commission Expires

4 Nov. 2012

Margaret D. Fisher
Notary Public



2008 at 5:00 p.m.

Nursing Home/Adult Home Advisory Committee - 3 Positions



discussion will be workforce training and education, regional benchmarks and profile, legislative issues that affect the area and a regional progress report. The event will take place on Jan. 29 at 9 a.m. to 11

MS meeting: A general info meeting on multiple will be held at Ayd Will Baptist Church 5 at 6:30 p.m. The is 611 E. 3rd St. will be provided. Th speaker is Dr. Bryan of East Carolina Net For more informati Scott at 531-7185, Ji 524-5431 or the N MS Society, Easter Chapter, at (800) 4867.

PUBLIC MEETING NOTICE

In compliance with North Carolina Solid Waste Management Rule § .1635 (d) Greene County will hold a public meeting to discuss the results of the Assessment of Corrective Measures (ACM) completed for the Greene County Landfill. This meeting will take place on Friday, the 29th of February at 11:00 a.m. The public meeting will be held at the County Commissioner Meeting Room located at Greene County Office Complex, 229 Kingold Blvd. in Snow Hill, North Carolina. This meeting will be used as an open forum to inform and discuss any concerns associated with the proposed remediation/corrective measures at the Greene County Landfill. All interested parties should attend. The ACM report is available for review at the County Manager's office between the hours of 8:00 a.m. - 5:00 p.m. Monday through Friday from January 22, 2007 through February 29, 2007 at 229 Kingold Blvd., Suite D in Snow Hill, North Carolina.



Mended Hear
Mended Hearts will Feb. 7 at 7:30 p.m. Monroe AHEC Confe Center, 2000 Venture Drive, near Pitt C Memorial Hospital. program topic will "Heart Healthy Exer For Persons Cardiovascular Dise The speakers will be

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Snow Hill, Hookerton & Walstonburg

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Get he

Beginning Feb. 1, Gre County Health Dep ment will offer Freec From Smoking, an 8-s sion cessation clinic spored by the Americ Lung Association. Freedom From Smo ing has been the leadi adult smoking cessati

Make your

After scrounging arou the kitchen for one last ho day goodie, you find a sing sugar cookie hiding in th bottom tin. You grab it an head toward the mountain c decorations that need to b packed away until next yea Several hours later, the las box has been shoved into the attic or garage.

You see that all the gifts have been put away and ev- erything appears to be back to normal, finally. And then...



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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

Solid Waste Section

November 4, 2011

Mr. David Jones, Director
Greene County Public Works
P.O. Box 543
Snow Hill, North Carolina 28580

Re: Additional Comments on Permit Application for Continued Operation (Application)
Greene County Construction and Demolition Debris Landfill (C&DLF)
Greene County, North Carolina
Permit No. 40-02, Document ID No. (Doc ID) 15527

Dear Mr. Jones:

On October 17, 2011, the Division of Waste Management (DWM), Solid Waste Section received the letter dated October 14, 2011 and the revised portions of the Application (Doc ID 15496), submitted by Municipal Engineering Services Co., Inc. (MESCO), on behalf of Greene County, to respond the DWM's comments (Doc ID 10988) dated July 1, 2010. After conducting a review on the new submittal, I have additional comments stated below, and your responses to the following comments will expedite the review of the Application:

Operation Plan

1. [Section 1.1 –Introduction] In addition to C&DLF, please also describe the other waste management units mentioned in the Application, such as closed unlined MSWLF, used/scrap tire collection area, white goods/scrap metal area, Small Type 1 Composting Area, e-wastes collection area, etc.
2. [Section 1.2 - Paragraph 1. h.xiv. (on Page 6)] The Storm Debris Area is a permitted “temporary” storm debris storage and/or processing area which can only be operated after a natural disaster occurs in the service areas. The duration for operating this unit is six months only. This unit is not a waste disposal/ landfill unit; therefore, please add “(when it is permitted for operation)” next to the Storm Debris Area.
3. [Section 1.2 - Paragraph 1. 1. (on Page 7)] Please provide the following info of the white goods collection area, such as
 - i. The dimensions of the area or pad.
 - ii. If the scrap metal will be stored in this area, please add the scrap metal to the waste stream.

- iii. Please indicate that the recyclable is stored on the elevated pad such as concrete pad or on the ground.
 - iv. If the Freon will be removed from the white goods at the time of off-site removal, the Freon containing white goods must be separately stockpiled from no-Freon containing white goods and scrap metals. Please clarify.
4. [Section 1.2 - Paragraph 1. 1. (on Page 7)] According to the aerial photo provided by the Google Map, there are apparently two trailers located at same the area designated as “tire trailer “on Drawing No. F1/Sheet 3 of 7. Therefore, please provide the info of the used tire collection area, such as the physical features of the tire collection area, and the number of trailers and the maximum volume or weights of scrap or used tires that can be stored on site at any give day.
 5. [Section 1.3 (on Page 14)] Please add “and Appendix II” after “Appendix I” and “constituents” after “list” in the last sentence.
 6. Section 1.6 – Small Type -1 Composting Plan:
 - i. According to Rule 15A NCAC 13B .1402(f)(6), the Small Type 1 Composting facility must occupy an area less than or equal to 2 acres. Please add this requirement to the Section 1.5.
 - ii. Please add “the operation of Small Type-1 Composting Facility will abide by the requirements stated in Rules 15A NCAC 13B .1406” to this section.
 - iii. Please provide the soil testing results or soil boring data to demonstrate that vertical separation requirement stated in Rule 15A NCAC 13B .1404(a)(10)(B) is fulfilled.
 - iv. Please add “3” affront of days in item 11.
 - v. To demonstrate the operational requirement set forth in Rule 15A NCAC 13B .1406(10) will be properly implemented, please provide the information of the frequency, instrument, and documentation (shall be placed in the operating record) of temperature measurement activities.
 - vi. Please provide the info of the use or application the final product from the composting area such as landscaping, on-site erosion control, etc.

Facility Plan

7. The “Written Facility Plan” is located in Appendix E, not Appendix D. Please correct this typographic error.
8. To be consistent with the final soil cover design as described in the Closure Plan, please delete “drainage layer” in the second paragraph of the “General” Section, on Page 46.
9. The Rule 15A NCAC 13B .0537(e)(2) defines the gross capacity as the volume of the landfill calculated from the initial waste placement through the top of the final cover, include any periodic cover. Therefore, the total gross capacity of the C&DLF will be 434,135 cubic yards (cy), the sum of the total air space of 352,500 cy permitted in 1997 and the volume of the final soil cover system of 81,635 cy. Please change the value of total gross capacity of the C&DLF to 434,135 cy at the first sentence of the third paragraph of “General” section, on Page 46 and describe how the total gross capacity is derived from.

10. In the Facility Plan, please describe the C&DLF **service area** and the **waste disposal rate** – daily (based on the working day per year) and annually - e.g. ton per day and ton per year approved by the Lenoir County Board of Commissioners [Rule 15A NCAC 13B .0537(e)(1)(B) &(C)]. The historical records indicate that the annual C&D waste disposal rate of 3,000 tons per year was described in the approved 1997 “Site and Construction Transition Plan.” The landfill service area is Greene County. If the aforementioned info is not subject to change in the future, please reiterate the info in the Facility Plan.
11. The life expectancy calculation is based on the rate of 12,941 cubic yards per year, for the first year and an annual increase of 3.1% for each year thereafter. Please also provide this annual rate of 12,941 cubic yards per year in unit of “**tons per year**.”

Drawings

12. (Drawing No. F1/Sheet 3 of 7) Because the total gross capacity of the C&DLF is 434,135 cubic yards (Referring to Comment No. 9). The tabulated value of “C&D Unit on top of closed MSW Unit (remaining as of 5/8/2009) will be 312,112 cy, the difference of 434,135 cy and 122,023 cy. Please update the value on the drawing.
13. (Drawing No. CL3/Sheet 5 of 5) The specified stone is NC DOT No. 5, not # 57 stone shown in the permanent methane trench detail. Please correct this typographic error.

The Solid Waste Section approved the Assessment of Corrective Measures for the C&DLF dated August 30, 2007. In the approval letter, the Solid Waste Section requested the County to conduct a public meeting to discuss the assessed corrective measures with affected and interested parties in compliance with Rule 15A NCAC 13B .1635(d). The copies of documentations of the requested public meeting are not appended in the Corrective Action Plan (CAP) and can't locate in the DWM file system, either. Please submit the copy of the public meeting records stated in the Rule 15A NCAC 13B .1635(d).

On October 29, 2010 the Solid Waste Section requested the County to submit an updated CAP to reflect corrections and changes in design presented in the existing CAP dated February 25, 2009 and revised through February 12, 2010. The updated CAP is not available in the DWM file system. Please submit the update CAP.

Please submit the requested documents and timely respond the above-referenced comments which shall be incorporated into the revised Application. One hard copy and an electronic copy for each submittal are required. The Solid Waste Section appreciates your patience, efforts, and cooperation in these matters. If you have any permitting questions, please contact myself at (919) 707-8251.

Mr. David Jones
November 04, 2011
Page 4 of 4
Doc ID: 15527

Sincerely,

A handwritten signature in black ink, appearing to read "Ming-Tai Chao". The signature is fluid and cursive, with the first name being more prominent.

Ming-Tai Chao, P.E.
Environmental Engineer II
Permitting Branch, Solid Waste Section

cc:

Wayne Sullivan, MESCO
Dennis Shackelford, DWM
Central File

Ed Mussler, Permitting Branch Supervisor
Ben Barn, DWM

CIVIL/SANITARY/ENVIRONMENTAL ENGINEERS

SOLID WASTE MANAGEMENT

**Municipal
Services**

**Engineering
Company, P.A.**

SITE PLANNING/SUBDIVISIONS

SUBSURFACE UTILITY ENGINEERING (SUE)

October 14, 2011

Ming-Tai Chao, P.E.
Environmental Engineer II
NCDENR – Solid Waste Section
401 Oberlin Rd.
Raleigh, NC 27605

Re: Application for Permit to Continue Operation
Greene County C & D Landfill, Permit No. 40-02-CDLF-1997

Dear Mr. Chao:

In response to your July 1, 2010 letter, we submit the following:

General***Response to NCDENR Comment Numbers 1:***

We have added Facility Plan Drawings to Appendix A and we have also added Appendix E for the Written Facility Plan.

Response to NCDENR Comment Number 2:

The volumes, text and drawings have been revised.

Response to NCDENR Comment Number 3(i. through iv.):

- i. We have corrected the typographic error.
- ii. We have addressed items (a-g) as requested.
- iii. The Electronics Recycling Area is located under the shelter built behind the shop building. The electronics are stored under this shelter in Gaylord boxes, when the pallets are full, they are hauled away as necessary. We have addressed items (a-d) as requested.
- iv. All non-C&D wastes that are found are placed in dumpster(s). The dumpster(s) will move along with the progression of fill. When the dumpster reaches capacity the County will haul it to the Regional Landfill for disposal.

Response to NCDENR Comment Number 4:

We have revised the text in Section 1.2(5)(b) as requested.

Response to NCDENR Comment Number 5:

We have revised the text in Section 1.3 as requested.

Response to NCDENR Comment Number 6:

The text and the drawings have been revised to match the map in Appendix C of the CAP. There are 13 monitoring points shown on the map.



Not scan yet (includes
No Revised
appl.

Fac/Perm/Co ID #	Date	Doc ID#
40-02	10/25/2011	DIN 15496

Response to NCDENR Comment Number 7:

We have revised the drawings to show the correct methane probes.

Response to NCDENR Comment Number 8:

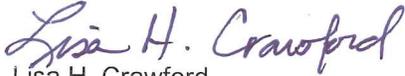
We have revised the drawings to show the correct methane probes.

Response to NCDENR Comment Number 9:

We have included the documentation requested.

Please find enclosed two (2) copies of the revised plans and text. If you have any questions or need additional information please don't hesitate to give us a call.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., PA



Lisa H. Crawford
Designer

LHC:lhc
Enclosures

cc: David Jones, Public Works Director



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

Beverly Eaves Perdue
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July 1, 2010

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Greene County Public Works
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Re: Additional Comments on Permit Application for Continued Operation (Application)
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Greene County, North Carolina
Permit No. 40-02, Document ID No. (Doc ID) 10988

Dear Mr. Jones:

The Division of Waste Management (DWM), Solid Waste Section has reviewed the May 20 2010 letter and attached Application (Doc ID 10705), submitted by Municipal Engineering Services Co., Inc. (MESCO), on behalf of Greene County, to respond the DWM's comments (Doc ID 8828) dated October 23, 2009. Based on the review Solid Waste Section has additional comments on the new submittal, and your responses to the following comments will expedite the review of the Application:

1. The Division has significant concerns regarding the incomplete responses to Comments 2 and 25 dated October 23, 2009. In compliance with Rule .0537(e)(1), (2), & (3), Greene County must provide **the Facility Plan** in the Application to detail the comprehensive development of the C&DLF – Phase 2 through Phase 7 as shown on Drawings F2 (Sheet 4 of 9) to F7 (Sheet 9 of 9).
2. The Division has additional concerns regarding the responses to Comments 2, 3 and 17 (Part 3) dated October 23, 2009. According to the submitted facility drawings and the response to the Comments 2, Greene County C&DLF will be developed by 5 phases (Phase 2 thru. Phase 7) in next 30 more years (as of 05/08/2009) with approximately total capacity of 531,307 cy (including 409,284 cy un-used space). However, according to the previously approved Facility Plan in the “Construction & Demolition Landfill for Greene County” dated December 1, 1997, the originally approved total capacity is 352,500 cy. The proposed landfill capacity (531,307 cy) will increase 50% more than the originally approved one (352,500 cy), and it is a substantial permit amendment [NCGS 130A-294(b1)(1)]. Therefore, Greene County must submit substantial permit amendment application in accordance with Rules .0533(a)(3), .0535(c), and .0537 – Facility Plan for the C&DLF.

Section 1 – Operation Plan

3. (Section 1.2, Operation Requirements – 1. Waste Acceptance and Disposal Requirements)

Please address the following concerns:

- i. (On page 6) There is a typographic error in paragraph f. Please change “except” to “accept.”
- ii. To clarify the waste stream that can be accepted in the Yard Waste Area for processing and treatment but not for disposal, please add the following requirements to the Item i (on page 7) or address the concerns as described below:
 - a) Please add the following requirements to the Item i: Yard trash as defined in NCGS 130A-290, shall not be disposed in the landfill area. However, yard trash, along with land-cleaning debris and wooden pallets, may be accepted for processing in the “Yard Waste Area” as shown on Drawing CD1, Sheet 3 of 8.
 - b) Please define the yard waste (type) facility according to Rule .1402. Greene County proposes to store waste up to 50 tons at any time in the facility. Please also describe the facility size (how many acres) and the maximum volume in cubic yard at any time. If this facility is defined as “Small Type 1” facility, please address that the facility meets the requirements stated in Rule .1402(g)(3).
 - c) Yard Waste Area shall follow the operation requirements stated in Rule .1406. Please pay special attention to the time and temperature requirements dependent on the type of the facility (Such as for Type 1 facility, the waste compost process shall be maintained at or above 55 degrees Celsius [131 degrees F] for 3 days and aerated to maintained elevated temperatures).
 - d) Provide the classification and distribution of the final products according to Rule .1407.
 - e) The maximum volume or weights of scrap or used tires that can be stored on site at any give date. Will the tired be stored in the trailers or on the ground? If tires stockpiled on ground, Green County must address the BMPs for prevention surface water/ runoff from contacting wastes.
 - f) Please add the following requirement to the Item i: “*White goods collection area shall provide for the proper removal of chlorofluorocarbon refrigerants by well-trained personnel.*”
 - g) The information of the companies that have contacted to Green County to haul and distribute/recycle the yard waste, white goods, scrap tires must be placed in the operating record.
- iii. The DWM Facility Compliance Audit Report that concluded the findings of the November 4 2009 site inspection indicated Green County manages an electronic recycling program at this C&DLF. The collected electronic wastes (e-wastes) are currently stockpiled on the ground without any barrier. Please address the following concerns and incorporate the responses to the Operations Plan:
 - a) To avoid any potential hazardous wastes in the discarded e-wastes contaminating environment, Greene County must temporary store the e-wastes in covered containers or in containers housed in a covered structure which shall be labeled or tagged for acceptable waste streams.

- b) Show the e-waste collection area on the facility plan and operation plan drawings.
- c) Describe the maximum amount of e-wastes will be stored on-site at any day, the acceptable e-waste streams, and e-waste separation plan, if applicable.
- d) The information of the companies that have contacted to Green County to haul and distribute/recycle the e-wastes must be placed in the operating record.

Please reference the proposed law - SB 887 also HB 1761 in 2010 for operating e-wastes in the State of North Carolina and incorporate the applicable rule requirements to the day-to-day waste management practices.

- iv. The DWM Facility Compliance Audit Report that concluded the findings of the November 4 2009 site inspection indicated that Greene County utilizes a dumpster on top of the landfill to collect non-C&D wastes. Please address the following concerns and incorporate the responses to the Operations Plan:
 - a) How are the collected non-C&D wastes disposed off or recycled?
 - b) When, where and how will the dumpster be emptied?
 - c) Will this dumpster be always staged in the fixed location or moved along with the progress of the working face? Please clarify. In addition, if the dumpster is located in the fixed location, please show the location on the operation plan drawings.
- 4. (Section 1.2, Operation Requirements – 5. Air Criteria and Fire Control, on page 8) For approval of open burning, please add the following new requirement (in italic format) to the end of second sentence in Part 5.b. *“Prior to any burning, a request...for review and approval. In addition, the Division of Air Quality and local fire department must approve the activity prior to burning.”*
- 5. (Section 1.3, Ground Water and Surface Water Sampling and Analysis Plan) Please address the following concerns:
 - i. (On page 11) Please add the reference of the guidance document - “Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling.” Revised April 2008.
 - ii. (On page 12) Please add sampling equipment for field testing of turbidity and dissolved oxygen and carbon dioxide listed in the Table on page 11.
 - iii. (On page 15) Please add analyte in Appendix II to the first sentence on page 15.
- 6. (Section 1.4, Explosive Gas Control Plan) The number of existing monitoring points is not consistent between this Section (9 gas probes) and those shown on the drawings (11 gas probes) and the one in Appendix C of the Corrective Action Plan (12 gas probes). Please make necessary corrections.

Figures

- 7. The identification number of methane probe MP4 are repeatedly shown at two differently probe locations throughout all drawings in the Application. Please correct this typographic error.

8. The methane probe, MP9 is not shown on any drawing throughout the Application which is inconsistent with the drawing of methane probe locations in Appendix C of the Corrective Action Plan approved February 16, 2010. Please make necessary correction.

Section 4 – Financial Responsibilities

9. According to the DWM record, the Solid Waste Section has approved Greene County financial assurance on February 5, 2010. Therefore, the approved document including the local government financial assurance test for fiscal year 2009 and DWM approval letters must be included in Section 4.

Please timely respond the above-referenced comments and submit the Solid Waste Section a revised portions of the Application (one hard copy and an electronic copy), which incorporates the requested information. The Solid Waste Section appreciates your efforts and cooperation in this matter. If you have any permitting questions, please contact me at (919) 508- 8507.

Sincerely,



Ming-Tai Chao, P.E.
Environmental Engineer II
Permitting Branch, Solid Waste Section

cc:

Wayne Sullivan, MESCO
Donna Wilson, DWM
Ben Barnes, DWM

Ed Mussler, Permitting Branch Supervisor
Dennis Shackelford, DWM
Central File

**Municipal
Services**

SITE PLANNING/SUBDIVISIONS



**Engineering
Company, P.A.**

SUBSURFACE UTILITY ENGINEERING (SUE)

May 20, 2010

Ming-Tai Chao, P.E.
Environmental Engineer II
NCDENR – Solid Waste Section
401 Oberlin Rd.
Raleigh, NC 27605

Fac/Perm/Co ID #	Date	Doc ID#
Ming Chao 40-02	5/26/2010	DIN 10905



Re: Application for Permit to Continue Operation
Greene County C & D Landfill, Permit No. 40-02-CDLF-1997

Dear Mr. Chao:

In response to your October 23, 2009 letter, we submit the following:

General***Response to NCDENR Comment Numbers 1, 2 and 3:***

Facility Plan Drawings have been added to this application and the charts requested in comments 1,2 and 3 have been included on the appropriate drawings.

Response to NCDENR Comment Number 4:

We have added "Section 1.4 Explosive Gas Control Plan" and made reference to it in Section 1.1 as requested.

Response to NCDENR Comment Number 5:

We have added "Section 1.3 Ground Water and Surface Water Sampling and Analysis Plan" and made reference to it in Section 1.1 as requested.

Response to NCDENR Comment Number 6:

We have added items (viii) and (ix) to Section 1.2(10)(a) as requested.

Response to NCDENR Comment Number 7:

The County was considering a White Goods Pad, however they have not made the decision to proceed at this time. Therefore, we have not shown a proposed or existing pad.

Response to NCDENR Comment Number 8:

We have added item (l) to Section 1.2(1) as requested.

Response to NCDENR Comment Number 9:

We have revised the text in Section 1.2(1)(f) as requested.

Response to NCDENR Comment Number 10:

The County agrees with your suggestion. We have revised the text in Section 1.2(1)(f) as requested.

Response to NCDENR Comment Number 11:

We have revised the text in Section 1.2(1)(h) as requested.

Response to NCDENR Comment Number 12:

We have revised the text in Section 1.2(5)(c). There is no written documentation of local fire protection. In the event of a fire, the landfill operator(s) will dial 911. Castoria Voluntary Fire Department is located approximately 2 miles away and will provide the required services. Appendix D has been added to reference all state and local contact information.

Response to NCDENR Comment Number 13:

We have revised the text in Section 1.2(5)(c).

Response to NCDENR Comment Number 14:

We have revised the text in Section 1.2(6)(c).

Response to NCDENR Comment Number 15:

We have revised the text in Section 1.2(6)(d).

Response to NCDENR Comment Number 16:

Text has been added to Section 1.2(8)(f) to address this issue.

Section 2 – Closure Plan**Response to NCDENR Comment Number 17(3 parts):**

- To address the first two parts of Comment 17, we have included a slope stability report by ECS, Ltd. to address the 3 to 1 side slopes.
- We have included the life expectancy on each sheet of the facility plan drawings.

Response to NCDENR Comment Number 18:

We have revised the text in Section 2.3(h).

Response to NCDENR Comment Number 19:

We have revised the text in Section 2.4.

Response to NCDENR Comment Number 20:

Text has been added to address this issue. Section 2.6 now addresses this and the Closure Costs Section has been changed to Section 2.7.

Section 3 – Post-Closure Plan***Response to NCDENR Comment Number 21:***

Text has been added to Section 3.1 to address this issue.

Response to NCDENR Comment Number 22:

We have revised the text in Section 3.1 to include this statement.

Figures***Response to NCDENR Comment Number 23:***

Existing erosion control, drainage features, monitoring wells, methane probes, waste footprints and buffers have been added to all necessary drawings. Due to the location of the surface water monitoring points, a separate map has been added to the end of the text Section 1.0.

Response to NCDENR Comment Number 24:

The requested features have been added to all necessary drawings.

Appendix B – Local Government Approvals***Response to NCDENR Comment Number 25:***

The Facility Plan drawings have been added to Appendix A in the application.

Response to NCDENR Comment Number 26:

We have replaced the incorrect Public Notice Advertisement with the correct one provided by The Standard Laconic Newspaper.

Appendix C – Waste Screening Plan***Response to NCDENR Comment Number 27:***

The text has been revised to address the typographic errors in Appendix C.

Response to NCDENR Comment Number 28:

We have added Appendix D to provide state and local contact information.

Please find enclosed two (2) copies of the revised plans and text. If you have any questions or need additional information please don't hesitate to give us a call.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., PA


Lisa C. Hampton
Designer

LCH:Ich
Enclosures

cc: David Jones, Public Works Director



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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

Solid Waste Section

October 23, 2009

Mr. David Jones, Director
Greene County Public Works
P.O. Box 543
Snow Hill, North Carolina 28580

Re: Additional Comments on Permit Application for Continued Operation (Application)
Greene County Construction and Demolition Debris Landfill (C&DLF)
Greene County, North Carolina
Permit No. 40-02, Document ID No. (Doc Id) 8828

Dear Mr. Jones:

The Division of Waste Management (DWM), Solid Waste Section has reviewed the 24 September 2009 letter and attached Application (Doc Id 8825), submitted by Municipal Engineering Services Co., Inc. (MESCO), on behalf of Greene County, to respond the DWM's comments (Doc Id 6842) dated February 19, 2009. Based on the review Solid Waste Section has additional comments on the new submittal, and your responses to the following comments will expedite the review of the Application:

General

1. Please provide information of the facility property deed document. This information will be incorporated to the facility operation permit condition as below.

Property	Book	Page	Acreage	Grantor	Grantee
Total Site Acreage:					

Section 1 – Operation Plan

2. Please briefly describe the facility history (for both MSW and C&D units) including, but not limited to:
 - Dates for the original permits (MSW and C&D units) issuance and closure date of MSW unit,
 - Permitted gross capacities for MSW and C&D units, the remaining capacity of C&D unit
 This information will be incorporated to the facility operation permit condition as below:

Unit	Acres (waste footprint)	Total Gross Capacity (cubic yards)
Closed unlined MSW Unit		
C&D unit on top of closed MSW Unit (filled)		
C&D unit on top of closed MSW Unit (remaining as of the <u>Month Year</u>)		

survey date)		
Total		

Note: Total gross capacity for the C&D landfill unit is defined as the volume measured from the bottom of C&D waste (e.g. the top of the cover system of the MSW landfill) through the top of final cover.

- Approved waste disposal rate (ton per year or ton per day) and projected service life of the C&D unit.
- Permitted acreage for the landfill facility and acreages for both MSW & C&D waste footprints.
- Service areas.

The above requested info can be incorporated in the requested Facility Plan [please see Comments 3 & 25]. This information will be used for preparing the fact sheet and the facility operation permit condition.

- Greene County needs to further clarify the response to DWM's Comment 17 dated February 19, 2009. Based on the review of the Greene County's response dated September 22, 2009, Solid Waste Section interprets that operations of C&D unit will be consistent with the final contours as shown on Drawing CL1/Sheet 3 of 5 and Drawing PROF1/Sheet 5A for operating capacity to approximate elevation 144 feet at mean seal level. After the capacity is consumed in the end of the estimated service life by 2014, the C&D unit must stop receiving wastes at that date followed by a final site closure within 180 days after that date. If the C&D unit reaches the approved 144 feet final grade and closes down, in the future, any landfill construction, operation, and development at this facility will be considered as a new facility and subjected to applicable statutes and rules in effect on that date and the DWM's approval.

If the above-mentioned interpretation is incorrect, Greene County must submit an updated facility plan with scaled drawings to address the landfill incremental phased development according to Rule .0537.

This information will be incorporated to the facility operation permit condition as below:

C&D Unit	Acres	Gross Capacity (cubic yards)	Projected Service Life
Phase I			
Phase II			
Phase III			

- (Section 1.1, second paragraph on page 4) Please add the **reference** (document title and date) that the quarterly landfill gas monitoring activities will be conducted by Greene County in accordance with the DWM-approved methane gas monitoring plan.
- (Section 1.1, first or second paragraph on page 5) Please add the **reference** (document title and date) that the water quality monitoring activities and corrective action program will be conducted by Greene County in accordance with the DWM-approved plan (s).
- (Section 1.1, fifth paragraph on page 4 & Section 1.2, Paragraph 10 on page 9) Pursuant to Rule .0542(n), please add the following document to the operating record:
 - Notation of approval date and the name of the DWM personnel who approval the type of the open burning
 - Approved monitoring plans and corrective action plans.
- (Section 1.2) According to the DWM Facility Compliance Audit Report dated May 15, 2007, a pad to store white goods was proposing to construct at the landfill property. Please show the proposed or as-built pad location on the facility drawing - Drawing No. CD1/ Sheet 3 of 8.

8. If the recyclable wastes including yard wastes, white goods, used tires, and etc. are receiving for recycling, processing and/or temporarily stockpiled within the permitted landfill property. The Operations Plan must describe how the above-mentioned wastes be managed on-site including, but not limited to:
 - Waste segregation (need to be incorporated to the waste screening and segregation plan)
 - Estimated waste amount per week or month,
 - Temporary stockpile and storage locations shown on Drawing No. CD1/ Sheet 3 of 8
 - Schedule for off-site removal of the recyclable wastes
 - Measures and BMPs for prevention surface water from contacting wastes
 - The maximum tonnage will be allowed to store at any time at the facility
 - The information of the companies that have contracted to Greene County to haul and process the recyclable wastes off-facility
 - The total amount of each of the recyclable wastes must be documented in the operating record. Scales shall be used to weigh the amount of recyclable waste.

9. (Section 1.2) Please rewrite the Paragraph 1.f of C&D wastes in according to the definition in NCGS 130A-290 (a)(4).

10. (Section 1.2, Paragraph 1.f) The recently effective Rule 15A NCAC 13B.0532 defines “C&D solid wastes” as solid wastes 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. The new rule prohibits the disposal of roof shingle waste from manufacturers, lumber from lumber yards, scrap materials from cabinet manufacturing facilities, and waste building materials from mobile home / modular home manufacturers, except under certain circumstances. The industrial waste normally must be disposed in a MSWLF or an industrial landfill, not a C&DLF. Provisions of the C&DLF rules could allow the waste to continue to be disposed of in the landfill if Greene County and the manufacturers agree to adhere to disposal criteria as outlined below:

“Solid waste that is generated by mobile or modular home manufacturers and asphalt shingle manufacturers in Greene County. The waste must be source separated at the manufacturing site and must exclude municipal solid waste, hazardous wastes, and other wastes prohibited from disposal in a C&DLF. It must be transported to the Greene County C&DLF in a shipment or container that consists solely of the separated waste to be disposed. Greene County C&DLF will not accept this waste if it has not been separated and transported as specified.”

If Greene County agrees with this suggestion, please replace the wastes described in the second line, starting with “from...,” to the end of this paragraph with the above-referenced description.

11. (Section 1.2, Paragraph 1.g) Wooden pallets are banned from disposal as defined in the NCGS Article 9, Chapter 130A-290(44a), effective October 1, 2009. Only pallets generated in C&D activities may be disposed of in a C&DLF, not pallets generated in industrial or commercial activities. All pallets are recyclable. Therefore, please remove wooden pallets from the list of waste stream for disposal and add this waste to the list of waste prohibited for disposal in Paragraph 1.h. Wooden pallets that are ground for mulch or boiler fuel or other such uses may be added to the waste streams to the on-site yard waste compost unit, if exists. Please incorporate the above-mentioned requests to the revised Operations Plan.

12. (Section 1.2, Paragraph 5.c) Please provide the written agreement or proof of arrangement for the fire-fighting services at the C&DLF from a local fire department. The document shall be appended to the Operation Plan.

13. (Section 1.2) The Paragraph 5.c needs to address the following fire fighting concerns:
 - List the types of fire fighting equipment available on site.
 - Stockpile piles of dirt near the working faces which will be used for putting off hot loads or fires

- Indicate where the water sources are located if water is using for fire fighting.
 - Confirm that the compactors and other facility machinery are equipped with proper fire extinguishers.
14. (Section 1.2) The Rule .0542(j)(3) requires the access road to monitoring locations must be all-weather construction and maintained in good condition. Please revise Paragraph 6.c accordingly.
15. (Section 1.2) The Paragraph 6.d needs to describe water sources – water wells or sediment basins. Please clarify.
16. According to the DWM Facility Compliance Audit Report dated May 15, 2007, leachate was occasionally seeping out of the side slopes of the closed unlined MSW unit, which is underlain by the C&D unit. Therefore, the provisions of management of leachate breakout need to be discussed in the Operations Plan. The Plan needs to discuss the leachate handling and disposal, the final cover repair methods, methods to stop seepage, record keeping, and notification requirements (report to County and DWM with a pre-determine time frame and report contents).

Section 2 – Closure Plan

17. For Comments 11 and 23 dated February 19, 2009, the DWM has two seriously concerns stated below, please address the concerns properly.
- The slope stability of the proposed final soil cover system. According to Rule .0543(c)(2)(A), the maximum post-settlement surface slopes of the final cover system is 25 percent (%). The Drawing CL1 / Sheet 3 of 5 and Drawing PROF1/Sheet 5A indicate the final cover system of the C&D unit having a 33.33% (3 to 1) side slope. The proposed side slope does not comply with the above-referenced rule requirements. Please also be aware that the slope stability analyses conducted in pervious submittals in 1994 and 1997 are not applicable to the proposed cover system in 2009 permit application because the configuration of the final cover systems are different from each other [3 to 1 (in 2009 proposal) vs. 6 to 1 (in 1994 and 1997 approved permit application)].
 - According to Rule .0543(c)(3)(C), however, Solid Waste Section may approve the proposed final side slope, 33.33%, if Greene County submits a slope stability analysis including information (including references, assumptions, and calculations) to demonstrate the proposed final cover will be stable and safe during the 30-year post-closure period. And the soil engineering properties including shear strength, density, and/or internal friction angle used for designing the final soil cover system must be considered as the minimum criteria to select the earthen material and be field tested in according to the requirements specified in the Construction Quality Control and Quality Assurance (CQA) Plan.
 - In June 17, 2005 MESCO, on behalf of Greene County submitted a 5-year Life Expectancy Calculation with a revised Operation Plan. The remaining total gross capacity for the C&D unit is 64,340 cubic yard based on the survey data as of February 15, 2005 and is approved by the DWM on January 25, 2006. The changes of configuration of the final cover system may increase the total gross capacity than the original approved one. Should this change of gross capacity is equal to or more than 10%, the permit application for a substantial amendment, defined in NCGS Article 9, Chapter 130A-294(b1)(1) must be prepared in accordance with Rule .0535(c).
18. (Section 2.3.h) The section proposed that “if after placement of the soil cap it fails the required tests, the material will either be reworked or replaced.” Shall there be another QC testing on the reworked or replaced material to verify and confirm the final products meets the specification? Pleas clarify.
19. (Section 2.4) What is the provision of confirmation of the final thickness of erosive layer? Please clarify.
20. Upon completion the site closure, a CQA Report in compliance with the requirements in Rules .0541(c) & (d) must provide to the DWM for a review and approval. Please address the CQA Report format, contents, and submittal schedule accordingly.

Section 3 – Post-Closure Plan

21. According to the DWM Facility Compliance Audit Report dated May 15, 2007, leachate was occasionally seeping out of the side slopes of the closed unlined MSW unit, which is underlain by the C&D unit. Therefore, the provisions of management of leachate breakout need to be discussed in the Post-Closure Care Plan. The Plan needs to discuss the leachate handling and disposal, the final cover repair methods, methods to stop seepage, record keeping, and notification requirements (report to County and DWM with a pre-determine time frame and report contents).
22. Please add the flowing requirement to the Description of Maintenance Activities:
“*Making repairs as necessary to maintain the integrity and effectiveness of the cap system.*”

Figures

23. (Drawing No. CD1/ Sheet 3 of 8 and Drawing No. CL1/ Sheet 3 of 5) Please add the following features to the drawings:
- Locations of groundwater wells, surface water monitoring points, and landfill gas wells/probes with the identification numbers.
 - Locations of sediment basins and BMPs of the constructed erosion and sediment control measures identified on drawings
 - Drainage features including flow lines and flow directions
 - Waste footprints of both existing C&D and closed MSW units
 - Established buffers with number of distances and identify known wetlands and floodplains with the referenced document.
24. (Drawing No. CD1/ Sheet 3 of 8) If the landfill facility encompasses other waste management units, such as tire storage area, white goods/ scrap metal area, yard waste composting area, other recycling material stockpile area, please add these units to the drawing.

Appendix B – Local Governmental Approvals

25. Please provide the facility plan and related drawings. The facility plan is a conceptual plan for the development of the entire C&DLF facility and shall be prepared in accordance with the Solid Waste Management Rule (Rule) 15A NCAC 13B.0537 (d)(1), (e)(1), (e)(2), and (e)(3). In compliance with the requirements stated in Rules 0547(4)(a) and .0536(c)(11)(C), the facility plan that is approved by the Greene County Commission Board must be a portion of the a local governmental approval document.
26. For Comment 5 dated February 19, 2009, the requested copy of the public notice that should be posted in a legal section of the local newspaper on January 23, 2008 did not submitted with the revised Application. The attached copy of a legal advertisement is related to the 2007 public notice for the groundwater remediation / corrective action. Please provide a copy of the legal advertisement of the 23 January 2008 public notice.

Appendix C – Waste Screening Plan

27. (Paragraph D, on page 31) Below list several typographic errors are found in the section, please make necessary corrections:
- Replace “MSWLF” to C&DLF (Paragraphs 1 & 3).
 - Replace “municipal solid wastes” to “C&D wastes” (Paragraph 4).
 - Replace “The City of Albemarle” to “Greene County C&DLF (pages 31 & 32).
28. (Paragraph D.2 – Inspection) Please add contact information (name, phone number, etc.) of the State Waste Management Office, Local Hazardous Material Response Team, Local Fire Department, Local Sheriff Department to this section. This contact info must be updated periodically and posted in the location can be easily accessed to the on-site personnel in the event any hazardous and prohibited wastes are found in the working faces or inspection areas.

Please timely respond the above-referenced comments and submit the Solid Waste Section a revised portions of the Application (one hard copy and an electronic copy), which incorporates the requested information.

Additionally, the Solid Waste Section approves the cost estimates for closure and post-closure care of the Greene County Landfill. The approved costs, in year 2008 dollar values, are \$1,145,751.00 for the closure of 12.65-acre landfill unit, the estimated largest area of the C&DLF unit requiring the specific cover system at any time during the five-year permitted period, and \$779,200.00 for the 30-year post-closure cares at 12.65-acre landfill unit. Pursuant to Rule .0547(4), within 30 days upon receiving this letter, Greene County must submit the DWM a financial assurance document in accordance with Rule .1628.

In accordance with the NCGS 130A-295.2(h), effective August 1, 2009, Greene County must also provide financial assurance sufficient to cover a minimum required amount of three million dollars (\$3,000,000.00) for potential assessment and corrective action at the facility. This financial assurance requirement is in addition to the financial responsibility requirements for site closure, post-closure cares, and corrective actions. Please submit the requested financial assurance document within 30 days upon receiving this letter. Within the next 12 months, Greene County will be required to evaluate the solid waste management facility to determine the estimated costs of potential assessment and corrective action based on the criteria established in the above-reference statute. Depending on this determination, the required financial assurance amount in the future may be higher than the minimum amount of three million dollars

The Solid Waste Section appreciates your efforts and cooperation in this matter. If you have any permitting questions, please contact me at (919) 508- 8507; and any questions associated with financial responsibility please contact Donald Herndon at (919) 508-8502.

Sincerely,



Ming-Tai Chao, P.E.
Environmental Engineer II
Permitting Branch, Solid Waste Section

cc:

Wayne Sullivan, MESCO
Donna Wilson, DWM
Dennis Shackelford, DWM
Donald Herndon, DWM

Ed Mussler, Permitting Branch Supervisor
Ervin Lane, DWM
Ben Barnes, DWM
Central File

Municipal Services



Engineering Company, P.A.

SITE PLANNING/SUBDIVISIONS

SUBSURFACE UTILITY ENGINEERING (SUE)

September 24, 2009

Patricia Backus
Environmental Engineer
NCDENR – Solid Waste Section
401 Oberlin Rd.
Raleigh, NC 27605



Re: Application for Permit to Continue Operation
Greene County C & D Landfill, Permit No. 40-02-CDLF-1997

Dear Ms. Backus:

In response to your February 19, 2009 letter, we submit the following:

General Application Requirements and Processing for C&DLF Facilities (15A NCAC 13B .0533)

1. Please add the address of the facility to the cover sheet of the application.
2. The cover sheet for the application did not include the applicant's address.
3. The application should include a statement of the purpose of the submittal signed and dated by the applicant.
4. Since Greene County is both the facility name and the applicant, please put "County of Greene" at the top of the sheet and above the names of the officials that you have listed on the left side of the sheet. It would also be helpful to include the permit number in the title.

The cover sheet has been revised in the plans and the text. The statement of purpose signed by the applicant has been provided with this submittal. The Statement of Purpose has been placed in Section 1.0 .

Application Requirements for C&CLF Facilities (15A NCAC 13B .0535)

15A NCAC 13B .0547(4) states the permit amendment should be prepared in accordance with Rule .0535(b). Rule .0535(b) specifies that a complete application must include an updated engineering plan prepared in accordance with Rule .0539, an updated construction quality assurance plan prepared in accordance with Rule .0541, an updated operation plan prepared in accordance with Rule .0542, an updated closure and post-closure plan prepared in accordance with Rule .0543, and an updated monitoring plan prepared in accordance with Rule .0544. Therefore, the sections were included in the review as appropriate.

This landfill is on top of a closed MSW landfill; consequently there are no engineering required other than closure which is covered under Rule .1627.

Fac/Perm/Co ID #	Date	Doc ID#
40-02	10/23/09	DIN 8825

Site Study for C&DLF Facilities (15A NCAC 13B .0536)

5. ***The application did not contain documentation that a legal advertisement was placed in a newspaper or newspapers serving the county at least 30 days prior to the public meeting. An affidavit of publication with a readable copy of the ad attached from the newspaper(s) could be used for documentation.***

Affidavit of publication have been included in Appendix B.

6. ***The application did not contain information showing property owners sharing a common border. Please include a parcel map with the owners and addresses of adjacent property noted.***

A map has been included in Appendix B.

7. ***The application did not provide documentation of the content of the letters sent to property owners. Please include a copy of the letter. Also, please include the return receipts from the registered letters.***

Copies of the two letters sent have been included in Appendix B, along with copies of the return receipts.

8. ***The "Public Meeting Notice" on Greene County letterhead was not dated or addressed. There was no additional information and I could not determine if it was included to document items 5 or 7. Please explain.***

The included notice was all the County sent us, we intended for it document item 5. The Affidavit of publication have been included in Appendix B.

9. ***It was unclear from the minutes from the Board of Commissioners meeting if materials were distributed or if there were any concerns expressed at the public meeting. Please review .0536(c)(11)(D) and include additional information about the public meeting. For example, if there were no comments from the public or no materials distributed, it should be noted in the application.***

These are the published minutes from the Board meeting, apparently from the minutes, there were no comments.

10. ***The application did not provide a letter from the unit of local government have zoning jurisdiction over the site stating the proposal met the requirements of the local zoning ordinance, or that the site is not zoned. Please provide that letter.***

This has been added to Appendix B.

Engineering Plan for C&DLF Facilities (15A NCAC 13B .0539)

11. *The application should include an engineering report supporting the final cap design. Requirements are listed in .0539(d). The engineering report must include a discussion of the analytical methods used to evaluate the design, definition of the critical conditions evaluated and assumptions made, and a list of technical references used in the evaluation. The information and calculations should demonstrate that the proposed cover will be stable and safe during the post-closure period. You may include a copy of an engineering report from a previously approved plan to support your design if the design has not changed.*

This is on top of an existing MSW landfill; consequently, there was no evaluation necessary. The closure will be done under Rule .1627 and any change in slopes needs to be done at the time of closure to assure that the steepest slopes, which are steeper than the prescribed slopes, have been analyzed for stability.

Construction Requirements for C&DLF Facilities (15A NCAC 13B .0540)

15A NCAC 13B .0543(b)(1) states standards must be established for the scheduling and documenting of the closure of all C&DLF unit and design or the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this section.

12. *Please address the requirements for survey control and location coordinates which would be important for construction during closure.*

Once again this landfill is on a closed MSW; however, two Rail road spikes with NC State Plane coordinates were shown on sheet 3 of the Operation Plan drawings and one of them has a elevation provided.

13. *Are there or will there be any erosion and sedimentation control measures? How does this meet the requirements listed in .0540(7)?*

The existing measures from the MSW landfill remain in place and are maintained.

Construction Quality Assurance for C&DLF Facilities (15A NCAC 13B .0540)

15A NCAC 13B .0543(b)(1) states standards must be established for the scheduling and documenting of the closure of all C&DLF unit and design or the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this section.

14. *Item 2.1 – 2.5 of the closure plan discuss the procedures and tests that will be used in the construction of the cap. The closure plan does not include a Construction Quality Assurance (CQA) plan as described in .0541(b). The requirements of a CQA plan go beyond listing the tests and results. The responsibilities and authorities, inspection activities, sampling strategies and documentation that should be addressed in a CQA plan are needed in order to ensure that the work is done properly and to provide the data for CQA report to finalize the closure. [.0541(a) – (b)]*

The text in Section 2.1 of the Closure Plan has been revised to address this issue.

15. ***There was no mention of a CQA report after cap construction is completed. The purpose and requirements for the CQA report are in .0541(c). The closure plan should state what information will be included in the report and the certification of the report.***

The text in Section 2.1 of the Closure Plan has been revised to address this issue.

Operation plan for C&DLF Facilities (15A NCAC 13B .0542)

16. ***Please add cross sections to the phasing plan drawings. Please include projected waste disposal rates, cover and airspace remaining.***

We have added the baseline to revised sheet 3 of 5 and the cross sections have been added to the set by the addition of sheet 5A.

17. ***These drawings are supposed to be consistent with the engineering plan. No engineering plan was provided with this submittal. When you revise your application, please insure they are consistent.***

There are no Engineering Plans because this landfill is on top of the closed MSW. There are 5 years of fill represented on the Operation Plan drawings as required by Rule .0547(4)(b).

18. ***In many places, your Operation Plan simply repeats the requirements word for word from the Solid Waste Rules. Knowing the rules is good, however, the Operation Plan should also describe how you will maintain and operate the facility such that you will meet the requirements. For example, 6.e. describes the need for signs with the hours of operation, permit, etc. is almost exactly word for word as stated in .0542(j)(5). Your operation plan should include your information on the days and times you are open to the public, etc.***

The written operation plan has been revised to reduce redundancy.

19. ***The Operation Plan is poorly organized and difficult to follow. Most of the 1.1 Introduction should be shown in existing or new sections. For example, it would seem more appropriate to list the types of waste you will receive in the waste acceptance section. I cannot review the plan in its current form. Please review the requirements and rewrite the operation plan in a useable format.***

The written operation plan has been revised to reduce redundancy.

Assessment of Corrective Measures (15A NCAC 13B .1635)

20. ***This letter does not include a review of the CAP. Mr. Zinith Barbee will provide a review of that document.***

We have responded to comments from Mr. Barbee concerning the CAP.

Closure and Post-Closure Requirements for MSWLF Facilities (15A NCAC 13B .1627)
and Closure and Post-Closure for C&DLF Facilities (15A NCAC 13B .0543)

- 21. The cap system must be designed and constructed to have a permeability less than or equal to the soils underlying the landfill, or the permeability specified for the final cover in the effective permit, or a permeability no greater than 1.0×10^{-5} cm/sec, whichever is less. Please include a discussion of the basis for your design assumptions in the engineering report.**

The assumption is that the landfill we built in the sand and the cap will be the prescribed cap.

- 22. Item 2.2 is exactly the same as the first paragraph of Item 2.3 which follows it.**

The text in Sections 2.2 and 2.3 has been revised.

- 23. Post-settlement surface slopes were not addressed.**

Maximum slopes will be 4:1 or 25% and minimum slopes will be 20:1 or 5%.

- 24. The plan states that native vegetation will be used as approved by the Erosion Control Plan. A plan was not included nor was any reference given to a plan.**

The text in Section 2.4 has been revised and seeding specifications have been added to the Closure drawings.

- 25. All closure activities must be with 180 days. The first sentence in the third paragraph agrees with this. The first sentence in the first paragraph could be misinterpreted.**

As stated, the cap closure will begin within 30 days of the notice of final waste received and will be completed within 180 days of the notice of final waste received.

- 26. The closure plan did not include an estimate of the maximum inventory of waste onsite over the active life of the landfill facility.**

The text has been revised in Section 2.1 to show the maximum inventory of waste.

- 27. More detail is needed for the cost estimate of the closure activities. For example, in item 1 the unit cost for soil is \$9.00 per cubic yard versus \$4.00 in item 2. What makes the unit costs different? Provide the basis for all the costs assumed.**

In item 1 the soil is required to be 1.0×10^{-5} cm/sec soil which is more expensive than the erosive soil layer in item 3(not item 2).

- 28. Please include the in the post-closure plan the use restrictions listed in .0543(f)(3) and the need for approval by the Division for a change in use.**

The text has been revised in Section 3.1 to address this issue.

- 29. Do you plan to mow the grass? Are there gates, roads, signs, etc. that will need to be monitored and/or maintained? Please include in plan and estimate.**

The text has been revised in Section 3.1 to address this issue.

30. *The description of monitoring activities should provide details. For example, what are the locations that will be sampled? What analyses will be run? Have these locations and analyses been approved by the Division? If so, include that information. This supporting information is needed in order to evaluate the post-closure cost estimate.*

This information has been submitted with the Corrective Action Plan to Zinith Barbee.

31. *Please note that at the end of the post-closure care a professional engineer will need to certify that the post-closure care was completed in accordance with the post-closure plan. Unless he has been there the whole post-closure period, he will probably need documentation of the care to make his certification. Do you plan to keep records of the maintenance and monitoring activities in the landfill records? Will they be adequate for a PE certify? If so, please describe.*

Administration/Record keeping and Certification have been added to the Post-Closure cost estimate in Section 3.2.

32. *More detail is needed for the costs in the post-closure estimate similar to comment 24.*

We have a line item for "closure of sedimentation and erosion control devices" in the post-closure estimate.

Financial Assurance Rule (15A NCAC 13B .1628)

33. *The financial assurance test should be updated based on the Annual Financial Information Report for the fiscal year ended June 30, 2008. This request was made in a letter dated January 15, 2009, from Donald Herndon of our compliance Branch to Greene County.*

The County has updated their local government test for financial assurances and they have been sent to the Solid Waste Section under separate cover.

Please find enclosed two (2) copies of the revised plans and text. A CD with an electronic copy will be provided once the application is finalized. If you have any questions or need additional information please don't hesitate to give us a call.

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., PA



Lisa C. Hampton
Designer

LCH:Ich
Enclosures

cc: David Jones, Public Works Director



Scanned by	Date	Doc ID #
Backus	02/19/2009	6842

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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

February 19, 2009

Mr. David Jones
Public Works Director
P. O. Box 543
Snow Hill, NC 28580

RE: Application for Continued Operation
Greene County Construction and Demolition Landfill (C&DLF)
Greene County, Permit No. 40-02, Doc ID No. 6842

Dear Mr. Jones:

The Division of Waste Management (Division), Solid Waste Section (Section) has completed an initial technical review of the application submitted by Municipal Engineering Services Company for the continued operation of the Greene County C&DLF. The Greene County C&DLF is a C&DLF unit on top of a closed Municipal Solid Waste Landfill (MSWLF) and the criteria for the submittal was set forth in Rule 15A NCAC 13B .0547(4).

The criteria included the application be prepared in accordance with Rule .0535 (b) and include local government approval in accordance with Rule .0536(c)(11), an operations plan in accordance with Rule .0543 including a five-year phase of development and waste acceptance plan, a corrective action plan (CAP) for the closed MSWLF prepared in accordance with Rules .1636 and .1637, a closure and post-closure plan prepared in accordance with Rule .1627, and financial assurance in accordance with Rule .1628. Requirements from other rules are incorporated by reference and are noted in the comments and requests below.

General Application Requirements and Processing for C&DLF Facilities (15A NCAC 13B .0533)

15A NCAC 13B .0533 (b) provides guidelines for the preparation of all applications and plans required by Rules .0531 through .0547.

1. Please add the address of the facility to the cover sheet of the application.
2. The cover sheet for the application did not include the applicant's address.
3. The application should include a statement of the purpose of the submittal signed and dated by the applicant.
4. Since Greene County is both the facility name and applicant, please put "County of Greene" at the top of the sheet and above the names of the officials that you have listed on the left side of the sheet. It would also be helpful to include the permit number in the title.

Application Requirements for C&DLF Facilities (15A NCAC 13B .0535)

15A NCAC 13B .0547 (4) states the permit amendment should be prepared in accordance with Rule .0535(b). Rule .0535(b) specifies that a complete application must include an updated engineering plan prepared in accordance with Rule .0539, an updated construction quality assurance plan prepared in accordance with Rule .0541, an updated operation plan prepared in accordance with Rule .0542, an updated closure and post-closure plan prepared in accordance with Rule .0543, and an updated monitoring plan prepared in accordance with Rule .0544. Therefore, these sections were included in the review as appropriate.

Site Study for C&DLF Facilities (15A NCAC 13B .0536)

15A NCAC 13B .0547 (4) (a) states that the application must contain local government approval in accordance with Rule .0536(c) (11).

5. The application did not contain documentation that a legal advertisement was placed in a newspaper or newspapers serving the county at least 30 days prior to the public meeting. An affidavit of publication with a readable copy of the ad attached from the newspaper(s) could be used for documentation.
6. The application did not contain information showing property owners sharing a common border. Please include a parcel map with the owners and addresses of adjacent property noted
7. The application did not provide documentation of the content of the letters sent to property owners. Please include a copy of the letter. Also, please include the return receipts from the registered letters.
8. The "Public Meeting Notice" on Greene County letterhead was not dated or addressed. There was no additional information and I could not determine if it was included to document items 5 or 7. Please explain.
9. It was unclear from the minutes from the Board of Commissioners meeting if materials were distributed or if there were any concerns expressed at the public meeting. Please review .0536(c) (11) (D) and include additional information about the public meeting. For example, if there were no comments from the public or no materials distributed, it should be noted in the application.
10. The application did not provide a letter from the unit of local government have zoning jurisdiction over the site stating the proposal met the requirements of the local zoning ordinance, or that the site is not zoned. Please provide that letter.

Engineering Plan for C&DLF Facilities (15A NCAC 13B .0539)

11. The application should include an engineering report supporting the final cap design. Requirements are listed in .0539(d). The engineering report must include a discussion of the analytical methods used to evaluate the design, definition of the critical conditions evaluated and assumptions made, and a list of technical references used in the evaluation. The information and calculations should demonstrate that the proposed cover will be stable and safe during the post-closure period. You may include a copy of an engineering report from a previously approved plan to support your design if the design has not changed.

Construction Requirements for C&DLF Facilities [15A NCAC 13B .540]

15A NCAC 13B .0543 (b) (1) states standards must be established for the scheduling and documenting of closure of all C&DLF unit and design or the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this Section.

12. Please address the requirements for survey control and location coordinates which would be important for construction during closure.
13. Are there or will there be any erosion and sedimentation control measures? How does this meet the requirements listed in .0540(7).

Construction Quality Assurance for C&DLF Facilities (15A NCAC 13B .0541)

15A NCAC 13B .0543 (b) (1) states standards must be established for the scheduling and documenting of closure of all C&DLF unit and design or the cap system. Construction requirements for the cap system must incorporate requirements from Rules .0540 and .0541 of this Section.

14. Items 2.1 – 2.5 of the closure plan discuss the procedures and tests that will be used in the construction of the cap. The closure plan does not include a Construction Quality Assurance (CQA) plan as described in .0541 (b). The requirements of a CQA plan go beyond listing the tests and results. The responsibilities and authorities, inspection activities, sampling strategies and documentation that should be addressed in a CQA plan are needed in order to ensure that the work is done properly and to provide the data for CQA report to finalize the closure. [.0541(a) – (b)]
15. There was no mention of a CQA report after the cap construction is completed. The purpose and requirements for the CQA report are in .0541 (c). The closure plan should state what information will be included in the report and the certification of the report.

Operation Plan and Requirements for C&DLF Facilities (15A NCAC 13B .0542)

16. Please add cross sections to the phasing plan drawings. Please include projected waste disposal rates, cover, and airspace remaining.
17. These drawings are supposed to be consistent with the engineering plan. No engineering plan was provided in this submittal. When you revise your application, please insure they are consistent.
18. In many places, your Operation Plan simply repeats the requirements word-for-word from the Solid Waste Rules. Knowing the rules is good, however, the Operation Plan should also describe how you will maintain and operate the facility such that you will meet the requirements. For example, 6.e. describes the need for signs with the hours of operation, permit, etc. is almost exactly word-for-word as stated in .0542 (j) (5). Your operation plan should include your information on the days and times you are open to the public, etc.
19. The Operation Plan is poorly organized and difficult to follow. Most of the 1.1 Introduction should be shown in existing or new sections. For example, it would seem more appropriate to list the types of waste you will receive in the waste acceptance section. I cannot review the plan in its current form. Please review the requirements and rewrite the operation plan in a useable format.

Assessment of Corrective Measures (15A NCAC 13B .1635)

20. This letter does not include a review of the CAP. Mr. Zinith Barbee will provide a review of that document.

Closure and Post-Closure Requirement for MSWLF Facilities (15A NCAC 13B .1627) and Closure and Post-Closure Requirement for C&DLF Facilities (15A NCAC 13B .0543)

21. The cap system must be designed and constructed to have a permeability less than or equal to the soils underlying the landfill, or the permeability specified for the final cover in the effective permit, or a permeability no greater than 1.0×10^{-5} cm/sec, whichever is less. Please include a discussion of the basis for your design assumptions in the engineering report.
22. Item 2.2 is exactly the same as the first paragraph of Item 2.3 which follows it.
23. Post-settlement surface slopes were not addressed.
24. The plan states that native vegetation will be used as approved by the Erosion Control Plan. A plan was not included nor was any reference given to a plan.
25. All closure activities must be with 180 days. The first sentence in the third paragraph agrees with this. The first sentence in the first paragraph could be misinterpreted.
26. The closure plan did not include an estimate of the maximum inventory of wastes onsite over the active life of the landfill facility.
27. More detail is needed for the cost estimate of the closure activities. For example, in item 1 the unit cost for soil is \$9 per cubic yard versus \$4 in item 2. What makes the unit costs different? Provide basis for all the costs assumed.
28. Please include in the post-closure plan the use restrictions listed in .0543(f) (3) and the need for approval by the Division for a change in use.
29. Do you plan to mow the grass? Are there gates, roads, signs etc. that will need to be monitored and/or maintained? Please include in plan and estimate.
30. The description of monitoring activities should provide details. For example, what are the locations that will be sampled? What analyses will be run? Have these locations and analyses been approved by the Division? If so, include that information. This supporting information is needed in order to evaluate the post-closure cost estimate.
31. Please note that at the end of the post-closure care a professional engineer will need to certify that the post-closure care was completed in accordance with the post-closure plan. Unless he has been there the whole post-closure period, he will probably need documentation of the care to make his certification. Do you plan to keep records of the maintenance and monitoring activities in the landfill records? Will they be adequate for a PE certify? If so, please describe.
32. More detail is needed for the costs in the post-closure estimate similar to comment 24.

Financial Assurance Rule (15A NCAC 13B .1628)

33. The financial assurance test should be updated based on the Annual Financial Information Report for the fiscal year ended June 30, 2008. This request was made in a letter dated January 15, 2009, from Donald Herndon of our Compliance Branch to Greene County.

Due to the number of corrections needed throughout the document, I would suggest that you revise the entire submittal. Please note on the title page that it is a revised submittal. Two paper copies plus one electronic copy are needed. Please proofread your submittal carefully.

These comments are intended to expedite the review of the referenced application, and in no way do they restrict the Section's right to request additional information during the continuance of the technical review process. If you should have any questions regarding this matter please contact me at (919) 508-8525, or by email at pat.backus@ncmail.net.

Sincerely,



Patricia Backus, P.E.
Environmental Engineer

cc: Jimmie Woodie, MESCO
Dennis Shackelford, DWM
Ed Mussler, DWM
Ben Barnes, DWM
Zinith Barbee, DWM
Central files



North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary

SOLID WASTE SECTION

August 13, 2008

Mr. David Jones
Director
Greene County Public Works Department
P. O. Box 543
Snow Hill, North Carolina 28580

Subject: Completeness Determination for a
Construction and Demolition Landfill (CDLF) Unit on Top of a Closed MSWLF
Greene County CDLF
Permit No. 40-02, Greene County, Document ID Number 5444

Dear Mr. Jones:

On June 30, 2008, the Division of Waste Management (Division) received your permit application for continued operation entitled:

- *Permit Application for Continued Operation, Greene County Construction and Demolition Landfill Facility . Owner: Greene County, Walstonburg, North Carolina. Prepared by Municipal Engineering Services Co., P.A. (Municipal Engineering). Dated June 2008. Document ID Number 5063.*

The Division has performed a review of your application for a determination of completeness. Your application has been determined to be complete within the context of N.C.G.S. 130A-295.8(e). A determination of completeness means that the application includes required components, but does not mean that the components provide all the information that is required for the Division to make a decision on the application.

The next step is for the Division to review the submittal for compliance with the Solid Waste Management Rules (Rules), 15A NCAC 13B .0547(4). Under N.C.G.S. 150B-3, when an applicant makes a timely and sufficient application for insurance or renewal of a permit, the existing permit does not expire until a final decision on the application is made by the Division. Therefore, until the final decision is made, the Greene County Public Works Department is authorized to continue operating your CDLF Unit on Top of a Closed MSW Landfill in accordance with your most recent Solid Waste Permit , and the Rules, 15A NCAC 13B. The Greene County Public Works Department must also continue the groundwater assessment and/or correction program in accordance with Rules 15A NCAC 13B .1634 - .1637. Should you have any questions regarding this matter you may contact me at (919) 508-8542.

Sincerely,

Pat Backus, P.E.
Environmental Engineer II

cc: Jimmy D. Woodie, P.E., Municipal Engineering Ed Mussler, Permitting Branch Supervisor
Donna Wilson, Environmental Engineer Zinith Barbee, Hydrogeologist
Dennis Shackelford, Eastern District Supervisor Ben Barnes, Environmental Specialist
Central File

Chao, Ming-tai

From: Ritter, Christine
Sent: Monday, April 16, 2012 2:18 PM
To: Chao, Ming-tai
Subject: FW: Greene County C&DLF
Attachments: APPENDIX B - Greene CAP SAP.pdf

Hi Ming-

Jonathan Pfohl responded to my email (below), and it appears that they are already conducting Appendix II sampling in accordance with the approved SAP and CAP. To be sure, I verified that the Greene County SAP approved in the February 2010 CAP does include language regarding Appendix II sampling. I also verified that their September 2011 sampling results included Appendix II sampling, so I think they are correct and we should have what we need. Do you concur?
Christine

From: Jonathan Pfohl [<mailto:jpfohl@mesco.com>]
Sent: Monday, April 16, 2012 1:55 PM
To: Ritter, Christine; Wayne Sullivan; Mark Durway
Subject: Re: Greene County C&DLF

Hi Christine,

It appears there may be some confusion relating to this SAP. It appears that Appendix II monitoring has already been provided for in the SAP for this facility therefore MESCO contends a revision is unnecessary.

The latest SAP for this facility contained in Appendix B of the latest CAP (DIN:9670) dated 2/12/10 and approved on 2/16/10 (DIN:9671) already specifies Appendix II monitoring. (SAP as submitted/approved is attached here for your convenience).

The SAP has been followed ever since which includes annual Appendix II monitoring during the previous September 2010 & 2011 events.

If upon your re-review you still request a SAP revision please provide us details on how you want the information presented.

Unless we hear differently Greene County has provided sufficient documentation which satisfies the SWS requirements which will not delay issuance of the PTO.

Thank You,
Jonathan

On 4/13/2012 3:24 PM, Ritter, Christine wrote:

Hi Jonathan-

Per Ming's email (below), we are requesting Greene County revise the Groundwater and Surface Water Sampling and Analysis Plan for the Green County C&DLF to include annual Appendix II sampling for the groundwater monitoring wells included in the corrective action monitoring well network. In accordance with 13B NCAC .1634, all facilities undergoing corrective action are required to sample and analyze groundwater for all constituents identified in Appendix II of 40 CFR Part 258. It appears to have been an oversight that Appendix II sampling was not included in the original Corrective Action Plan which was developed and approved in February 2010. Zinith Barbee wrote a letter to Mr. David Jones, Public Works Director of Greene County dated October 29, 2010, requesting the SAP be revised to include Appendix II sampling. In conducting a historical file review, we do not have documentation that a revision to the SAP was made. Please make the requested revision to the Sampling & Analysis Plan so that we may proceed to issue the PTO for the facility.

If you have any questions, please contact me at (919) 707-8254.

Thank you,

Christine Ritter

From: Chao, Ming-tai
Sent: Thursday, April 05, 2012 9:59 AM
To: Jonathan Pfohl
Cc: Ritter, Christine; Wayne Sullivan
Subject: Greene County C&DLF

Hey Jonathan:

The 45-day public comment period for the draft PTO of Greene County C&DLF, permit # 40-02 ended on March 27, 2012. There is no comment received during the public comment period. I am waiting MESCO to submit the revision of the CAP and the Ground and Surfacewater Sampling and analysis Plan which shall incorporate the requests in the attached letter dated October 29, 2010. The PTO issuance will depend on the approval of the CAP and SAP. Please contact me or Christine Ritter (919-707-8254) if you have any question of this matter. Thanks.

Ming-Tai Chao, P.E.
Environmental Engineer
Permitting Branch, Solid Waste Section
Division of Waste Management
(Mailing Address)

**1646 Mail Service Center
Raleigh, NC 27699-1646**

(Street Address)
Green Square, 217 West Jones Street
Raleigh, NC 27603
Tel. 919-707-8251
ming.chao@ncdenr.gov
<http://portal.ncdenr.org/web/wm/sw>

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

--
Jonathan Pfohl
Municipal Engineering Services
PO Box 97
Garner NC 27529
Phone: (919) 772-5393
Fax: (919) 772-1176
Mobile (919) 696-1383



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Dexter R. Matthews

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

October 29, 2010

Mr. David Jones
Public Works Director
P. O. Box 543
130 S. Queen Street
Snow Hill, North Carolina 28580

Subject: Corrective Action Plan
Greene County Landfill
Construction and Demolition (C&D) Landfill Over Municipal Solid Waste (MSW)
Permit 40-02
Doc ID 12000

Dear Mr. Jones:

Following review of semi-annual sampling results for the Corrective Action Plan (CAP), the Solid Waste Section (SWS) determined that Greene County Landfill discontinued Appendix II monitoring without approval and is not sampling all wells and stations listed in the CAP. The SWS also reviewed a permit application, which references the CAP. Municipal Engineering Services Company, Inc (MESCO) submitted the CAP.

To date the SWS received one report for semi-annual sampling for the CAP. The report is dated August 10, 2010 (Doc ID 11337) for sampling one month after approval of the CAP. The SWS approved the CAP (Doc ID's 9670 and 9671) on February 16, 2010. In the report only results for Appendix I constituents are submitted. The CAP should be implemented in accordance with Regulation 15A NCAC 13B .1637. Corrective actions described in the CAP are selected remedies for groundwater contamination described in the ACM (Doc ID 8776). Remedies presented in the ACM should be in accordance with Regulations 15A NCAC 13B .1635 and 1636. In all the aforementioned regulations, monitoring for Appendix II constituents is specified.

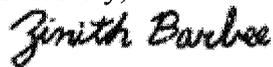
The SWS also determined that Greene County Landfill did not sample all groundwater monitoring wells and surfacewater sampling stations specified in the CAP. In the semi-annual report, entitled, "Monitored Natural Attenuation Semi-Annual Sampling" (Doc ID 11337) only MW-1R and MW-4 are listed. In the CAP, six (6) groundwater monitoring wells and two (2) surfacewater sampling stations are identified. See Appendix B, entitled "Groundwater and Surface Water Sampling and Analysis Plan". Included in the appendix is Table E-1, on which the wells and stations are listed. The wells are also itemized as part of the cost for the CAP. See

Section 8.0 entitled, "Financial Assurance Requirements". All aforementioned corrections in sampling and reporting should be shown in subsequent semi-annual sampling events.

The SWS reviewed a permit application for the Green County Landfill C&D Over MSW in accordance with Regulation 15A NCAC 13B .0547(4). The regulation addresses the CAP. Included in that review (Doc ID 10988) is comment on Greene County Landfill's proposal to increase landfill capacity. With increased capacity is potential for a larger source of contamination. Controlling sources of contaminants is specified in the CAP. See Section 2.3 entitled, "Source Control Measures" and Appendix C, entitled "Explosive Gas Control Plan For Greene County." In these sections, reliance on a "passive horizontal gas venting system around the perimeter of the landfill" is identified as a measure to control contamination at the source. The existing "gas venting system" along the landfill perimeter appears to be a Landfill Gas Monitoring Plan. Please note that landfill monitoring gas plans are now separately reviewed by the SWS hydrogeologists and some standards for landfill gas monitoring have changed. Because landfill gas monitoring is included in the CAP, possible changes to the monitoring plan should be considered when evaluating adequacy of the CAP after substantial modifications at the landfill.

All corrections in sampling and reporting should be reflected in subsequent semi-annual sampling reports. Substantial modifications in the landfill may require a revised CAP. If you have questions, please contact me at 919-508-8401 or zinith.barbee@ncdenr.gov.

Sincerely,



Zinith Barbee
Project Manager
Solid Waste Section

cc: Mark Poindexter	Field Operations Branch Supervisor
Jaclynne Drummond	SWS Compliance Hydrogeologist
Ben Barnes	SWS Environmental Specialist
Ed Mussler	SWS Permitting Branch Supervisor
Ming Chao	SWS Environmental Engineer
Christine Ritter	SWS Permitting Hydrogeologist
Madeline German	Municipal Engineering Services Co., P.A.
Central File	



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Dexter R. Matthews

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

February 16, 2019

Mr. David Jones
Public Works Director
Post Office Box 543
Snow Hill, North Carolina 28580

Subject: Final Corrective Action Plan
Greene County Landfill
Construction and Demolition Landfill atop MSW
Permit 40-02
Doc ID 9671

Dear Mr. Jones:

The final Corrective Action Plan (CAP) is approved. The Solid Waste Section (SWS) received an electronic copy of the final CAP proposed for the Greene County Landfill. Municipal Engineering Services Company, P.A. (MESCO) submitted the final CAP on February 12, 2010. The final CAP (Doc ID 9670) replaces the draft CAP (Doc ID 7358) and addresses groundwater contamination reported in the Assessment of Corrective Measures report (ACM), dated August 30, 2007 (Doc ID 8776). MESCO proposed implementation of the CAP "within 30 days of CAP approval".

Corrective actions described in the CAP are the selected remedies for groundwater contamination described in the ACM. They should be implemented in accordance with Regulations 15A NCAC 13B .1637 and 15A NCAC 13B .0547. Contingency plans presented in the CAP should be implemented if the selected remedies fail. Alternative corrective action should be proposed if the contingency plan fails.

If you have questions, please contact me at 919-508-8401 or zinith.barbee@ncdenr.gov.

Sincerely,

Zinith Barbee
Project Manager
Solid Waste Section

cc: Mark Poindexter	Field Operations Supervisor
Ed Mussler	Solid Waste Section
Ming-Tai Chao	SWS
Donald Herndon	SWS
Mark Brown	Municipal Engineering Services Co., P.A.
Central File	

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SECTION 1.0

**OPERATION
PLAN**

Commissioners
Bennie Heath – Chairman
Jack Edmondson – Vice Chairman
Denny Garner
Jerry Jones
James T. Shackelford, Jr.

County Manager
Don Davenport

Finance Officer
Shawna Wooten



GREENE COUNTY
A Place To Grow. The Way To Live.

September 8, 2009

To: North Carolina Solid Waste Management

From: David Jones

The purpose for this application is to continue the operation of our existing Construction and Demolition (C&D) Landfill, which is on top of a Municipal Solid Waste (MSW) Landfill. The air space that is available on top of the old MSW Landfill for the disposal of the C&D waste is very valuable. Utilizing the space on top of the MSW Landfill prevents the need to develop another area within our landfill property or on other property. The landfill property can be used for addition to our MSW Landfill. Also, if we move to another site, we are creating another brown field that is not necessary. Furthermore, we do not have to use valuable MSW landfill space to dispose of C&D waste. The space on top of the closed landfill is available for several years, and we need to be able to continue to utilize this space.

A handwritten signature in black ink, appearing to read 'D. Jones', is written over the typed name. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Sincerely,
David Jones

Public Works Director For Greene County

229 Kingold Blvd., Suite D • Snow Hill, NC 28580 • (252) 747-3446 • FAX (252) 747-3884
www.co.greene.nc.us

The mission of Greene County Government is to serve and improve the lives of all citizens by providing high-quality, cost-effective services in an open, professional and ethical environment

1.1 Introduction

The County will continue to operate a Construction and Demolition Landfill (C&DLF) within the permitted boundaries and upon the closed unlined municipal solid waste (MSW) landfill. The unlined MSW area opened in 1982 and stopped receiving waste prior to October 9, 1991 and was certified closed on August 31, 1998. The closed MSW area has a minimum of two feet of final cover.

In addition to the C&DLF, this facility has a Closed MSW Landfill, Used/Scrap Tire Collection Area, White Goods/Scrap Metal Area, Small Type-1 Compost Area, Temporary Storm Debris Area, and an E-Wastes Collection Area. A copy of contact information on all contract haulers of recyclables shall be placed in the operating record.

The County will implement a program at the landfill for detecting and preventing the disposal of hazardous and liquid wastes. The program consists of random inspection of incoming loads at a minimum of 1% of the weekly traffic. Landfill personnel will be trained to recognize hazardous and liquid wastes. Records will be kept on the training and the inspections. See Appendix C for the detailed plan.

The County will monitor for explosive gases at landfill structures and the perimeter of the landfill. The concentration of methane gases generated by the landfill cannot exceed 25 percent of the lower explosive limit for methane in the structures, and it cannot exceed 100 percent of the lower explosive limit for methane at the landfill property boundary. If methane gas is found to exceed the acceptable limits at either the property boundary or landfill structures, it is the County's responsibility to do the following:

1. Immediately take all necessary steps to ensure protection of human health (i.e. no smoking, etc.) temporarily abandon the structure and notify the Division of Waste Management (Division).
2. Within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and
3. Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the Division that the plan has been implemented. The plan will describe the nature and extent of the problem and the proposed remedy.

See Section 1.4 for the Explosive Gas Control Plan.

Off-site and on-site erosion will be controlled through erosion control structures and devices. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within 30 working days or 120 calendar days after completion of any phase of landfill development.

The County will record and retain at the landfill an operating record of the following information:

- (1) Inspection records, waste determination records, and training procedures;
- (2) Amounts by weight of solid waste received at the landfill;
- (3) Gas monitoring results and any remediation plans;
- (4) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface and groundwater monitoring;
- (5) Any monitoring, testing or analytical data required for closure or post-closure;
- (6) Any cost estimates and financial assurance documentation.

All information contained in the operating record will be furnished upon request to the Division or be made available at all reasonable times for inspection by the Division.

Ground water and surface water will be sampled and analyzed according to 40 CFR, Part 258, Appendix I detection monitoring requirements. The monitoring frequency for all Appendix I detection monitoring constituents will be at least semiannual during the life of the facility (including closure) and the post-closure period. A minimum of four independent samples from each well (background and downgradient) will be collected and analyzed for the Appendix I constituents during the first semiannual sampling event. At least one sample from each well (background and downgradient) will be collected and analyzed during subsequent semiannual sampling events. See Section 1.3 for the Ground water and Surface water Sampling and Analysis Plan.

If the County determines that there is a statistically significant increase over background for one or more of the constituents listed in Appendix I at any monitoring well at the relevant point of compliance, the County will, within 14 days of the finding, report to the Division and place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels. The County will establish an assessment monitoring program within 90 days. The County may demonstrate that a source other than the landfill caused the contamination or that the statistically significant increase resulted from an error in sampling, analysis, statistical evaluation, or natural variation in ground-water quality. A report documenting these demonstrations will be certified by a Licensed Geologist or Professional Engineer and approved by the Division. A copy of this report will be placed in the operating record. If a successful demonstration is made, documented, and approved by the Division, the County may continue detection monitoring. If after 90 days, a successful demonstration is not made, the County will initiate an assessment monitoring program.

1.2 Operational Requirements

1. Waste Acceptance and Disposal Requirements

- a. The C&DLF will only accept those solid wastes which it is permitted to receive. The County will notify the Division within 24 hours of attempted disposal of any waste the landfill is not permitted to receive.
- b. Asbestos waste will be managed in accordance with 40 CFR 61. The regulated asbestos waste will be covered immediately with soil in a manner that will not cause airborne conditions and will be disposed of separate and apart from other solid waste, as:
 - i. in a defined isolated area within the footprint of the landfill, or
 - ii. in an area not contiguous with other disposal areas. Separate areas will be designated so that asbestos will not be exposed by future land-disturbing activities.
- c. Wastewater treatment sludges may be accepted, with the approval of the Division, either as a soil conditioner incorporated into or applied onto vegetative growth layer. The wastewater treatment sludge will not be applied at greater than agronomic rates nor to a depth greater than six inches;
- d. Asphalt in accordance with G.S. 130-294(m) will be accepted;
- e. Inert debris from any source that is defined as solid waste which consists solely of material that is virtually inert, such as brick, concrete, rock and clean soil will be accepted;
- f. Construction materials, that could or would be part of any construction, remodeling, repair or demolition of pavement, buildings or other structures, from solid waste that is generated by mobile or modular home manufacturers and asphalt shingle manufacturers in Greene County. The waste must be source separated at the manufacturing site and must exclude municipal solid waste, hazardous wastes, and other wastes prohibited from disposal in a C&DLF. It must be transported to Greene County C&DLF in a shipment or container that consists solely of the separated waste to be disposed of. Greene County C&DLF will not accept this waste if it has not been separated or transported as specified.

- g. Wooden pallets generated only from C&D activities.
- h. The following wastes are prohibited from disposal at the C&DLF:
 - i. Containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained therein.
 - ii. Garbage as defined in G.S. 130A-290(a)(7).
 - iii. Hazardous waste as defined in G.S. 130A-290(a)(8), to also include hazardous waste from conditionally exempt small quantity generators.
 - iv. Industrial solid waste unless a demonstration has been made and approved by the Division that the landfill meets the requirements of Rule .0503(2)(d)(ii)(A).
 - v. Liquid wastes.
 - vi. Medical waste as defined in G.S. 130A-290(a)(18)
 - vii. Municipal solid waste as defined in G.S. 130A-290(a)(18a)
 - viii. Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761
 - ix. Radioactive waste as defined in G.S. 104E-5(14)
 - x. Septage as defined in G.S. 130A-290(a)(32)
 - xi. Sludge as defined in G.S. 130A-290(a)(34)
 - xii. Special waste as defined in G.S. 130A-290(a)(40)
 - xiii. White goods as defined in G.S. 130A-290(a)(44)
 - xiv. Yard trash as defined in G.S. 130A-290(a)(45) , shall not be disposed in the landfill area. However, yard trash, along with land-clearing debris and wooden pallets(as defined below), may be accepted for processing in the Temporary Storm Debris area(when it is permitted for operation) and/or the Small Type-1 Composting Area as shown on the Existing Conditions maps in the Facility and the Engineering/Operation drawings.
 - xv. Wooden Pallets generated by means other than C&D activities
- i. The following waste will not be received if separate from C&DLF waste: lamps or light bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures: thermostats and light switches; batteries including but not limited to those from exit and emergency lights and smoke detectors; lead pipes; lead roof flashing; transformers; capacitors; and copper chrome arsenate (CCA) and creosote treated woods.
- j. Waste accepted for disposal in the C&DLF unit shall be readily identifiable as C&D waste and must not have been shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained except in the case where the waste has come from a permitted recycling and reuse facility.
- k. The County will not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:

- i. Prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste.
 - ii. Requires generators or collectors of C&D waste to recycle that type or form of C&D waste.
- l. Any recyclables received on site including yard wastes, white goods, **scrap metal, used/scrap tires**, etc., shall be segregated and stockpiled in designated areas within the permitted landfill property.

The white goods collection area shall provide for the proper removal of chlorofluorocarbon refrigerants by well-trained personnel. **The area is divided up into a freon removal area and a storage area for the white goods and scrap metals. These areas are located on existing ground. The size of this area varies depending on the amount of white goods received, up to the maximum amount stored.** The estimated waste amounts, from past records, is approximately 121 tons a month. The maximum amount of white goods that may be stored on site is 5 tons.

The used/scrap tire collection area consists of one(1) or more trailers. As each trailer is filled, it is hauled away and an empty trailer replaces it.

All other stockpiled recyclables will be removed from the site as needed. The scales will be used to weigh the amount of recyclables and will be documented in the operating record.

- m. Electronic Recyclables shall be handled according to SL 2010-67(SB 887). The electronic wastes shall be stored in covered containers or in containers in a covered structure.
- n. Contact information of contract haulers shall be placed in the operating record.

2. Cover material requirements.

- a. Except as in Subparagraph (c), the County must cover the solid waste with six inches of earthen material when the waste disposal area exceeds one-half acre and at least once weekly. Cover must be placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter and scavenging. A notation of the date and time of the cover placement must be recorded in the operating record, as specified in Paragraph 10 in this Section.
- b. Except as in Subparagraph (c), areas which will not have additional wastes placed on them for three months or more, but where final termination of disposal operations has not occurred, will be covered and stabilized with vegetative ground cover or other stabilizing material.
- c. Alternative material or an alternative thickness of cover may be used, if the County demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment, and is approved by the Division.

3. Spreading and compacting requirements.

- a. C&DLF units will restrict solid waste to the smallest area feasible.
- b. Solid waste will be compacted as densely as practical into cells.
- c. Fencing and/or diking will be provided within the area to confine solid waste which is subject to be blown by the wind. At the conclusion of each operating day, all windblown material resulting from the operation will be collected and disposed of by the County.

4. Disease vector control
 - a. The County will prevent or control on-site populations of disease vectors using techniques appropriate for protection of human health and the environment.
 - b. "Disease vectors" means any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans.

5. Air Criteria and Fire Control
 - a. The County will ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the U.S. EPA Administrator pursuant to Section 110 of the Clean Air Act, as amended.
 - b. Open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited at all C&DLF facilities. *Prior to any burning a request will be sent to the Division for review and approval. In addition, the Division of Air Quality and local fire department must approve the activity prior to burning.* The Division will determine the burning to be approved if it is one of two types of burning previously referenced. A notation of the date of approval and the name of the Division personnel who approved the burning must be included in the operating record.
 - c. Equipment will be provided to control accidental fires. In the event of an emergency the operator(s) will call 911. Castoria Voluntary Fire Department is located 2 miles away and the nearest fire hydrant is ¼ mile away. Fire extinguishers are located in all buildings and on all equipment. Dirt piles are also on site to use in emergency situations.
 - d. Fires and explosions that occur at the C&DLF require verbal notice to the Division within 24 hours and written notification within 15 days. Written notification must include the suspected cause of fire or explosion, the response taken to manage the incident, and the action(s) to be taken to prevent the future occurrence of fire or explosion.

6. Access and safety requirements
 - a. The C&DLF will be adequately secured by means of gates, chains, beams, fences and other security measures approved by the Division to prevent unauthorized entry.
 - b. An attendant will be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
 - c. The access roads to the site and monitoring locations will be of all-weather construction and maintained in good condition.
 - d. Dust control measures will be implemented when necessary. If dust problems should arise, the County will use any reasonable means necessary to reduce it. At a minimum the County will spray water on necessary areas.
 - e. Signs providing information on tipping or disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information will be posted at the site entrance.
 - f. Signs will be posted stating that no hazardous or liquid waste can be received.
 - g. Traffic signs or markers will be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.

- h. The removal of solid waste from the C&DLF will be prohibited unless the County has included in its operational plan a recycling program which has been approved by the Division. The general public is prohibited from removal activities on the working face.
7. Erosion and Sedimentation Control Requirements
- a. Adequate sediment control measures (structures or devices), will be utilized to prevent silt from leaving the landfill.
 - b. Adequate sediment control measures (structures or devices), will be utilized to prevent excessive on-site erosion.
 - c. Provisions for a vegetative ground cover sufficient to restrain erosion will be accomplished within **30 working days** or **120 calendar days** upon completion of any phase of landfill development.
8. Drainage Control and Water Protection Requirements
- a. Surface water will be diverted from the operational area and will not be impounded over waste.
 - b. Solid waste will not be disposed of in water.
 - c. Leachate will be contained on site and properly treated prior to discharge.
 - d. The landfill will not:
 - (i) Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System (NPDES) requirements pursuant to Section 402.
 - (ii) Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirements of an area-wide or state-wide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.
 - e. The County will inspect the exterior slopes of the landfill at least weekly to determine if there are any breakouts of leachate in the slopes. If any are discovered, they will be contained immediately to assure that they will not leave the site. The containment can consist but not be limited to an earthen berm, sand bags, erosion control logs and/or anything that will contain the leachate on the slope.

The repair of the breakout will require excavating into the cover soil on the slope down to the waste and into the waste to determine what is causing the leachate to come to the surface. Normally it is another layer of soil that has been used as cover and the leachate is flowing along that layer to the slope and surfacing on the slope. The lower layer of cover needs to be removed at the breakout so that the leachate that is flowing along this cover has a point where it will go vertically into the landfill instead of flowing along the soil boundary that was once either daily cover or an intermediate cover.

Once this soil layer has been breached, the excavation can be filled back with stone, clean waste or any material, other than soil, that will allow the leachate to flow vertically instead of horizontally. Once the excavation has been filled with this material,

the surface can be cover with soil so that surface water does not intrude into the excavation. Vegetative cover will be reestablished over the excavated area.

9. Survey for Compliance

Within 60 days of a permittee's receipt of the Division's written request, the permittee will have a survey conducted of active and/or closed portions of the unit(s) at the facility in order to determine whether operations are being conducted in accordance with the approved design and operation plans. The permittee must report the results of the survey, including a map produced by the survey, to the Division within 90 days of receipt of the Division's request.

- a. A survey shall be required by the Division:
 - (i) If there is reason to believe that the operations are being conducted in a manner that deviates from the plan listed in the effective permit, or
 - (ii) As verification that operations are being conducted in accordance with the plan listed in the effective permit.
- b. Any survey pursuant to this Paragraph must be performed by a professional land surveyor duly authorized under North Carolina law to conduct such activities.

10. Record keeping Requirements

- a. The County will record and retain at the facility, or an alternative location near the facility approved by the Division, in an operating record the following information as it becomes available.
 - (i) Inspection records, waste determination records, and training procedures;
 - (ii) Amounts by weight of solid waste received at the landfill to include source of generation.
 - (iii) Any demonstration, certification, findings, monitoring, testing or analytical data required for surface water, ground water and gas monitoring;
 - (iv) Any monitoring, testing, or analytical data required for closure or post-closure;
 - (v) Any cost estimates and financial assurance documentation;
 - (vi) Notation of date and time of placement of cover material;
 - (vii) All audit records, compliance records and inspection reports;
 - (viii) Notation of approval date and the name of the Division personnel who approved the type of the open burning; and
 - (ix) Approved monitoring plan and corrective action plans.
- b. All information contained in the operating record will be furnished to the Division according to the permit or upon request, or be made available for inspection by the Division.
- c. The operating record will also include a copy of the approved operation plan and all required permits.

1.3 Ground Water and Surface Water Sampling and Analysis Plan

Introduction

Objective

The objective of this Groundwater and Surface water Sampling and Analysis Plan (SAP) is to provide clear guidelines and procedures for field and laboratory personnel when collecting and analyzing groundwater and surface water samples. This plan is an update that supersedes the November 1995 SAP for the Greene County C&D landfill on top of the municipal solid waste landfill (MSWLF). The sampling procedures outlined in this SAP are guidelines by which sampling will be performed. Deviation from the procedures may be warranted depending on facility conditions or unforeseen sampling variables. Alternative sampling procedures must conform to the guidance document "Solid Waste Section Guidelines for Groundwater, Soil, and Surface Water Sampling".

All groundwater and surface water monitoring points shall be sampled semi-annually for the constituents listed in 40 CFR Part 258 Appendix I and Appendix II. In addition to the Appendix I and Appendix II constituents, monitoring wells MW-1R and MW-4 will be sampled for the following suite of Monitored Natural Attenuation (MNA) parameters.

MNA Performance Parameters		
Parameter	Analysis Type	Analytical Method
Dissolved Oxygen (DO)	Field Reading	Field Instrument
pH	Field Reading	Multi-parameter Field Instrument w/ flow-through cell
Oxidation-Reduction Potential (ORP)	Field Reading	Multi-parameter Field Instrument w/ flow-through cell
Turbidity	Field Reading	Field Instrument
Conductivity	Field Reading	Multi-parameter Field Instrument w/ flow-through cell
Temperature	Field Reading	Multi-parameter Field Instrument w/ flow-through cell
Dissolved CO ₂	Field Reading	Field Instrument
Alkalinity (Total as CaCO ₃)*	Laboratory/Field*	EPA 310.2
Chloride*	Laboratory/Field*	SM 4500-CLB
Iron	Laboratory	SM3111B
Nitrate*	Laboratory/Field*	EPA 353.2 / SM 2320B
Sulfate*	Laboratory/Field*	EPA 375.4 / SM 4500-SO4E
Sulfide*	Laboratory/Field*	EPA 376.1 or SM 4500SE
TOC/BOD/COD	Laboratory	EPA 415.1 / EPA 405.1 / EPA 410.1
Methane	Laboratory	RSK 175
Ethane, Ethene	Laboratory	RSK 175
Hydrogen	Laboratory	AM19GA
Volatile Fatty Acids	Laboratory	AM23G

*For budgetary considerations these analyses may be performed in the field using Hach® brand color wheel test kits.

Water Quality Monitoring Summary

The nature of groundwater flow, geology, location of creeks, and close proximity of several drainage features will require extensive monitoring for early detection of a release. The monitoring plan includes sampling six (6) monitoring wells (MW-1R, MW-4, MW-5, MW-6, MW-7 and MW-8) and two (2) surface water monitoring points.

Monitoring well MW-1R, located southwest and upgradient of the landfill, will serve as the background well. MW-4, located near the northeastern corner of the landfill unit serves as a downgradient well. MW-5 serves as a downgradient well located east of the central portion of the landfill. MW-6 is a downgradient monitoring well located southeast of the landfill unit. MW-7 was installed northeast of the unit in June 2007 approximately 240 feet east of the waste limit, just inside the relevant point of compliance (250 feet from the waste limit). MW-8 was also installed in June 2007 farther northeast of the unit just inside the relevant point of compliance. Surface water sampling points are located off site on the tributary of Sandy Run.

Assessment Monitoring

Assessment monitoring, consisting of collecting and analyzing groundwater samples for the Appendix I and Appendix II list of constituents will be performed on the background well (MW-1R) and the compliance wells

(MW-4, MW-5, MW-6, MW-7 and MW-8). In addition field parameters including dissolved oxygen (DO), oxidation reduction potential (ORP), pH, temperature, turbidity, and conductivity will also be collected.

Sampling Equipment

Groundwater purging and sampling will be performed using a submersible pump and/or disposable polyethylene bailers. The following procedure will be used to decontaminate the submersible pump:

1. Phosphate-free detergent & de-ionized or distilled water rinse.
2. De-ionized or distilled water rinse.
3. Isopropyl alcohol (isopropanol) rinse.
4. De-ionized or distilled water rinse.

A new bailer will be used to sample each individual well. *Under no circumstance will a disposable bailer used to sample a given well be used to sample any remaining well.*

At least one (1) equipment blank will be collected during pump decontamination procedures to ensure that cross-contamination has not occurred as a result of the decontamination process. The standard equipment necessary to conduct sampling for each well consists of:

- Sample containers (including trip blanks and equipment blanks)
- Wide-mouth container
- Bailing twine
- Disposable latex/nitrile gloves
- Temperature/pH/ORP/conductivity indicator
- Electronic water level indicator
- Transport or storage coolers with ice.

All equipment subject to damage and contamination will be transported in sealed, plastic bags or storage containers. The water level indicator will be decontaminated in accordance with Steps 2 and 3 described above prior to placement in a clean plastic bag or storage container.

Appendix I and Appendix II Sample Containers

Groundwater and surface water samples will be collected for the various analyses in the appropriate laboratory-supplied containers.

- Each sample container will be clearly labeled providing the following information: site name, county location, sample identification number, parameters to be analyzed, preservative added, date and time of sampling, and initials of the sampler.
- Samples to be analyzed for VOCs will be collected first in three 40-ml glass vials with Teflon septa caps. The sample vials will be completely filled to create zero headspace in the vials.
- Samples to be analyzed for inorganic constituents will be collected second in a quart/1-liter polyethylene container.
- Samples to be analyzed for the remaining target analytes will be collected in the appropriate laboratory-supplied containers.

All sample containers will be obtained from an independent laboratory in a sterilized condition and with the appropriate, method-specific preservative. Care will be taken by the field technician to not allow the preservative to wash out of the sample containers during sampling.

MNA Sampling Containers

Groundwater samples to be analyzed for MNA performance parameters will be collected into the container types listed in the table below.

MNA Parameter	Volume	Bottle Type	Preservative
Alkalinity	250 mL	Plastic	none; cool to 4°C
Chloride	125 mL	Plastic	none; cool to 4°C
TOC/COD	250 mL	Glass	Sulfuric acid (H ₂ SO ₄)
BOD	500 mL	Polyethylene	none; cool to 4°C
Iron	125 mL	Plastic	Nitric acid (HNO ₃)
Nitrate	125 mL	Plastic	Sulfuric acid (H ₂ SO ₄)
Sulfate	125 mL	Plastic	none; cool to 4°C
Sulfide	250 mL	Glass	Sodium hydroxide (NaOH)
Methane/Ethane/Ethene	125 mL	Plastic	none; cool to 4°C
Hydrogen	-	-	proprietary lab sampler
Volatile Fatty Acids	40 mL	Glass	Hydrochloric Acid (HCl)

Sampling

Wells will be sampled from upgradient to downgradient; or when previous analytical data is available, from least to greatest contamination. This procedure is required to limit the potential of cross contamination between sampling points.

A clean sheet of plastic will be placed around the well to provide a clean surface for sampling equipment. The total well depth read from the well tag and the measured depth to water, determined using the water level indicator, will be used to compute the depth of water in the well. The total well depth will be measured and compared to the depth indicated on the well tag as a check for silt buildup or blockage at depth.

All meters used to monitor purge parameters will be calibrated immediately prior to purging and sampling, and those readings recorded in a field logbook. Entries will always include pre- and post- calibration readings as well as the model and serial number of the equipment and the date, time, and person performing the calibration(s). Two standards, which bracket the average or suspected measurements for pH and specific conductance, will be used at the site. Since natural waters (including those impacted by environmental contaminants) tend to have pH values less than 7.0, pH buffers of 4.0 and 7.0 will typically be used for instrument calibration.

Disposable nitrile gloves will be worn by the field technician during sampling to minimize the risk of personal exposure to potentially harmful chemical substances and to minimize the risk of sample cross-contamination. Fresh pairs of nitrile gloves will be worn during each purge and sampling event. The groundwater samples will be transferred from the bailers into method-specific and appropriately preserved containers and placed into a clean cooler containing ice to chill the samples to a temperature of approximately 4°C.

Indicator parameters such as pH, temperature and specific conductance will be measured during purging as an indication that groundwater representative of the formation surrounding a given well is being sampled. Purging is considered complete when at least three well volumes have been purged and indicator parameters have stabilized such that three successive readings vary by no more than 10%. Purging may need to be continued beyond five well volumes if indicator parameters have not stabilized. All information will be recorded on a field data sheet or in a field logbook with copies submitted to the Division of Waste Management with the analytical results.

Purging

Each well will be purged of approximately three (3) to five (5) volumes of standing water and allowed to settle prior to collection of groundwater samples. If the well should go dry and not recharge before the requisite well volumes are removed, the well will be allowed to recharge and a sample will be collected within 24 hours of the initial purging. The amount of standing water will be calculated by first subtracting the depth-to-water from total well depth.

After determination of the amount of water to be purged from a given well, the equipment necessary for purging will be assembled at the well. The disposable bailer will be maintained in a stable, upright position while the upper portion of the plastic wrapping will be pulled away to expose only the eyelet used for

securing twine to the bailer. After the twine has been secured to the bailer with gloved hands, the bailer will be suspended as the remaining plastic is removed. The bailer will be lowered slowly into the well until the bailer contacts groundwater. The bailer twine will then be cut to an adequate length and secured to prevent loss of the bailer in the well. At no time during purging will the bailer twine be allowed to touch the ground. In order to not allow the twine to touch the ground during purging, the twine will be collected when raising the bailer either by loops gathered in one hand or by alternating hand-to-hand as the bailer is pulled from the well. When purging deep wells (in excess of 40 feet), the ground and the well head may be covered with a clean plastic bag or sheet of plastic with a slit cut to allow the plastic to slide over the well head. This will be a separate sheet of plastic from the one used for the sampling equipment.

Groundwater Sample Collection

The bailer will be lowered slowly into the well to avoid volatilization of any dissolved-phase compounds that may be present in the groundwater. Once full, the bailer will be retrieved and containers filled by emptying the water through the hole at the bottom of the bailer. Glass 40-mL vials for VOC analyses will be filled in such a manner as to produce zero headspace in the vials. Polyethylene containers for metals analyses will be filled and sealed with the cap, leaving about ½-inch of airspace at the top. In addition to collecting the samples, water will be collected in the wide-mouth container for pH, temperature, and conductivity measurements. Upon completion of sampling, all groundwater samples, including equipment and trip blanks, will be placed in labeled and sealed plastic bags and stored in ice-filled coolers to chill the samples to 4°C pending transport to an NCDENR-certified analytical laboratory. Contaminated nitrile gloves and twine will be discarded.

Surface water Sample Collection

Surface water sampling will be taken with given consideration to minimize turbulence and aeration. As during groundwater sampling, surface water samples will be collected by a field technician wearing disposable gloves. Containers will be dipped at sampling location points by gently dipping the sample container into surface water and allowing surface water to flow over the mouth of container so as not to displace any preservative within the sample container. If there is little current movement, the container will be moved slowly through the water laterally. During times of low water, if the water is not deep enough to allow filling of sample containers, an appropriately decontaminated sampling cup will be used to retrieve the sample. All containers will be treated in the same manner as the groundwater samples. The samples will be sealed in labeled, plastic bags, and stored in an ice-filled cooler to chill the samples to 4°C pending transport to an NCDENR-certified analytical laboratory.

Chain of Custody

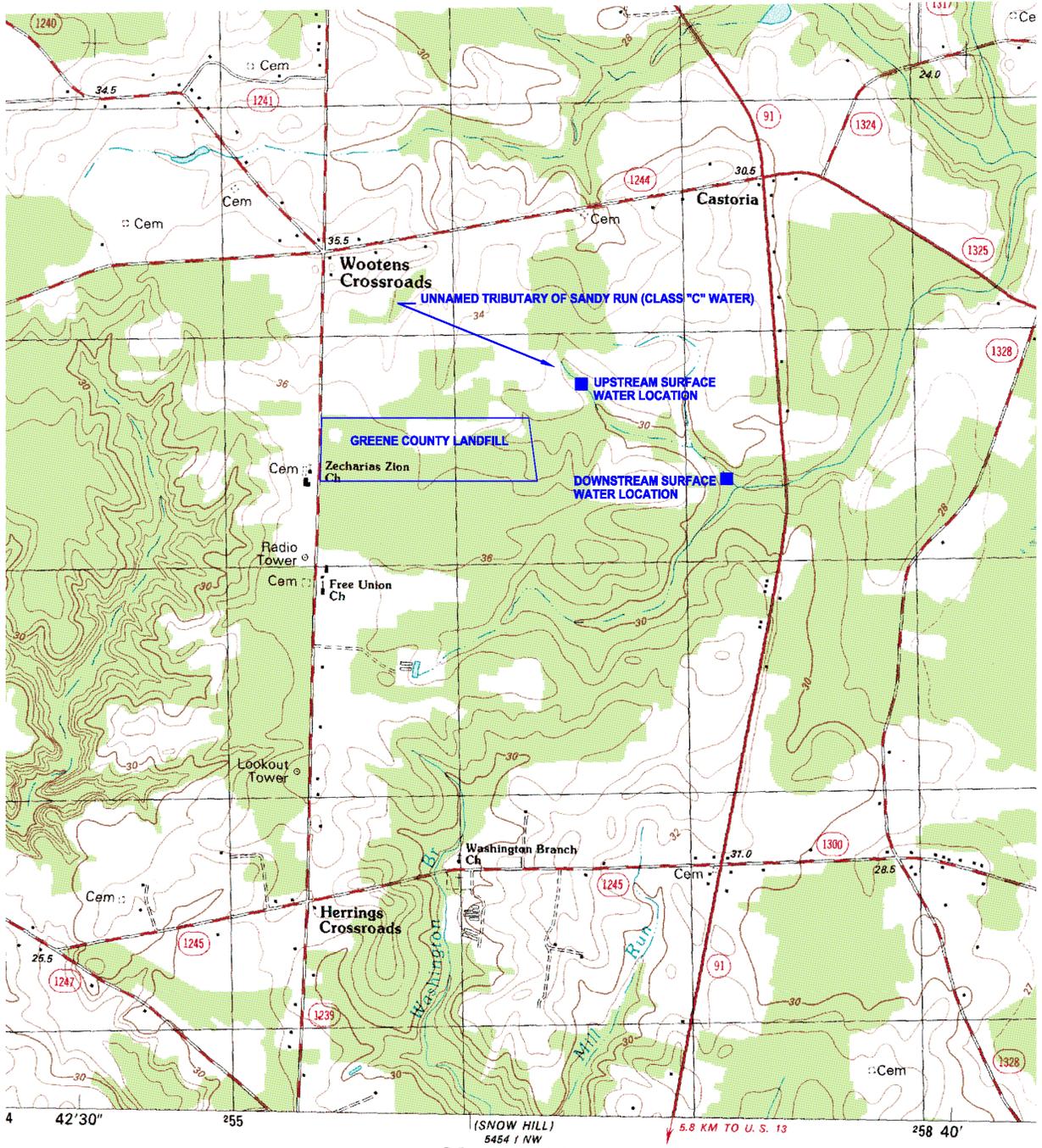
Chain-of-custody forms will be used to document the handling of all samples collected and listing all individuals who have taken possession of a given set of samples, including field personnel, laboratory couriers, and laboratory personnel. Trip blanks, equipment blanks, and sample containers will all travel and be stored together. Trip blanks will remain in the condition they are received from the laboratory and will not be opened or tampered with during the sampling. A chain-of-custody record will be completed for each day's samples, indicating the date and time, sample location, sample matrix (soil, water, etc.), and laboratory analyses to be conducted.

Analysis

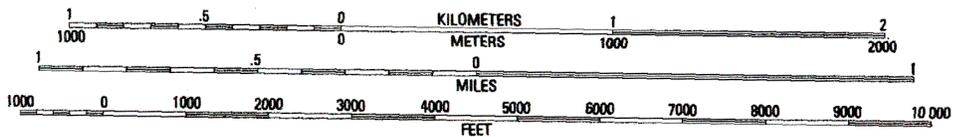
When the water samples reach the laboratory, they will be transferred to a sample custodian who will sign the chain of custody documentation as receipt of the samples. Internal control of the water samples in the laboratory will be in accordance with QA/QC procedures for the laboratory. Copies of QA/QC manuals for approved laboratories are on file at the Division of Waste Management.

Groundwater and surface water will be analyzed for the Appendix I and Appendix II list of analyte constituents. QA/QC procedures utilized during the testing will be in conformance with laboratory QA/QC manual. Monitoring wells MW-1R and MW-4 will be sampled for the Appendix I and Appendix II list **constituents** and the aforementioned MNA performance parameters.

SURFACE WATER SAMPLING LOCATIONS USGS WALSTONBURG QUADRANGLE



SCALE 1:24 000



ORTH
RECT

CONTOUR INTERVAL 2 METERS
SUPPLEMENTARY CONTOUR INTERVAL 1 METER
DASHED SUPPLEMENTARY CONTOURS ARE APPROXIMATE
NATIONAL GEODETIC VERTICAL DATUM OF 1929
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
OTHER ELEVATIONS SHOWN TO THE NEAREST 0.5 METER

1.4 Explosive Gas Control Plan

Quarterly, the County Landfill will monitor the explosive gas at the landfill structures, existing methane monitoring probes, and at/near the landfill boundary. The permanent probes consist of a plastic stand pipe similar to a piezometer used for groundwater detection. A typical permanent methane probe is detailed in the operation drawings.

The existing permanent methane probes are surrounding the Closed MSW Landfill Limits. The location and spacing of the methane probes is somewhat arbitrary. The locations were determined by the relationship of solid waste with property lines and landfill structures. The spacing of the monitoring probes is between 200 and 400 feet. The migration of methane gas is induced by pressure gradients. The methane will move from areas of high pressure to those of low pressure following the path of least resistance. The methane will migrate vertically until it reaches the landfill cap, where it will begin to flow horizontally. This occurs until it finds a pathway out, either by the installed methane collection trenches or migration through the permeable *in situ* soils. Since methane is lighter than air, it wants to escape into the atmosphere. It has been our experience that whenever gas is migrating no matter what the spacing or depth of the monitoring probes, the gas will fill the void created by the monitoring point and an explosive meter will monitor the level. The various depths of the monitoring probes are to ensure a stable monitoring point. The only time a shallow monitoring point has not worked is in a very heavy, impermeable clay layer that acts as a seal to the migration of the gas. The permanent probes are surrounding the Closed MSW Landfill Limits.

The gas can be detected by use of an instrument that reports the percent of lower explosive limit. The instrument being used is the Gas Tech GP 204.

Based on current conditions, there are thirteen(13) existing monitoring points. Quarterly, a County employee will visit each monitoring point. The monitoring points consist of all methane probes. Using the detection instrument, he will determine if methane gas has filled the probes. If the probe is near the property line and methane gas is detected at or beyond the lower explosive limit (100% LEL), it must then be determined if the gas is migrating across the landfill boundary. If the probe is on the boundary or methane gas has migrated beyond the boundary , a remediation plan must be completed by Greene County.

Other points of monitoring will be the landfill structures. Each structure will be monitored for methane using the following methods:

1. All crawl spaces will be monitored;
2. All corners in the structure will be monitored;
3. Any holes, cracks and pipes through the foundation will be monitored

If methane gas is detected beyond 25% of its lower explosive limit in any structure, check the calibration of the monitor and resample. If the reading is still above 25%, evacuate the building and try to find the source of gas. If the source is found try to remove the source. If this fails a remediation plan is stated in the operational requirements.

1.5 Electronic Waste Plan

The County will collect electronic waste to be recycled according to State Law SL 2010-67(SB 887). The County will store all electronic recyclables in the Electronic Recyclables Area as indicated by signage at the Facility and as shown on the Facility, and Engineering/Operation Plans. The electronic recyclables will be stored in Gaylord boxes, in a covered shelter. The electronic recyclables will be hauled as necessary. Contact information of all contracted haulers will be placed in the operating record.

1.6 Small Type-1 Composting Plan

The County will operate a Small Type-1 Compost Facility. The County will process or store less than 6,000 cubic yards of material per quarter, **in an area less than 2 acres in size on existing ground**. The County will meet the following conditions:

- A) The County will notify the Solid Waste Section prior to operation and on an annual basis as to:
 - i) Located at Greene County Construction and Demolition Landfill Facility, 105 Landfill Road, Walstonburg, NC 27888
 - ii) The Operator is David Jones, Pubic Works Director, located at 105 Landfill Road, Walstonburg, NC 27888
 - iii) The site will accept less than 6,000 cubic yards of yard and garden waste, silvicultural waste, untreated and unpainted wood or any combination per quarter;
 - iv) The Composting process to be used is static piles; and
 - v) The product will be used on-site and a soil amendment.
- B) The County will operate in accordance with operational requirements as follows:
 - 1. The site will not restrict the 100 year flood.
 - 2. A 50 foot buffer between the site and all property lines and perennial streams/rivers will be maintained.
 - 3. A 200 foot buffer between the site and all residences and dwellings not owned by the County will be maintained.
 - 4. A 100 foot buffer between the site and all wells with the exception of monitoring wells will be maintained.
 - 5. The site will receive yard and garden waste, silvicultural waste, untreated and unpainted wood waste or any combination thereof.
 - 6. The site will be located in accordance with 15A NCAC 2B .200, Classification and Water Quality Standards Applicable to Surface Waters in N.C.
 - 7. The site will not be located in an area that runoff from the site will come in contact with any cap or side slopes of a closed disposal area.
 - 8. A 25 foot minimum distance between the site and swales or berms will be maintained to allow for fire fighting equipment.
 - 9. The site will meet the following surface water requirements:
 - a) The site will not cause a discharge of materials or fill materials into waters or wetlands of the state that is in violation of Section 404 of the Clean Water Act;
 - b) The site will not cause a discharge of pollutants into waters of the state that is violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act; and
 - c) The site will not cause non-point source pollution of waters of the state that violates assigned water quality standards;

10. The site will meet the following groundwater requirements:
 - a) The site will not contravene groundwater standards as established under 15A NCAC 2L;
 - b) Portions of the site used for waste receipt and storage, active composting, and curing will have a soil texture finer than loamy sand and a depth to the seasonal high water table will be maintained at least 12 inches.
 11. The compost process will be maintained at or above 55 degrees Celsius (131 degrees F) for 3 days and aerated to maintain elevated temperatures. Any ground material stockpiled on-site for more than thirty (30) days will be monitored as to not exceed 150 degrees Fahrenheit. The stockpile will be monitored using a windrow probe thermometer, at a frequency of once a week. Any actions (turning material or wetting) taken to maintain the temperature and any notations/documentation of temperature will be placed in the operating record
- C. The Facility will operate in accordance with all other state or local laws, ordinances, rules, regulations and orders.
- D. The County will maintain and operate the site to conform to the following practices:
- 1) The County will follow the construction plans and conditions of the permit and retain a copy of said permit, plans, and operational reports on-site.
 - 2) Erosion and Sedimentation Control Requirements
 - a. Adequate sediment control measures (structures or devices), will be utilized to prevent silt from leaving the landfill.
 - b. Adequate sediment control measures (structures or devices), will be utilized to prevent excessive on-site erosion.
 - 3) Surface water will be diverted from the operational, compost curing and storage areas.
 - 4) Leachate will be contained on site and treated to meet the standards of off-site disposal method.
 - 5) Access and security requirements
 - a. The Facility will be adequately secured by means of gates, chains, beams, fences and other security measures approved by the Division of Solid Waste Management to prevent unauthorized entry.
 - b. An attendant will be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
 - c. The access road to the site and monitoring locations will be of all-weather construction and maintained in good condition.
 - 6) The site will only accept wastes it is permitted to receive.
 - 7) Safety requirements:
 - a. Open burning is prohibited.
 - b. Equipment will be provided to control accidental fires. In the event of an emergency the operator(s) will call 911. Castoria Voluntary Fire

Department is located 2 miles away and the nearest fire hydrant is ¼ mile away. Fire extinguishers are located in all buildings and on all equipment. Dirt piles are also on site to use in emergency situations.

- c. Personnel training will be provided to insure all employees are trained in site specific safety, remedial, and corrective action procedures.
- 8) Sign requirements:
- a. Signs providing information on tipping or disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information will be posted at the site entrance.
 - b. Signs will be posted stating that no hazardous or liquid waste can be received.
 - c. Traffic signs or markers will be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
- 9) Monitoring requirements:
- a. All specified monitoring and reporting will be met.
 - b. The temperature of all compost produced will be monitored sufficiently to ensure that the pathogen reduction criteria is met.
- 10) Compost or mulch that is produced at this facility, that contains minimal pathogenic organisms, and is free from offensive odor and contains no sharp particles that would cause injury to persons handling the compost, will be distributed, with unrestricted applications, with directions.

SECTION 2.0

**CLOSURE
PLAN**

2.1 Introduction

The Division requires that the Engineer certifies the constructed cap is built according to approved plans and specifications. The Engineer that will accomplish this task is the one who did the planning and has written the Closure Plan specifications.

Before construction can begin, a pre-construction meeting will be held and the responsibilities and duties of each party will be discussed.

The Contractor is responsible for following and meeting the requirements set forth in the contract documents. The Contractors will provide to the Owner of the landfill and the Engineer a completed landfill constructed by Division's approved plans and specifications. The Contractor will give the Engineer a schedule for completion of the landfill including dates for expected construction of the cohesive soil test pad, cohesive soil cap, erosive layer, and estimated time for project completion. The Contractor is responsible for providing a foreman to remain on site at all times during construction, provide qualified personnel to conduct quality control, scheduling and coordinating the subcontractors, provide progress reports and as-built drawings, and coordinating construction activities with the Engineer. The foreman is responsible for supervising and coordinating with his crew, subcontractors, quality control personnel, attending all meetings and notifying the Engineer's Construction Observer when any discrepancies occur. The Contractor will meet with the Construction Observer on a daily basis to discuss the days construction activities. The results of all tests and any change in schedule shall be given to the Construction Observer as soon they are known by the Contractor. The Contractor must be registered in the State of North Carolina.

The Engineer is responsible for providing the engineering design, drawings and specifications, contract documents and Construction Quality Assurance (CQA) needed for construction of the landfill. The Engineer is responsible for conducting the pre-construction meeting, which will lay out the foundation for the project. The Engineer will approve any design changes and certify to the Division that the cap was constructed according to the requirements of Rule .0541 Construction Quality Assurance Plan and .0540 Construction requirements for C&D Facilities, and Division approved plans and specifications. This will be accomplished by on-site observation and independent laboratory soil testing to test site-specific soil properties including permeability. The Engineer will provide Quality Assurance by spot testing along side the Contractor, who will be providing the Quality Control. The Engineer will certify that the construction was completed in accordance with the CQA manual. The Engineer must be a professional engineer registered in North Carolina.

The Construction Observer (CO) is the Engineer's representative on-site. It is the CO's responsibility to know and interpret the plans and specifications of the project. On a daily basis the CO will coordinate with the Foreman to help ensure a quality product for the Owner. The CO will keep a daily log on the activities of the Contractor, keep notes on all meetings, and handle all quality assurance activities indicated in this document. The CO will keep a log of all material delivered on site and ensure the materials meets or exceeds the specifications indicated in this report. If the need arises, additional meetings will be scheduled as determined by the CO.

The estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility is 31,029 tons from FY 97-98 through FY 07-08.

Prior to beginning closure, the County shall notify the Division that a "Notice of the Intent to Close" the unit has been placed in the operating record. The County shall begin closure activities no later than thirty (30) days after the date on which the landfill receives the final wastes, or if the landfill has remaining capacity and there is a reasonable likelihood that the landfill will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the Division if the County demonstrates that the landfill has the capacity to receive additional waste and the County has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the closed landfill.

The County shall complete closure activities in accordance with the Closure Plan within 180 days following the final receipt of waste. Extensions of the closure period may be granted by the Division if the County demonstrates that closure will, of necessity, take longer than one hundred eighty (180) days and the County has taken and will continue to take all steps to prevent threats of human health and environment from the enclosed landfill.

Following closure of the landfill, the County shall notify the Division that a certification, signed by the Project Engineer verifying that closure has been completed in accordance with the Closure Plan, and has been placed in the operating record. The County shall record a notation on the deed to the landfill property and notify the Division that the notation has been recorded and a copy has been placed in the operating record. The notation on the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill and its use is restricted under the Closure Plan approved by the Division. The County may request permission from the Division to remove the notation from the deed if all waste is removed from the landfill.

2.2 Cap System

The County will cap their landfill within 180 days after the final receipt of solid waste. The cap system will consist of 12 inches of intermediate cover, 18 inches of cohesive soil with a permeability no greater than 1.0×10^{-5} cm/sec, and 18 inches of erosive layer. The cap will contain a gas venting system consisting of a series of washed stone trenches below the soil liner that will be vented through 10" diameter PVC pipes that penetrate the cap. The cap system will also include the proper seeding and mulching of the erosive layer and other erosion control devices. The largest area currently requiring a cap system will be 12.65 acres.

2.3 Cohesive Soil Cap

All materials and equipment shall be furnished by an established and reputable manufacturer or supplier. All materials and equipment shall be new and shall be of first class ingredients and construction, designed and guaranteed to perform the service required and shall conform with the following standard specifications or shall be the product of the listed manufacturers or similar and equal thereto as approved by the Engineer.

Cohesive Soil Cap Borrow Material

Test Name	Test Method	Contractor/Engineer Frequency
Moisture/Density	ASTM D698/D1557	1 per 5000 c.y.
Remolded Permeability	ASTM D5084	1 per 5000 c.y.
Atterberg Limits	ASTM D4318	1 per 5000 c.y.
Visual Classification	ASTM D2488	1 per 5000 c.y.
Grain Size Distribution	ASTM D422	1 per 5000 c.y.

Cohesive Soil Cap Test Pad

Test Name	Test Method	Contractor/Engineer Frequency
Field Moisture/Density	ASTM D1556 (sand cone) ASTM D2922/D3017 (nuclear gauge) ASTM D2937 (drive cylinder)	3 per lift
Permeability	ASTM D5084	1 per lift
Remolded Permeability	ASTM D5084	1 per lift
Atterberg Limits	ASTM D4318	1 per lift
Visual Classification	ASTM D2488	1 per lift
Grain Size Distribution	ASTM D422	1 per lift

In-Place Cohesive Soil Cap

Test Name	Test Method	Contractor/Engineer Frequency
Field Moisture/Density	ASTM D1556 (sand cone) ASTM D2922/D3017 (nuclear gauge) ASTM D2937 (drive cylinder)	1 per lift per acre
Permeability	ASTM D5084	1 per lift per acre
Atterberg Limits	ASTM D4318	1 per lift per acre
Visual Classification	ASTM D2488	1 per lift per acre
Grain Size Distribution	ASTM D422	1 per lift per acre

(a) Suitable on-site and/or off-site soils may be used as cohesive soil cap if it can achieve an in-place permeability of 1.0×10^{-5} cm/sec or less and meets all testing requirements indicated in the material testing paragraph in this section. Wyoming bentonite or an approved equivalent may be blended with the soil to lower the soil's permeability.

(b) A permeability “window” shall be developed for each type of soil from the borrow material that will be used for construction of the cohesive soil cap. The window shall be plotted on a semi-log plot with moisture content versus density. Laboratory testing to develop the window shall include a series of remolded samples compacted to various dry densities and moisture contents utilizing the same compactive effort (ASTM D 698 or D 1557). The remolded samples shall be tested for permeability to determine whether or not the particular soil type will provide the maximum permeability (1.0×10^{-5} cm/sec) at various dry densities and moisture contents. The window is then developed from the accepted remolded samples and moisture contents from the semi-log plot. A straight line is typically drawn between the acceptable points on the moisture-density curve to indicate a range of probable acceptable permeability results. The window will be used in the construction of the test strip to verify the laboratory remolded permeability results.

(c) Atterberg Limits (ASTM D4318) and grain size distribution (ASTM D422) and visual classification (ASTM D2488) shall also be conducted on the bulk samples used to prepare the permeability window. These tests can be used as indices on random samples collected from the borrow site during construction to verify the soil type is the same as was used to develop the “window”. As a minimum, sufficient visual classifications and Atterberg Limits shall be conducted in association with each permeability test to verify that the construction materials meet specifications.

(d) A test strip of compacted cohesive soil cap shall be prepared to verify the permeability “window” prior to general installation of the cohesive soil cap. The test strip will be used to verify the results from the remolded permeabilities from the borrow site utilizing the permeability window(s) for each soil type that is going to be used for construction of the cohesive soil cap. At a minimum, the verification will consist of three moisture density tests, one Atterberg limits test, one grain size distribution test (ASTM D2488, D4318, and D422 respectively), and one Shelby Tube sample (ASTM D1587) for each lift constructed in the test pad. Laboratory permeability tests shall be performed on tube (Shelby or drive tubes) samples of the cohesive soil cap after placement and compaction. The permeability must be a maximum of 1.0×10^{-5} cm/sec. Tests shall be performed in accordance with the ASTM D5084. The test strip shall be approximately 2,500 sq. ft. in surface area and constructed to conform geometrically to the site topography with a minimum lateral dimension in any direction of 25 feet. The test strip shall consist of at least three compacted 6 inch lifts of cohesive soil cap. Placement and testing of the test strip shall be in conformance with the construction specifications and requirements for general installation of the cohesive soil cap. Test results from the test strip shall be used to guide placement and achievement of the required maximum permeability of 1.0×10^{-5} cm/sec of the cohesive soil cap. The test strip may be used as an integral part of the overall cohesive soil cap if it meets the required specification for the cap. All results shall be given to the CO.

(e) The soils shall be placed to the total thickness shown on the plans in maximum 8-inch thick loose lifts resulting in a maximum 6" lift compacted preferably at a moisture content between 0 to 3% above optimum moisture content to 95% (Standard Proctor) maximum dry density (ASTM D698). A sheepsfoot roller or approved alternative may be used to compact the soil cap provided the compaction and permeability requirements can be achieved. Each lift shall be tested for permeability, moisture content, particle size distribution analysis, Atterberg Limits, moisture-density-permeability relation, and if needed, percent bentonite admixed with soil, prior to the placement of the succeeding lift. Each lift shall also be visually inspected to confirm that all soil clods have been broken and that the surface is sufficiently scarified so that adequate bonding can be achieved. Soils for cohesive soil cap shall be screened, disked, or prepared using any other approved method as necessary to obtain a homogeneous cohesive soil with clod sizes in a soil matrix no larger than approximately 1.5 inches in maximum diameter. After each lift, the surface shall be scarified prior to the placement of the next lift to provide good bonding from one lift to the next.

(f) The cohesive soil cap shall be tested in the field to evaluate the coefficient of permeability. The coefficient of permeability of the soil cap shall be equal to or less than 1.0×10^{-5} cm/sec after placement and compaction. The soil cap must be a minimum of 1.5 feet thick.

(g) Laboratory permeability tests shall be performed on tube (Shelby or drive tubes) samples of the cohesive soil cap after placement and compaction. The permeability must be a maximum of 1.0×10^{-5} cm/sec. Tests shall be performed in accordance with ASTM D5084.

(h) The soil cap shall be tested a minimum of one soil sample per lift per acre for laboratory permeability. All permeability testing will be on random samples judged by the Engineer to be representative of the most permeable soil conditions for the area being tested. The project engineer shall certify that the materials used in construction were tested according to the Division approved plans. If after placement of the soil cap it fails the required tests, the material will either be reworked or replaced and then retested for permeability. The soil cap must remain moist at all times. If any section becomes dry, rework the dry area and moisten.

(i) A minimum of two (2) inches of soil shall be removed prior to securing each sample for permeability testing. The sampling tube shall be advanced vertically into the soil with as little soil disturbance as possible and should be pushed using a uniform pressure. The sampling tube (Shelby tube), when extracted, shall be free of dents, and the ends shall not be distorted. A backhoe or approved alternative should be used to advance the sampling tube (Shelby tube) as long as disturbance is minimized. Drive tube samples of the Cap may be obtained for permeability testings. If the Engineer judges the sample to be too disturbed, another sample shall be taken. Once an acceptable sample has been secured and properly prepared, all sample excavations shall be backfilled to grade with a 50% mixture of bentonite and similar soils in maximum 3-inch loose lifts and hand tamped with a blunt tool to achieve a tight seal equivalent to the original density.

(j) No additional construction shall proceed on the soil layers at the area being tested until the Engineer has reviewed the results of the tests and judged the desired permeability is being achieved.

(k) As a minimum, sufficient visual classifications (ASTM D2488) , Gradation analyses (ASTM D422) and Atterberg limits (ASTM D4318) shall be conducted in association with each permeability test to verify that the construction materials meet specifications. The minimum number of tests will be one per lift per acre.

(l) If the soil for the cohesive soil cap is incapable of achieving the required permeability when compacted, bentonite or approved alternative may be mixed with the soils to decrease the permeability. The amount of additive required must be determined in the laboratory. Where additives are required, the soil shall be placed in maximum 8-inch thick loose lifts and compacted preferably between 0 to +3% optimum moisture content to 95% standard Proctor maximum dry density (ASTM Test Designation D698) for the soil-additive mixture. All other compaction procedures for the soil apply.

(m) The Contractor shall protect the cohesive soil cap from desiccation, flooding and freezing. Protection, if required, may consist of a thin plastic protective cover, (or other material as approved by the engineer) installed over the completed cohesive soil cap until such time as the placement of flexible membrane liner begins. Areas found to have any desiccation cracks or which exhibit swelling, heaving or other similar conditions shall be replaced or reworked by the contractor to remove these defects.

(n) The thickness and grade of the soil cap will be verified by the surveyor. The soil cap will be surveyed at 100 foot grid points where the elevations of the top of landfill will be checked with the top of soil cap to verify 1.5 feet of soil cap. The grade will then be verified with the surveyed information. The survey will be performed by North Carolina Professional Land Surveyor.

2.4 Erosive Layer

The soil for the erosive layer shall consist of any soils suitable of supporting vegetative growth.

(a) Native vegetation will be used as recommended in the NC Erosion and Sediment Control Planning and Design Manual and as shown in the Closure Plan drawings in Appendix A.

(b) The thickness and grade of the erosive layer will be verified by the surveyor. The erosive soil layer will be surveyed at 100 foot grid points where the elevations of the top of landfill will be checked with the top of soil cap to verify 1.5 feet of erosive soil layer. The grade will then be verified with the surveyed information. The survey will be performed by North Carolina Professional Land Surveyor.

2.5 Methane Venting System

Gas Venting System

NC.D.O.T. No.5 stone, Geotextile fabric, and 8" and 10" plastic pipes will be used in the construction of the Gas venting system.

(1) Stone in Trenches and Surrounding Perforated Collection Piping

Stone for methane collection system shall meet the requirements of NC DOT aggregate, Standard Size No. 5 and shall contain no fines. Stone must pass the sieve analysis test for No. 5 stone performed at the quarry.

(2) Geotextile Fabric

Geotextile fabric surrounding the stone/piping shall be non-woven needle punched fabric with the following minimum properties:

1) Weight	8.0 oz/yd ²	ASTM D-3776
2) Grab Strength	205 lbs.	ASTM D-4632
3) Grab Elongation	50%	ASTM D-4632
4) Trapezoidal Tear Strength	85 lbs.	ASTM D-4533
5) Puncture Strength	100 lbs.	ASTM D-4833
6) Mullen Burst Strength	320 psi	ASTM D-3786
7) Permittivity	1.4 sec ⁻¹	ASTM D-4491

Geotextile fabric shall be manufactured by Polyfelt , TNS Advanced Technologies, or approved equal.

(3) Plastic Pipe

Plastic gravity sewer pipe and fittings used for methane vent shall be unplasticized polyvinyl chloride (PVC) and conform to the requirements of ASTM Designation D-3034 on ASTM F679, Type PSM, Class 12454-B, SDR-35 with elastomeric gasket joints. PVC pipe and fittings shall

be as manufactured by J-M Pipe, Certainteed, H&W Industries or equal. The methane riser pipe shall be a 10-inch solid wall PVC pipe.

The methane gas venting system on top of the landfill will be constructed after all phases of filling have been completed.

2.6 Construction Quality Assurance(CQA) Report

The CQA report will contain the results of all the construction quality assurance and construction quality control testing including documentation of any failed test results, descriptions of procedures used to correct the improperly installed material, and results of all retesting performed. The CQA report will contain as-built drawings noting any deviation from the approved closure plans and will also contain a comprehensive narrative including, but not limited to, daily reports from the project engineer, a series of color photographs of major project features, and documentation of proceedings of all progress and troubleshooting meetings.

2.7 Closure Costs

The largest area to be closed within the permitted life will be 12.65 Ac. Post Closure will be 30 years after Closure.

Closure Costs:

Closure will consist of the following which costs are estimated as being done by a third party.

1. 18" of 1×10^{-5} cm/sec. soil cover, surface preparation;
2. Erosion Control Devices;
3. 18" Erosive layer;
4. Seeding and Mulching;
5. Mobilization/Demobilization, machine /equipment costs, and fuel costs;
6. Labor Costs;
7. Stone for methane gas collection.
8. Geotextile for methane gas collection.
9. Vent pipes for methane gas collection, and
10. Engineering Costs and QA/QC of the Composite liner and certification of closure, including CQA field monitoring and lab testing, CQA reporting and certification, construction administration and bidding, Survey as-builts and recordation fees.

Estimate of Probable Costs:

1. 18" of 1×10^{-5} cm/sec. cohesive soil cap for 12.65 acres:
(including surface preparation)
 $12.65 \times 43,560 = 551,034 \times 1.5 = 826,551 / 27 = 30,613$ cy
Total yardage + 15% = $35,205$ yd³ @ a cost of \$9.00/yd³
∴ Cost = \$316,845
2. Erosion Control devices

Estimated costs @ \$75,000
∴ Cost = \$75,000
3. 18" erosive soil layer for 12.65 acres.
 $12.65 \times 43,560 = 551,034 \times 1.5 = 826,551 / 27 = 30,613$ cy
Total yardage + 15% = $36,205$ yd³ @ a cost of \$4.00/yd³
∴ Cost = \$140,820
4. Seeding and Mulching for 12.65 acres.

Estimated cost of \$2,000/acre
∴ Cost = \$25,300
5. Mobilization/Demobilization.
(including Machine/Equipment costs and fuel costs)

Estimated cost of \$175,000
6. Labor Costs.

Estimated cost of \$200,000

∴ Cost = \$200,000

7. Stone for methane gas collection.

Total estimated linear feet = 1,759 ft.

Total estimated volume for a 2'x1' trench = 3,518 ft³

with a density of 120 lbs/ft³ total weight = 211 tons @ a cost of \$25.00/ton

∴ Cost = \$5,275

8. Geotextile for methane gas collection.

Total estimated linear feet = 1,759 ft.

Total estimated perimeter for a 2'x1' trench =

(1759 ft × 6 ft) = 10,554 ft² @ a cost of \$0.20/ ft²

∴ Cost = \$2,111

9. Vent pipes for methane gas collection.

Estimated cost @ \$600.00 each (9 vents).

∴ Cost = \$5,400

10. Engineering Costs and QA/QC of the Composite liner and certification of closure.
(including CQA field monitoring and lab testing, CQA reporting and certification,
construction administration, construction documentation and bidding, Survey as-builts
and recordation fees)

Estimated cost = \$200,000

∴ Cost = \$200,000

Total of Estimated Closure Costs:

1.	\$	316,845
2.	\$	75,000
3.	\$	140,820
4.	\$	25,300
5.	\$	175,000
6.	\$	200,000
7.	\$	5,275
8.	\$	2,111
9.	\$	5,400
10.	\$	200,000
Total:	\$	1,145,751

SECTION 3.0

**POST-CLOSURE
PLAN**

3.1 Introduction

CONTACTS:

Name: David Jones
Title: Solid Waste Director
Phone No.: (252) 747-5720
Address: 105 Landfill Rd.
Walstonburg, NC 27888

DESCRIPTION OF USE:

The County has no future use planned for their landfill at this time. However, any future use of the landfill shall not disturb the integrity of the cap system, base line system or any other components of the containment system or the functioning of the monitoring systems.

DESCRIPTION OF MAINTENANCE ACTIVITIES:

The County Landfill will be monitored quarterly for evidence of settlement, subsidence and ponding in the cap system. The entire site will be monitored quarterly for evidence and effects of erosion. The erosion control plan will be preserved. All gates, fencing, access roads, and signs shall be maintained appropriately. Annually in the Spring, the vegetative cover will be monitored to assure a good stand of vegetation, and where needed, it will be reseeded. The vegetative cover will be mowed twice a year, once in mid-summer and again in early fall. These maintenance activities will take place over the entire post closure period of thirty years. The County will make repairs as necessary to maintain the integrity and effectiveness of the Cap System.

DESCRIPTION OF MONITORING ACTIVITIES:

The County Landfill will monitor and analyze ground water and surface water semi-annually for Appendix I constituents for a period of thirty years. The County will also monitor methane gas at landfill structures and the boundary quarterly for the thirty-year period.

The County will inspect the exterior slopes of the landfill at least weekly to determine if there are any breakouts of leachate in the slopes. If any are discovered, they will be contained immediately to assure that they will not leave the site. The containment can consist but not be limited to an earthen berm, sand bags, erosion control logs and/or anything that will contain the leachate on the slope.

The repair of the breakout will require excavating into the cover soil on the slope down to the waste and into the waste to determine what is causing the leachate to come to the surface. Normally it is another layer of soil that has been used as cover and the leachate is flowing along that layer to the slope and surfacing on the slope. The lower layer of cover needs to be removed at the breakout so that the leachate that is flowing along this cover has a point where it will go vertically into the landfill instead of flowing along the soil boundary that was once either daily cover or an intermediate cover.

Once this soil layer has been breached, the excavation can be filled back with stone, clean waste or any material, other than soil, that will allow the leachate to flow vertically instead of horizontally. Once the excavation has been filled with this material, the surface can be covered with soil so that surface water does not intrude into the excavation. Vegetative cover will be reestablished over the excavated area.

COMPLETION OF POST-CLOSURE CARE

Following completion of the post-closure care period for each unit, the owner or operator will notify the Division that a certification, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the operating record.

3.2 Post Closure Costs

The largest closed area to be monitored within the post closure life will 12.65 acres.

Post Closure Costs:

Methane gas, ground water and surface water will be monitored for 30 years after closure. The cap will also be monitored for the 30-year period. All costs include reports, data analysis, and certifications.

1. Ground Water and Surface Water monitoring semi-annually for 30 years for Appendix I constituents and statistical analysis.
Estimated cost/sample = \$840.00/sample
Total annual samples = 2(6 wells + 2 surface) = 16 samples/year
Estimated cost = 30 years x 16 samples/year x \$840.00/sample =

∴ Cost = \$403,200
2. Methane Gas monitoring quarterly for 30 years.
Estimate \$600.00/quarter = \$2,400.00/year
Estimated cost = 30 year x \$2,400.00 = \$72,000.00

∴ Cost = \$72,000.00
3. Cap Monitoring and repairing (including maintenance of all gates, fencing, access roads and signs, mowing and revegetation)

Estimate \$100,000 for the 30 years.

∴ Cost = \$100,000
4. Closure of sedimentation and erosion control devices.
Estimate \$24,000.00 for closure

∴ Cost = \$24,000
5. Maintenance of gas vents, monitoring wells, etc.
Estimate \$60,000
6. Administration/Record keeping/Certification
Estimate \$4,000.00/year for 30 years

∴ Cost = \$120,000

Total of Estimated Post Closure Costs:

1.	\$	403,200
2.	\$	72,000
3.	\$	100,000
4.	\$	24,000
5.	\$	60,000
6.	\$	<u>120,000</u>
Total:	\$	779,200

SECTION 4.0

FINANCIAL RESPONSIBILITIES

Commissioners
Jack Edmondson – Chairman
Jesse C. Tyndall – Vice Chairman
Denny Garner
Bennie Heath
James T. Shackelford, Jr.

County Manager
Don Davenport

Finance Officer
Shawna Wooten



June 27, 2008

Ethan Brown, Compliance Officer
Solid Waste Section
DENR – Division of Waste Management
1646 MSC
Raleigh, NC 27699-1646

Dear Sir/Madame:

I am the chief financial officer of Greene County, North Carolina, 229 Kingold Blvd., Snow Hill, North Carolina 28580. This letter is in support of this unit of local government's use of the financial test to demonstrate financial assurance, as specified in 15A NCAC 13B.1628 (e)(1)(f).

This unit of local government is the owner or operator of the following facilities for which financial assurance for closure, post-closure, or corrective action is demonstrated through the financial test specified in 15A NCAC 13B.1628(e)(1)(f). The current closure, post-closure, or corrective action cost estimates covered by the test are shown for the facility.

Facility Name:	Greene County Sanitary Landfill
Facility Address:	S.R. 1239
Permit #:	40-02
Closure Cost Estimate:	1,145,751
Post-Closure Estimate:	659,200
Corrective Cost Estimate:	None

This fiscal year of the unit of local government ended on June 30, 2007. The figures for the following items marked with an asterisk are derived from this unit of local government's Annual Financial Information Report (AFIR) for the latest completed fiscal year ended June 30, 2006.

229 Kingold Blvd., Suite D • Snow Hill, NC 28580 • (252) 747-3446 • FAX (252) 747-3884
www.co.greene.nc.us

The mission of Greene County Government is to serve and improve the lives of all citizens by providing high-quality, cost-effective services in an open, professional and ethical environment

Commissioners
Jack Edmondson – Chairman
Jesse C. Tyndall – Vice Chairman
Denny Garner
Bennie Heath
James T. Shackelford, Jr.

County Manager
Don Davenport

Finance Officer
Shawna Wooten



Ratio Indicators of Financial Strength

1. Sum of current closure, post-closure and corrective action cost estimates	\$ 1,804,951
2. Sum of cash and investments (AFIR Part 7)	\$ 6,237,326
3. Total expenditures (AFIR Part 4, Cols. a & b Part 5 excluding educational cap outlays for counties)	\$18,241,268.
4. Annual debt Service	\$ 1,252,059
5. Assured environmental costs to demonstrate financial responsibility in the following amounts under Division rules:	
NSWLF under 15A NCAC 13B.1600	\$ 1,804,951
Hazardous waste treatment, storage and disposal facilities under 15A NCAC 13A.0009 and .0010	-0-
Petroleum underground storage tanks under 15A NCAC 2N0100-0800	-0-
Underground Injection Control System facilities under 15A NCAC 2D.0400 and 15A NCAC 2C.0200	-0-
PCB Commercial storage facilities under 15A NCAC 20.0100 and 15A NCAC 2N.0100	-0-
Total assured environmental costs	\$ 1,804,951
6. Total Annual Revenue (AFIR Part 2)	\$ 20,935,455

Circle either "yes" or "no" to the following questions:

Is line 5 divided by 6 less than or equal to 0.43?

YES

NO

229 Kingold Blvd., Suite D • Snow Hill, NC 28580 • (252) 747-3446 • FAX (252) 747-3884

www.co.greene.nc.us

Commissioners
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Denny Garner
Bennie Heath
James T. Shackelford, Jr.

County Manager
Don Davenport

Finance Officer
Shawna Wooten



GREENE COUNTY

A Place To Grow. The Way To Live.

8. Is line 2 divided by 3 greater than or equal to 0.05?
9. Is line 4 divided by 3 less than or equal to 0.20?

~~YES~~
YES

NO
NO

I hereby certify that the wording of this letter is identical to the wording specified in 15A NCAC 13B1628(e)(2)(G) as such rules were constituted on the date shown immediately below. I further certify the following: (1) that the unit of local government has not operated at a total opening fund deficit equal to five percent or more of total annual revenue in either of the past two fiscal years, (2) that the unit of local government is not in default on any outstanding general obligation bonds or long-term obligations, and (3) does not have any outstanding general obligation bonds rated lower than Baa as issued by Moody's, BBB as issued by Standard & Poor's, BBB as issued by Fitch's or 78 as issued by the Municipal Council.

Sincerely,

Shawna T. Wooten
Finance Officer

APPENDIX A

**FACILITY DRAWINGS,
ENGINEERING/
OPERATION DRAWINGS
AND
CLOSURE DRAWINGS**

GREENE COUNTY CONSTRUCTION AND DEMOLITION LANDFILL FACILITY FACILITY PLAN

Permit Number: 40-02

Site Location: 105 Landfill Road
Walstonburg, NC 27888

Applicant: County of Greene

Applicant's Address: 229 Kingold Blvd., Suite D
Snow Hill, NC 28580

BOARD OF COMMISSIONERS

Jack Edmondson - Chairman
Jesse Tyndall - Vice-Chairman
Denny Garner
Bennie Heath
James T. Shackelford

COUNTY MANAGER

Don Davenport

SOLID WASTE DIRECTOR

David Jones

Engineer

**Municipal Engineering Services Company, P.A.
Garner, NC - Morehead City, NC - Boone, NC**



by _____
Professional Engineer
(Garner Office)

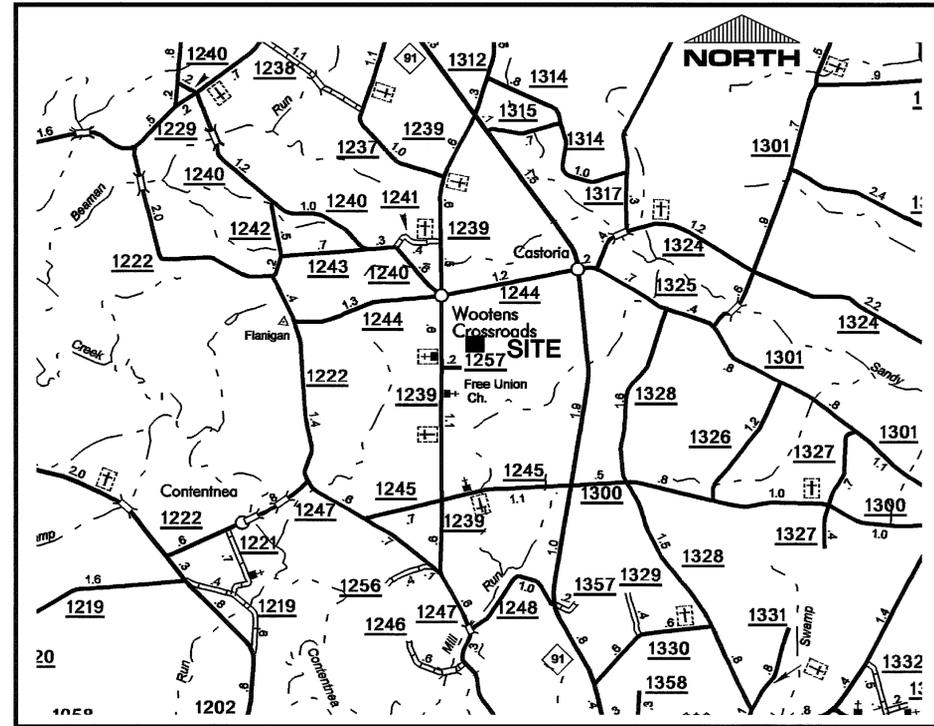
Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 262-1787
 Municipal Services
 P.O. BOX 97 GARNER, N.C. 27859
 (919) 772-5393
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 726-9481

10/12/2011	LHC	1	REVISED SET PER DENR LETTER DATED 7/1/2010.
DATE	BY	REV.	DESCRIPTION
SCALE: 1:1 DATE: 12/01/09 DRWN. BY: L. HAMPTON CHKD. BY: J. WOODIE PROJECT NUMBER G07061 DRAWING NO. SHEET NO. T1 1 OF 7			

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INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
1	T1	TITLE SHEET
2	T2	INDEX AND VICINITY MAP
3	F1	FACILITY PLAN AND EXISTING CONDITIONS
4	F2	PHASE 2 FILL PLAN
5	F3	PHASE 3 FILL PLAN
6	F4	PHASE 4 FILL PLAN
7	F5	PHASE 5 FILL PLAN



VICINITY MAP

Engineering Company, P.A.
 P.O. BOX 348 BOONE, N.C. 28607
 (828) 262-1767
Municipal Services
 P.O. BOX 97 GARNER, N.C. 27529
 (919) 772-5393
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 726-9481
 LICENSE NUMBER: C-0281

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

10/12/2011	DATE	INDEX AND VICINITY MAP
LHC	BY	DESCRIPTION
1	REV.	REVISED INDEX AND SHEET NUMBER
SCALE: 1:1		
DATE: 12/01/09		
DRWN. BY: L. HAMPTON		
CHKD. BY: J. WOODIE		
PROJECT NUMBER		
G07061		
DRAWING NO.	SHEET NO.	
T2	2 OF 7	

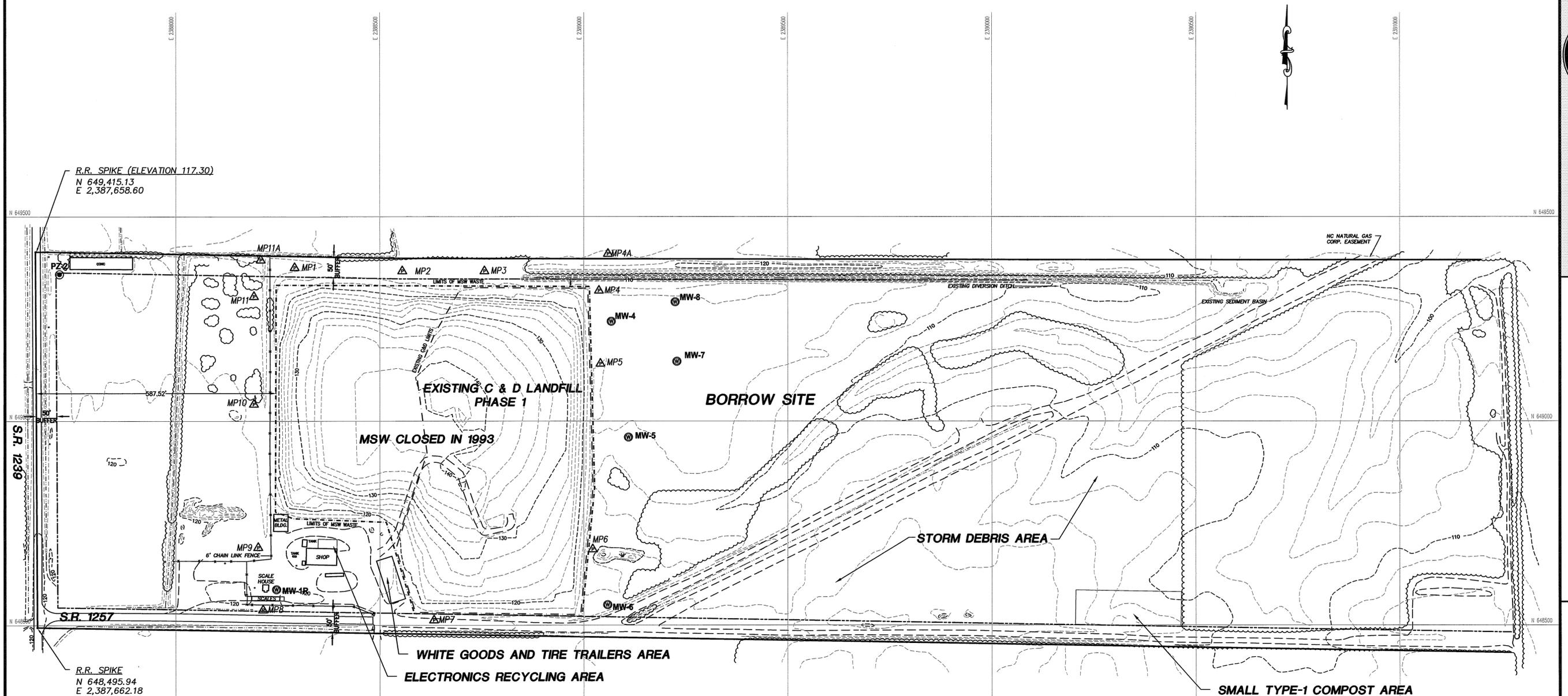


LEGEND

- EXISTING DIVERSION DITCH/DRAINAGE FEATURE
- - - EXISTING CONTOURS
- BUFFER
- PROPERTY
- - - LIMITS OF MSW WASTE
- - - CURRENT LIMITS OF C&D WASTE
- ⊙ MW-5 EXISTING MONITORING WELLS
- ⊙ PZ-2 EXISTING PIEZOMETER
- △ MP3 EXISTING METHANE MONITORING PROBES

NOTES

THIS MAP WAS GENERATED FROM AERIAL PHOTOS FLOWN ON 2--22--94 BY TRIANGLE AERIAL MAPPING, SUPPLEMENTED WITH SURVEYS BY MUNICIPAL ENGINEERING SERVICES CO., PA.



PROPERTY	BOOK	PAGE	ACREAGE	GRANTOR	GRANTEE
C&D Landfill	424	352	77.7	Lan-Man, Inc.	Greene County
C&D Landfill(Map)	MB 7	24	77.785	-	Greene County

UNIT	FOOTPRINT ACREAGE	GROSS CAPACITY (CUBIC YARDS)
Closed Unlined MSW Unit	12.65	146,752
C&D Unit on top of closed MSW Unit (filled) 1/1/1998 - 5/8/2009	7.81	312,112
C&D Unit on top of closed MSW Unit (remaining as of 5/8/2009)	12.65	263,867



Engineering Company, P.A.

P.O. BOX 348 BOONE, N.C. 28607
(828) 282-1787

Municipal Services

P.O. BOX 97 GARNER, N.C. 27629
(919) 772-8393

P.O. BOX 828 MOREHEAD CITY, N.C. 28557
(919) 726-9451

LICENSE NUMBER: C-0281

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
11/11/11	UNC	2	REVISED PER NCEMBA DATED 11/11/2011
10/12/11	UNC	1	REVISED PER NCEMBA DATED 7/1/2010

FACILITY PLAN
EXISTING CONDITIONS

SCALE: 1" = 120'

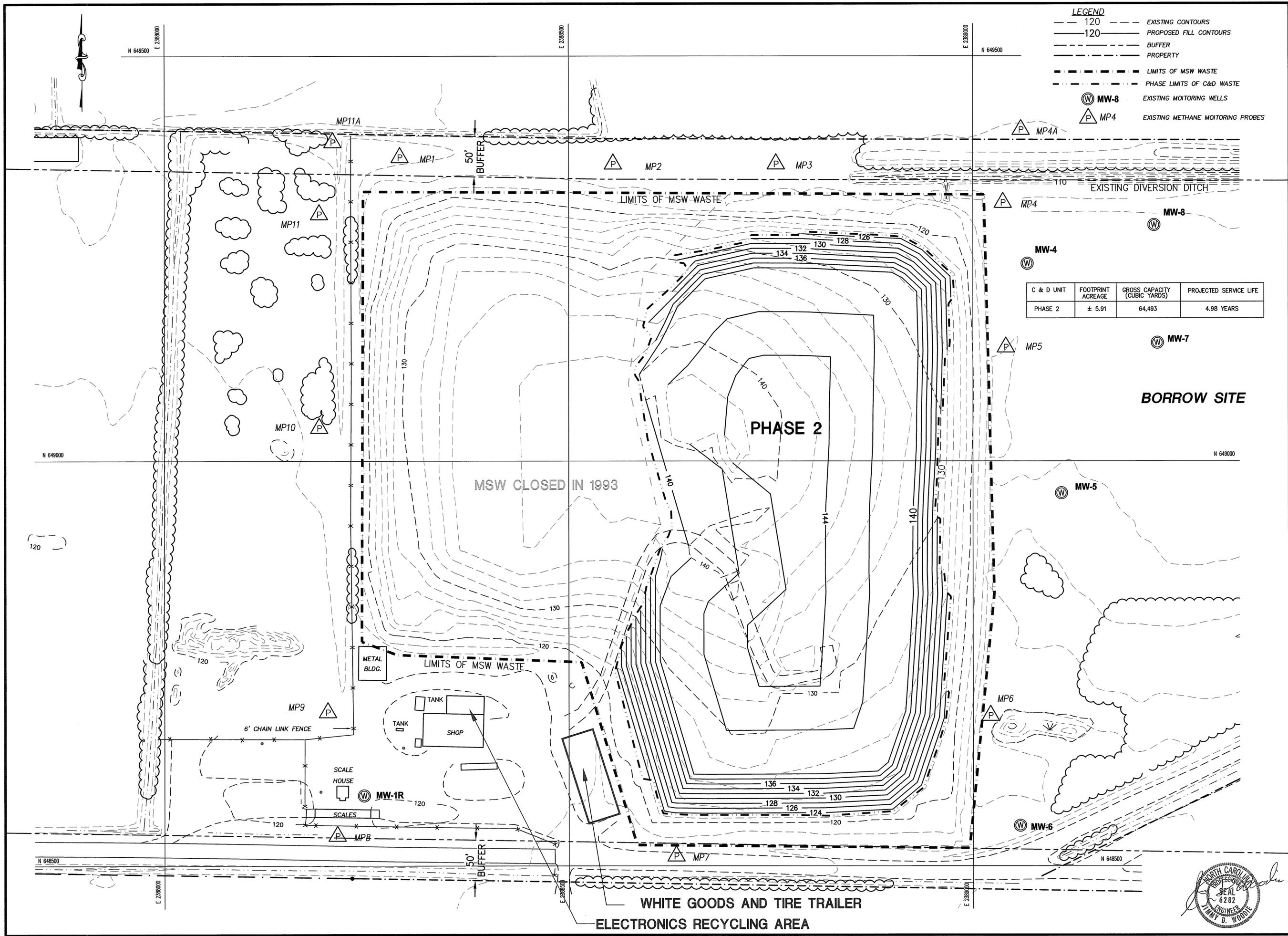
DATE: 12/01/09

DRWN. BY: L. HAMPTON

CHKD. BY: J. WOODIE

PROJECT NUMBER
G07061

DRAWING NO. **F1** SHEET NO. **3 OF 7**



- LEGEND**
- - - 120 - - - EXISTING CONTOURS
 - - - 120 - - - PROPOSED FILL CONTOURS
 - - - - - BUFFER
 - - - - - PROPERTY
 - - - - - LIMITS OF MSW WASTE
 - - - - - PHASE LIMITS OF C&D WASTE
 - ⊙ MW-8 EXISTING MONITORING WELLS
 - △ MP4 EXISTING METHANE MONITORING PROBES

C & D UNIT	FOOTPRINT ACREAGE	GROSS CAPACITY (CUBIC YARDS)	PROJECTED SERVICE LIFE
PHASE 2	± 5.91	64,493	4.98 YEARS

Engineering Company, P.A.

Municipal Services

LICENSE NUMBER: C-0281

P.O. BOX 87 GARNER, N.C. 27826
(610) 777-5393

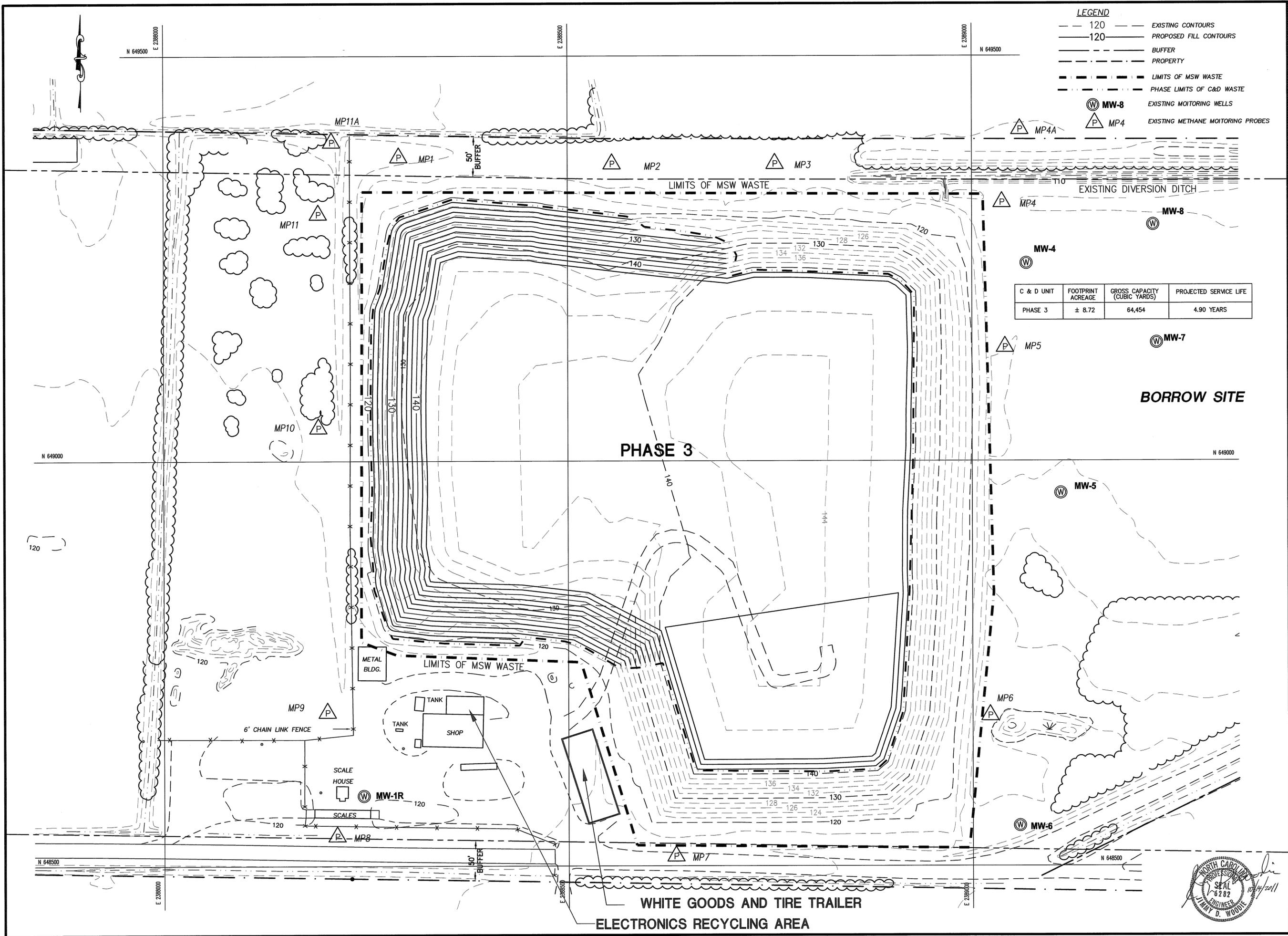
P.O. BOX 346 BOONE, N.C. 28607
(828) 262-1767

P.O. BOX 928 MOTTREHEAD CITY, N.C. 28657
(252) 726-9481

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

10/12/11	DATE	1	REV.	REVISED PER NODNR LETTER DATED 7/1/10	DESCRIPTION
LHC	BY				
SCALE: 1" = 50'					
DATE: 12/01/09					
DRWN. BY: B. LAUX					
CHKD. BY: J. WOODIE					
PROJECT NUMBER					
G07061					
DRAWING NO.			SHEET NO.		
F2			4 OF 7		





Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 292-1787
 (828) 728-3451

Municipal Services
 P.O. BOX 97, GARNER, N.C. 27829
 (919) 772-5363
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557

LICENSE NUMBER: C-0281

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

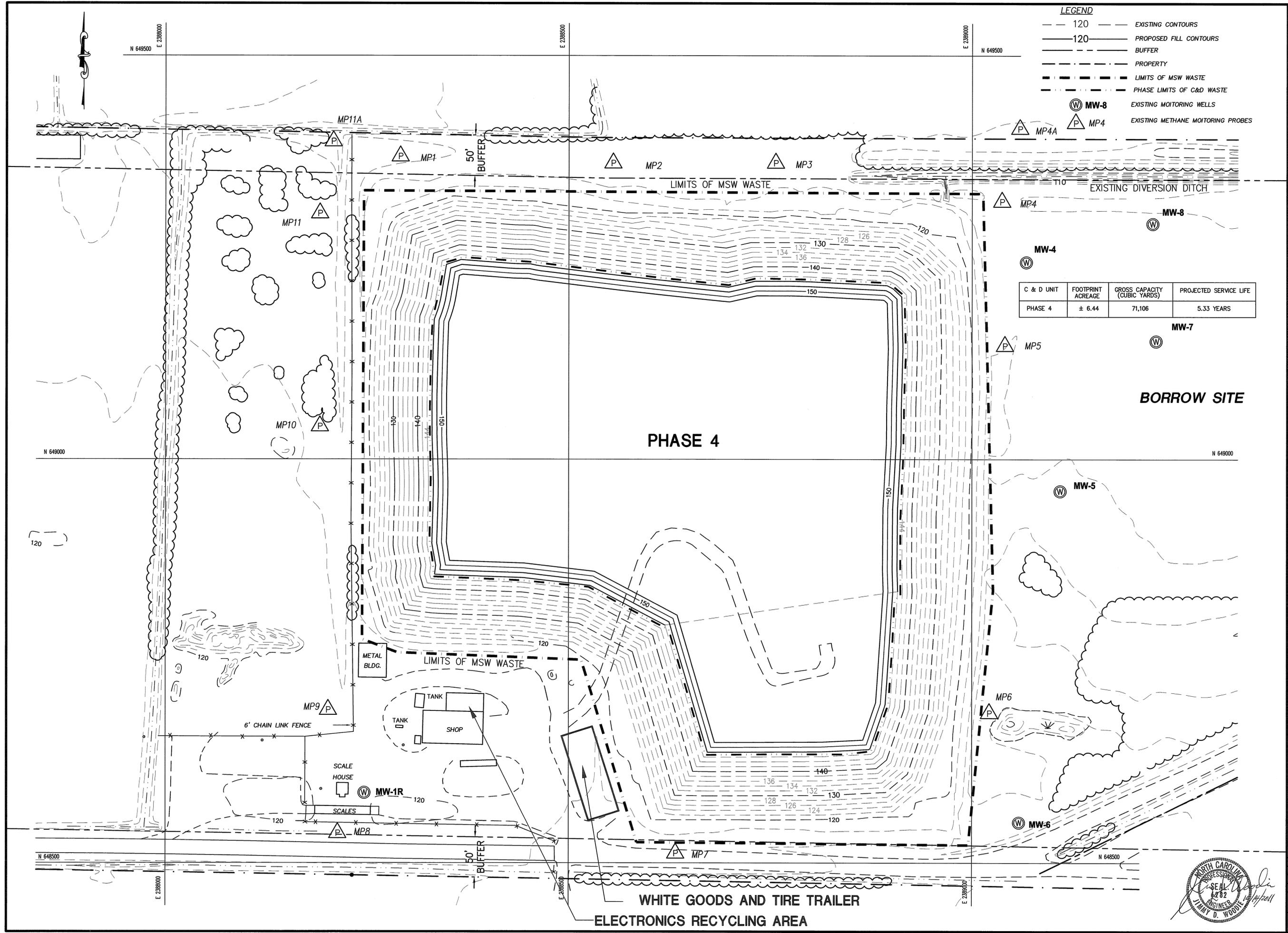
DATE	BY	REV.	DESCRIPTION
10/12/11	DHC	1	REVISED PER MODIFIER LETTER DATED 7/1/10

**FACILITY PLAN
PHASE 3 FILL PLAN**

SCALE: 1" = 50'
 DATE: 12/01/09
 DRWN. BY: B. LAUX
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07061
 DRAWING NO. F3 SHEET NO. 5 OF 7



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LEGEND

- 120 --- EXISTING CONTOURS
- 120 — PROPOSED FILL CONTOURS
- BUFFER ---
- PROPERTY ---
- LIMITS OF MSW WASTE ---
- PHASE LIMITS OF C&D WASTE ---
- ⊙ MW-8 EXISTING MONITORING WELLS
- △ MP4 EXISTING METHANE MONITORING PROBES

C & D UNIT	FOOTPRINT ACREAGE	GROSS CAPACITY (CUBIC YARDS)	PROJECTED SERVICE LIFE
PHASE 4	± 6.44	71,106	5.33 YEARS

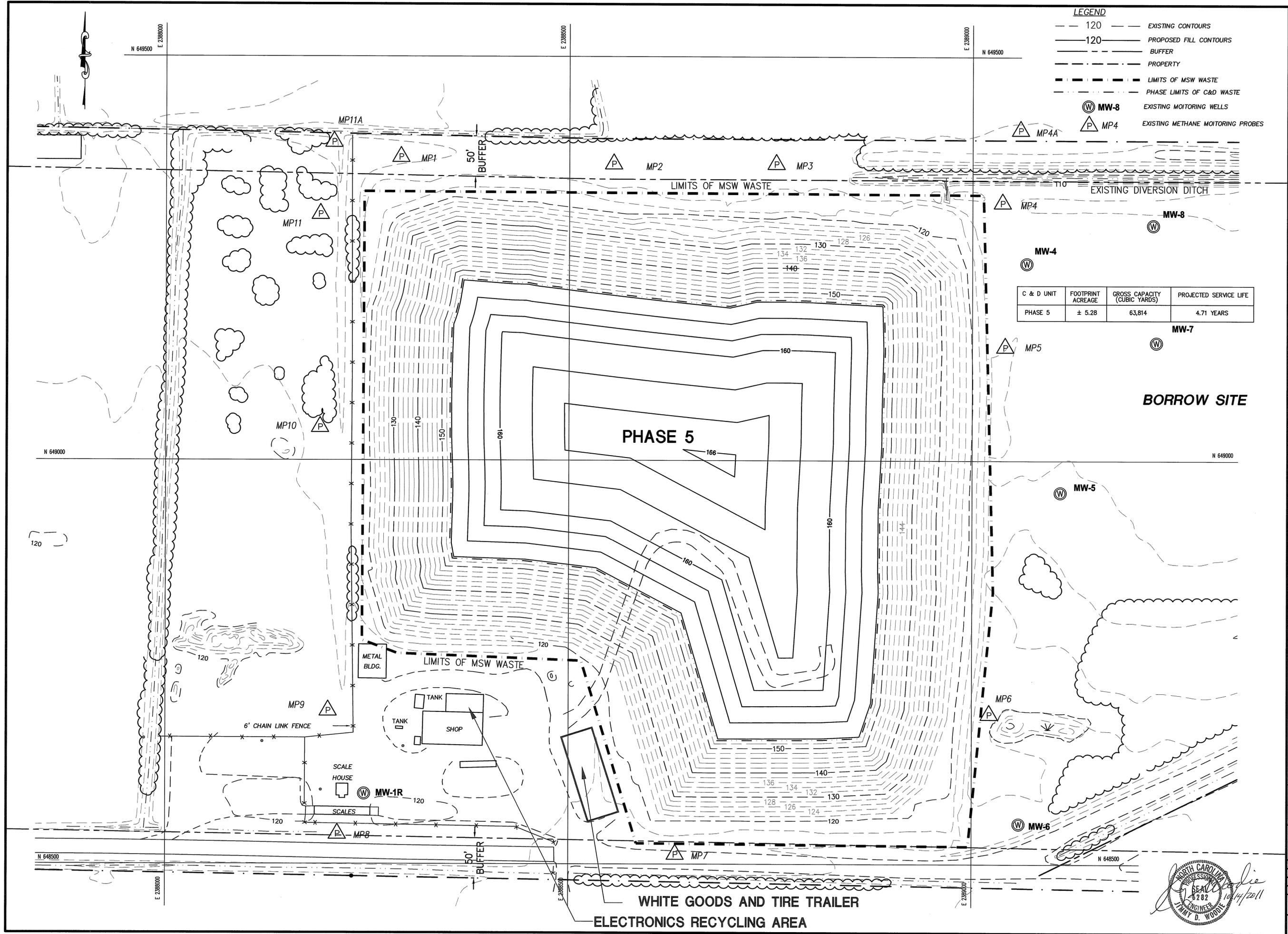
Engineering Company, P.A.
 P.O. BOX 949 BOONE, N.C. 28607
 (828) 282-1767
Municipal Services
 P.O. BOX 87 GARNER, N.C. 27729
 (919) 772-5363
 LICENSE NUMBER: C-0281
 P.O. BOX 828 MOREHEAD CITY, N.C. 28567
 (919) 728-9451

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

10/12/11	DATE	REV.	DESCRIPTION
LUC	BY	1	REVISED PER NUMBER LETTER DATED 7/7/10
FACILITY PLAN PHASE 4 FILL PLAN			
SCALE: 1" = 50' DATE: 12/01/09 DRWN. BY: B. LAUX CHKD. BY: J. WOODIE PROJECT NUMBER G07061 DRAWING NO. SHEET NO. F4 6 OF 7			



**WHITE GOODS AND TIRE TRAILER
 ELECTRONICS RECYCLING AREA**



LEGEND

- 120 --- EXISTING CONTOURS
- 120 — PROPOSED FILL CONTOURS
- BUFFER ---
- PROPERTY ---
- LIMITS OF MSW WASTE ---
- PHASE LIMITS OF C&D WASTE ---
- ⊙ MW-8 EXISTING MONITORING WELLS
- ⊙ MP4 EXISTING METHANE MONITORING PROBES

C & D UNIT	FOOTPRINT ACREAGE	GROSS CAPACITY (CUBIC YARDS)	PROJECTED SERVICE LIFE
PHASE 5	± 5.28	63,814	4.71 YEARS

Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 282-1787
Municipal Services
 P.O. BOX 97 GARRNER, N.C. 27629
 (919) 772-5895
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (919) 728-9451
 LICENSE NUMBER: C-0281

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

10/12/11	DATE	1	REVISED PER INCHER LETTER DATED 7/1/10
LUC	BY	REV	DESCRIPTION
FACILITY PLAN PHASE 5 FILL PLAN			
SCALE: 1" = 50'			
DATE: 12/01/09			
DRWN. BY: B. LAUX			
CHKD. BY: J. WOODIE			
PROJECT NUMBER G07061			
DRAWING NO. F5	SHEET NO. 7 OF 7		



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GREENE COUNTY CONSTRUCTION AND DEMOLITION LANDFILL FACILITY ENGINEERING/OPERATION PLAN

Permit Number: 40-02

Site Location: 105 Landfill Road
Walstonburg, NC 27888

Applicant: County of Greene

Applicant's Address: 229 Kingold Blvd., Suite D
Snow Hill, NC 28580

BOARD OF COMMISSIONERS

Jack Edmondson - Chairman
Jesse Tyndall - Vice-Chairman
Denny Garner
Bennie Heath
James T. Shackelford

COUNTY MANAGER

Don Davenport

SOLID WASTE DIRECTOR

David Jones

Engineer

***Municipal Engineering Services Company, P.A.
Garner, NC - Morehead City, NC - Boone, NC***

by  *[Signature]*
**Professional Engineer
(Garner Office)**

Engineering Company, P.A.
 P.O. BOX 946 BOONE, N.C. 28607
 (828) 262-1767
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 726-9451
 Municipal Services
 P.O. BOX 97 GARNER, NC 27629
 (919) 772-6993
 LICENSE NUMBER: C-10261

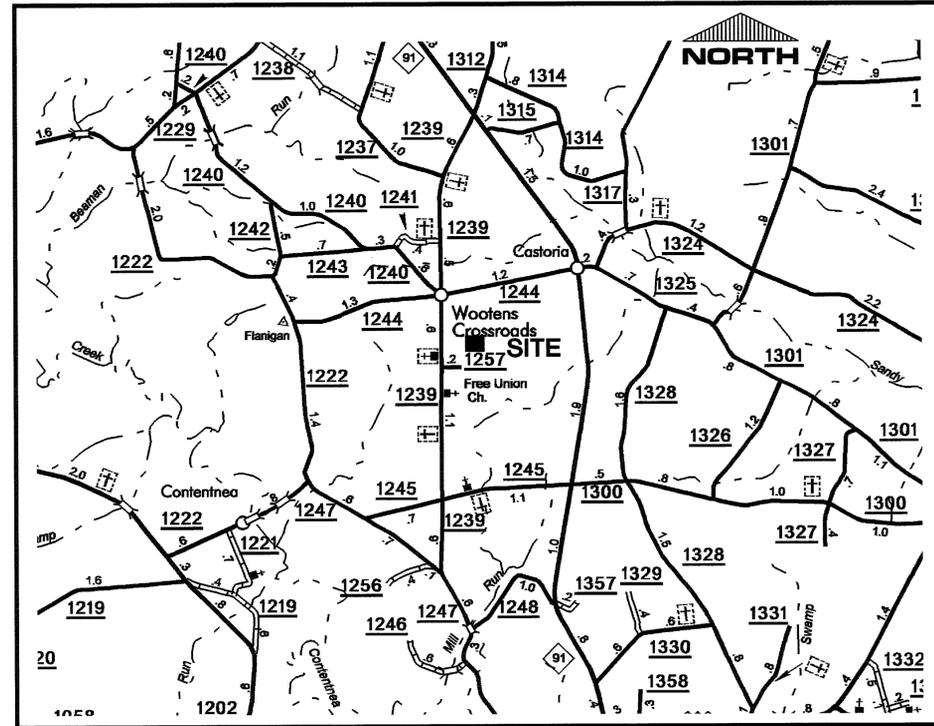
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3/2/10	LCH	2	REVISED PER DENR LETTER DATED 10/23/09.
2/23/08	LCH	1	REVISED PER DENR LETTER DATED 12/23/08.

SCALE: 1:1
 DATE: 11/21/07
 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07061
 DRAWING NO. T1 SHEET NO. 1 OF 8

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INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
1	T1	TITLE SHEET
2	T2	INDEX AND VICINITY MAP
3	CD1	FACILITY PLAN AND EXISTING CONDITIONS AS OF 11/20/07
4	CD2	1st YEAR FILL PLAN
5	CD3	2nd YEAR FILL PLAN
6	CD4	3rd YEAR FILL PLAN
7	CD5	4th YEAR FILL PLAN
8	CD6	5th YEAR FILL PLAN



VICINITY MAP

Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 292-1787
 P.O. BOX 928 MOREHEAD CITY, N.C. 28557
 (919) 726-9451

Municipal Services
 LICENSE NUMBER: C-0231
 P.O. BOX 87, GARNER, N.C. 27839
 (919) 772-9393

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
10/12/11	LHC	2	REV'D PER MODER LETTER DATED 7/10/11, NO CHANGES THIS SHEET
3/2/10	LCH	1	ADDED CORPORATE LICENSE NUMBER TO TITLE BLOCK

INDEX AND VICINITY MAP

SCALE: 1"=1'

DATE: 11/21/07

DRWN. BY: L. HAMPTON

CHKD. BY: J. WOODIE

PROJECT NUMBER
G07061

DRAWING NO. T2 SHEET NO. 2 OF 8



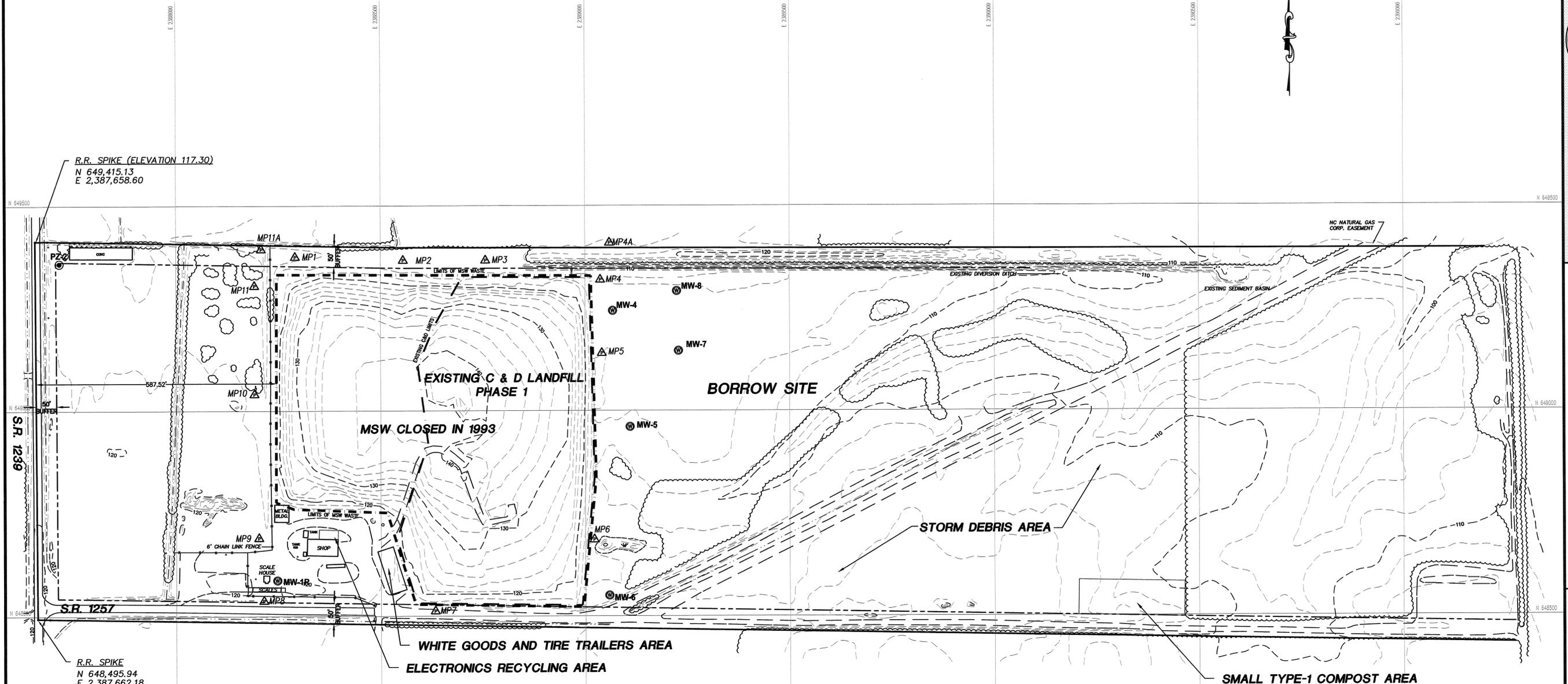
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LEGEND

- EXISTING DIVERSION DITCH/DRAINAGE FEATURE
- - - EXISTING CONTOURS
- BUFFER
- PROPERTY
- LIMITS OF MSW WASTE
- CURRENT LIMITS OF C&D WASTE
- ⊙ MW-5 EXISTING MONITORING WELLS
- ⊙ PZ-2 EXISTING PIEZOMETER
- △ MP3 EXISTING METHANE MONITORING PROBES

NOTES

THIS MAP WAS GENERATED FROM AERIAL PHOTOS FLOWN ON 2-22-94 BY TRIANGLE AERIAL MAPPING, SUPPLEMENTED WITH SURVEYS BY MUNICIPAL ENGINEERING SERVICES CO., PA.



Engineering Company, P.A.

Municipal Services

P.O. BOX 940 BOONE, N.C. 28607
(828) 282-1767
P.O. BOX 839 MOREHEAD CITY, N.C. 28557
(910) 772-5893

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

DATE	REV.	DESCRIPTION
11/4/11	3	REV'D PER INCORP LETTER DATED 11/4/11
10/12/11	2	REV'D PER INCORP LETTER DATED 7/1/10
3/2/10	1	ADDED EXISTING FEATURES

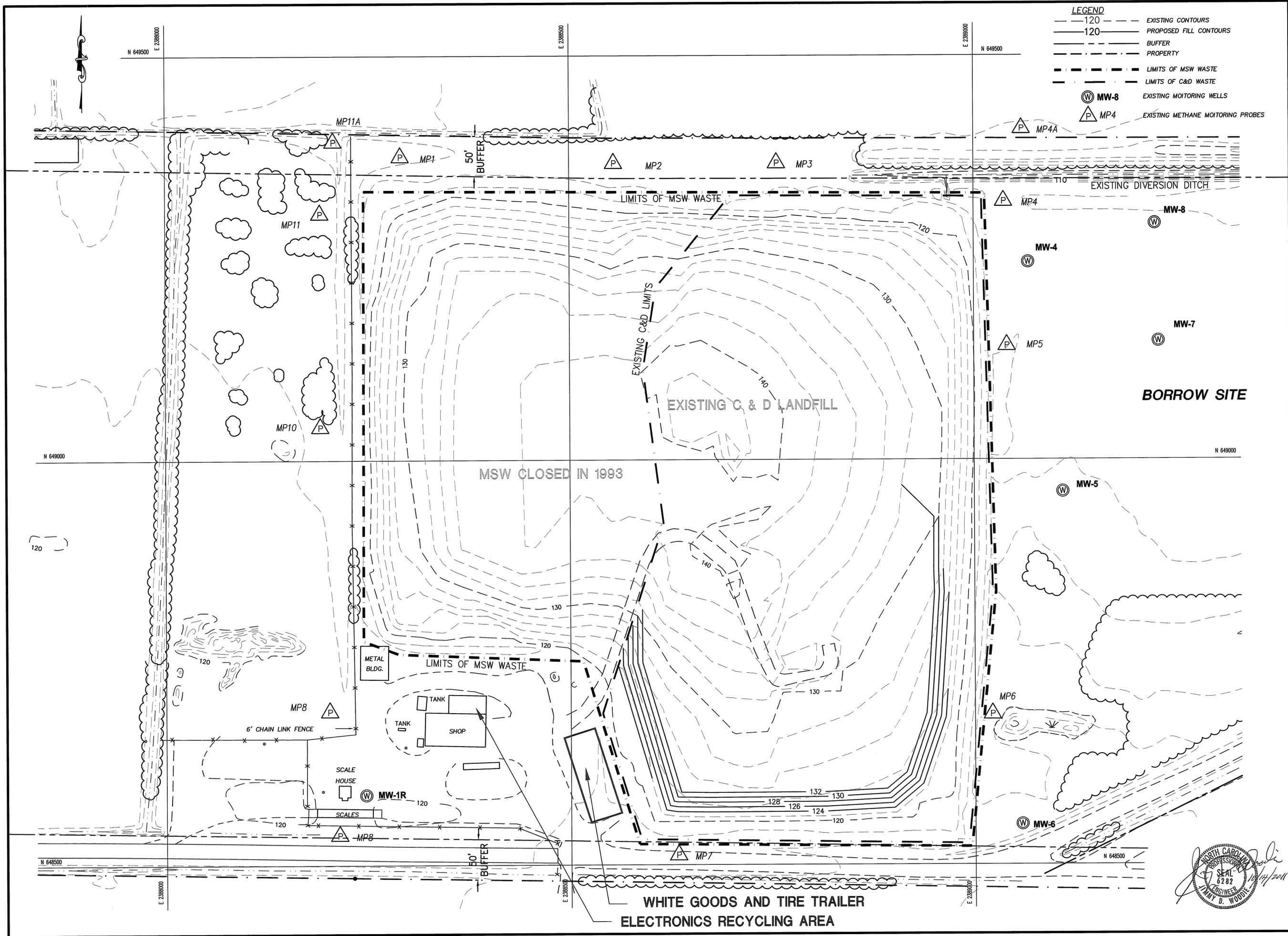
OPERATIONS PLAN
FACILITY PLAN AND
EXISTING CONDITIONS AS OF 11/20/07

SCALE: 1" = 120'
DATE: 5/21/08
DRWN. BY: L. HAMPTON
CHKD. BY: J. WOODIE
PROJECT NUMBER: G07061
DRAWING NO. CD1 SHEET NO. 3 OF 8



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- LEGEND**
- - - 120 - - - EXISTING CONTOURS
 - - - 120 - - - PROPOSED FILL CONTOURS
 - - - - - BUFFER
 - - - - - PROPERTY
 - - - - - LIMITS OF MSW WASTE
 - - - - - LIMITS OF C&D WASTE
 - ⊙ MW-8 EXISTING MONITORING WELLS
 - △ MP4 EXISTING METHANE MONITORING PROBES



Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 262-1787

Municipal Services
 LICENSE NUMBER: C-0281
 P.O. BOX 97 GARNER, N.C. 27529
 (919) 772-4343 P.O. BOX 636 MORRISHEAD CITY, N.C. 28457
 (252) 726-8461

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

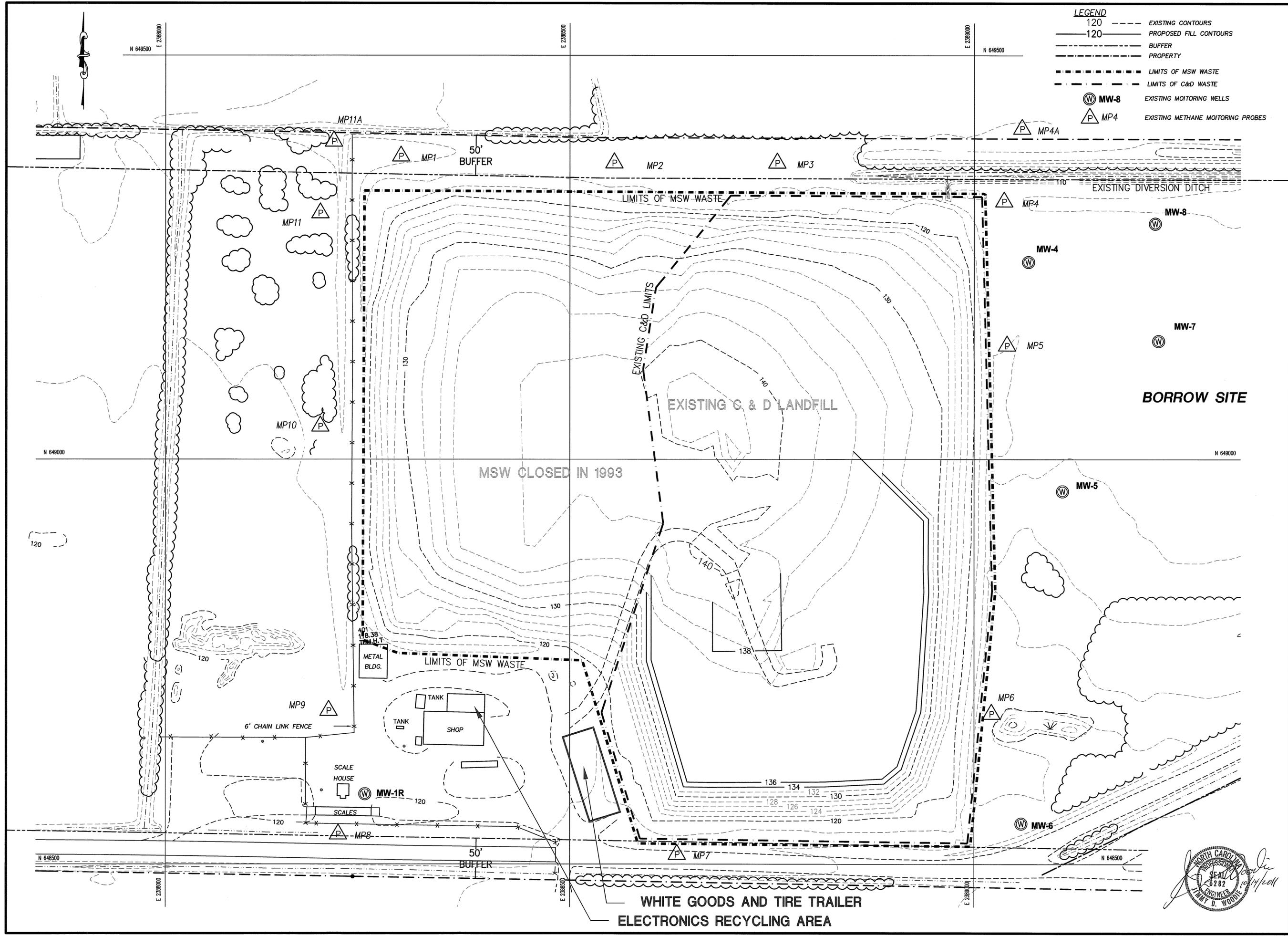
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3/2/10	LCH	1	ADDED EXISTING FEATURES

SCALE: 1" = 50'
 DATE: 12/14/07
 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE

PROJECT NUMBER: **G07061**
 DRAWING NO.: **CD2** SHEET NO.: **4 OF 8**



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Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 292-1767

Municipal Services
 LICENSE NUMBER: C-0281
 P.O. BOX 87 GARNER, N.C. 27824
 (919) 772-5393

P.O. BOX 528 MOREHEAD CITY, N.C. 28567
 (252) 726-3461

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

10/12/11	UHC	2	REVISED PER INCHIBR LETTER DATED 7/1/10
3/2/10	LCH	1	ADDED EXISTING FEATURES
DATE	BY	REV.	DESCRIPTION

SCALE: 1" = 50'

DATE: 12/14/07

DRWN. BY: L. HAMPTON

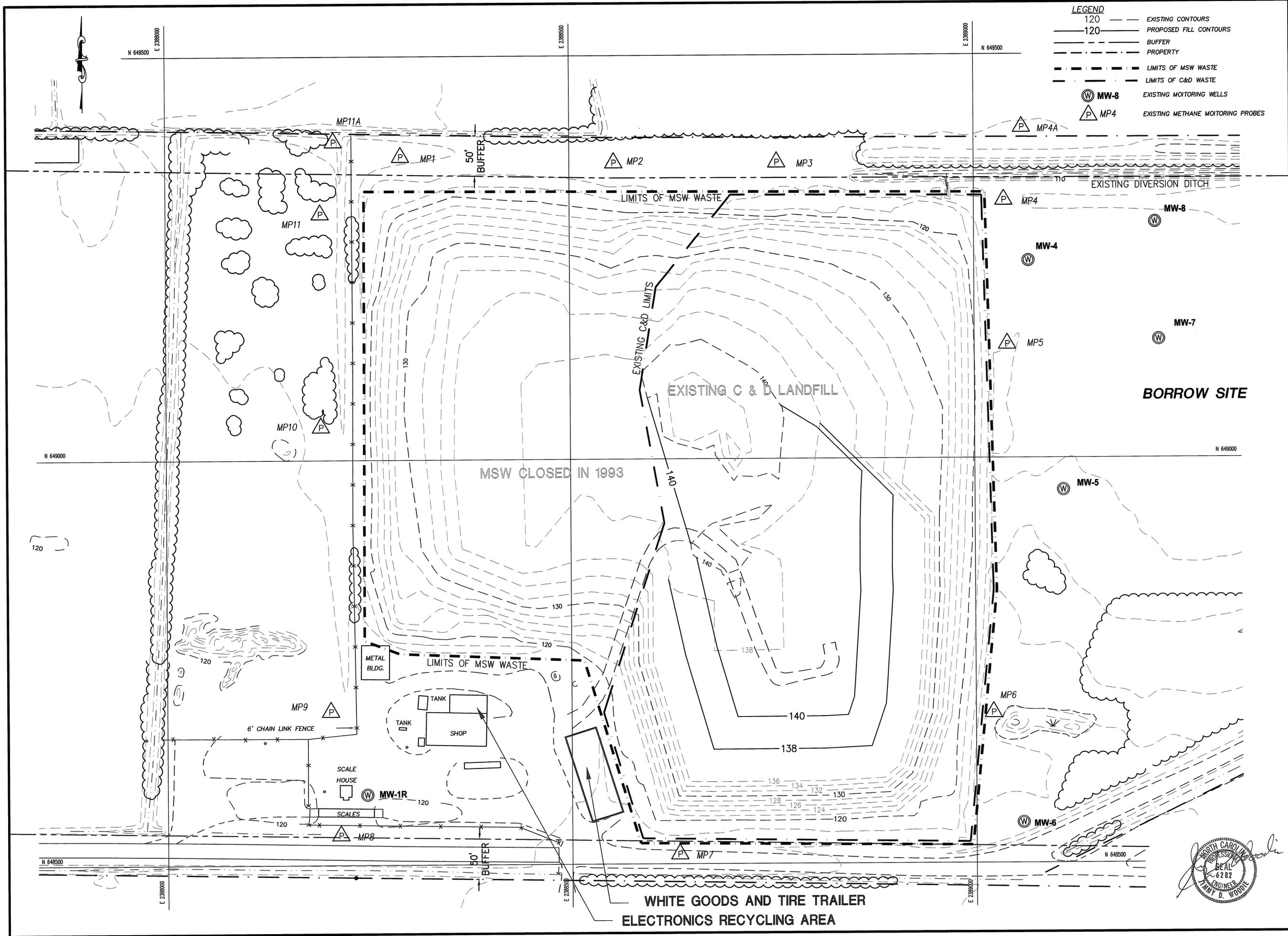
CHKD. BY: J. WOODIE

PROJECT NUMBER: G07061

DRAWING NO. CD3 SHEET NO. 5 OF 8



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Engineering Company, P.A.
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 (828) 282-1787

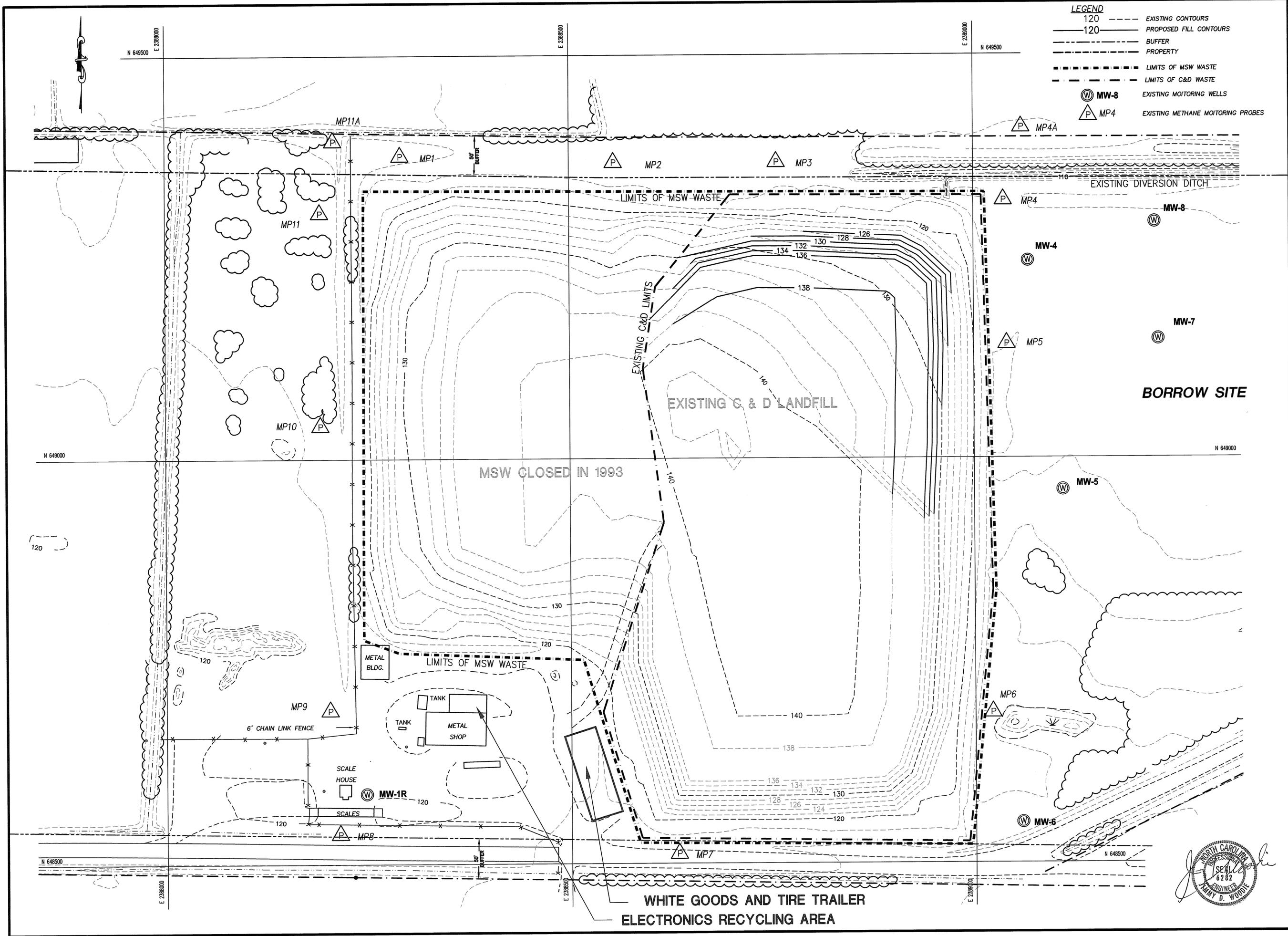
Municipal Services
 LICENSE NUMBER: C-0281
 P.O. BOX 87 GARNER, N.C. 27529
 (919) 772-6993 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 728-9451

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
10/12/11	LHC	3	REVISED PER INDEAR LETTER DATED 7/1/10
3/2/10	LCH	2	ADDED EXISTING FEATURES
2/23/09	LCH	1	REVISED FILL SLOPES

SCALE: 1" = 50'
 DATE: 12/14/07
 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07061
 DRAWING NO. CD4 SHEET NO. 6 OF 8

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Engineering Company, P.A.
 P.O. BOX 348 BOONE, N.C. 28607
 (828) 262-1767

Municipal Services
 P.O. BOX 87 GARNER, N.C. 27529
 (919) 772-6993

LICENSE NUMBER: C-2821

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY REVISION
 GREENE COUNTY
 NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
10/12/11	LHC	3	REVISED PER NCEMNR LETTER DATED 7/1/10
3/2/10	LCH	2	ADDED EXISTING FEATURES
2/23/09	LCH	1	REVISED FILL SLOPES

SCALE: 1" = 50'

DATE: 12/14/07

DRWN. BY: L. HAMPTON

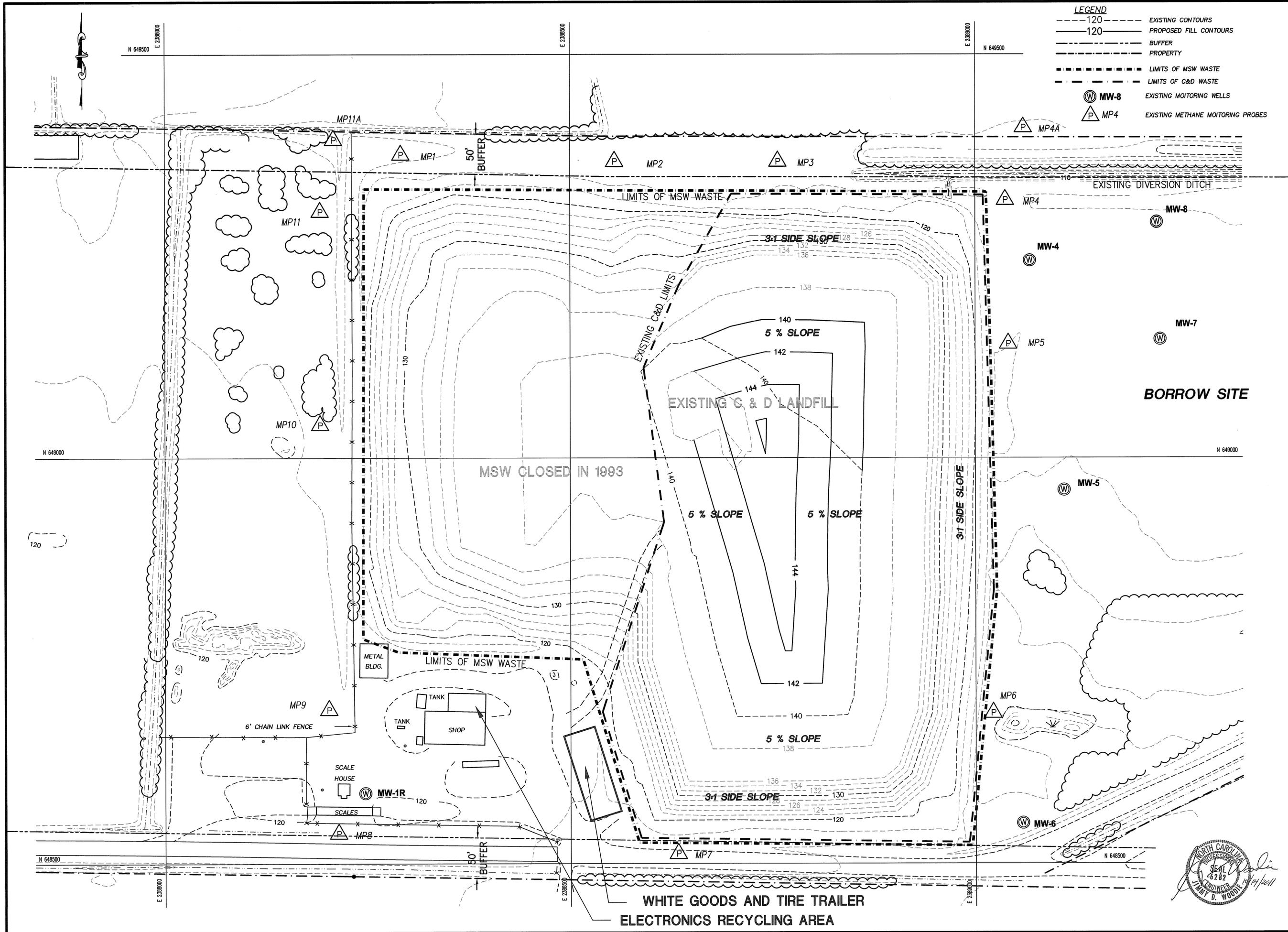
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PROJECT NUMBER: G07061

DRAWING NO. CD5 SHEET NO. 7 OF 8



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LEGEND

--- 120 ---	EXISTING CONTOURS
--- 120 ---	PROPOSED FILL CONTOURS
---	BUFFER
---	PROPERTY
---	LIMITS OF MSW WASTE
---	LIMITS OF C&D WASTE
⊙ MW-8	EXISTING MONITORING WELLS
△ MP4	EXISTING METHANE MONITORING PROBES

Engineering Company, P.A.

Municipal Services

LICENSE NUMBER: C-0281

P.O. BOX 87 GARNER, N.C. 27529
(919) 772-6588

P.O. BOX 848 BOONE, N.C. 28607
(828) 262-1797

P.O. BOX 828 WAREHOUSES CITY, N.C. 28687
(828) 726-9481

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY REVISION
GREENE COUNTY
NORTH CAROLINA**

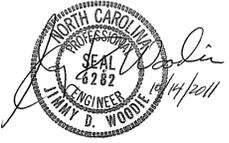
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LHC 3	ADDED EXISTING FEATURES			
LCH 2	REVISED FILL SLOPES			
LCH 1				
DATE	DESCRIPTION			
3/2/10				
2/23/09				

**OPERATION PLAN
5th YEAR FILL PLAN**

SCALE: 1" = 50'
DATE: 12/14/07
DRWN. BY: L. HAMPTON
CHKD. BY: J. WOODIE

PROJECT NUMBER: **G07061**

DRAWING NO. **CD6** SHEET NO. **8 OF 8**



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GREENE COUNTY CONSTRUCTION AND DEMOLITION LANDFILL FACILITY CLOSURE PLAN

Permit Number: 40-02

Site Location: 105 Landfill Road
Walstonburg, NC 27888

Applicant: Greene County

Applicant's Address: 229 Kingold Blvd., Suite D
Snow Hill, NC 28580

BOARD OF COMMISSIONERS

Jack Edmondson - Chairman
Jesse Tyndall - Vice-Chairman
Denny Garner
Bennie Heath
James T. Shackelford

COUNTY MANAGER

Don Davenport

SOLID WASTE DIRECTOR

David Jones

Engineer

**Municipal Engineering Services Company, P.A.
Garner, NC - Morehead City, NC - Boone, NC**

by  *J. Woodie*
**Professional Engineer
(Garner Office)**



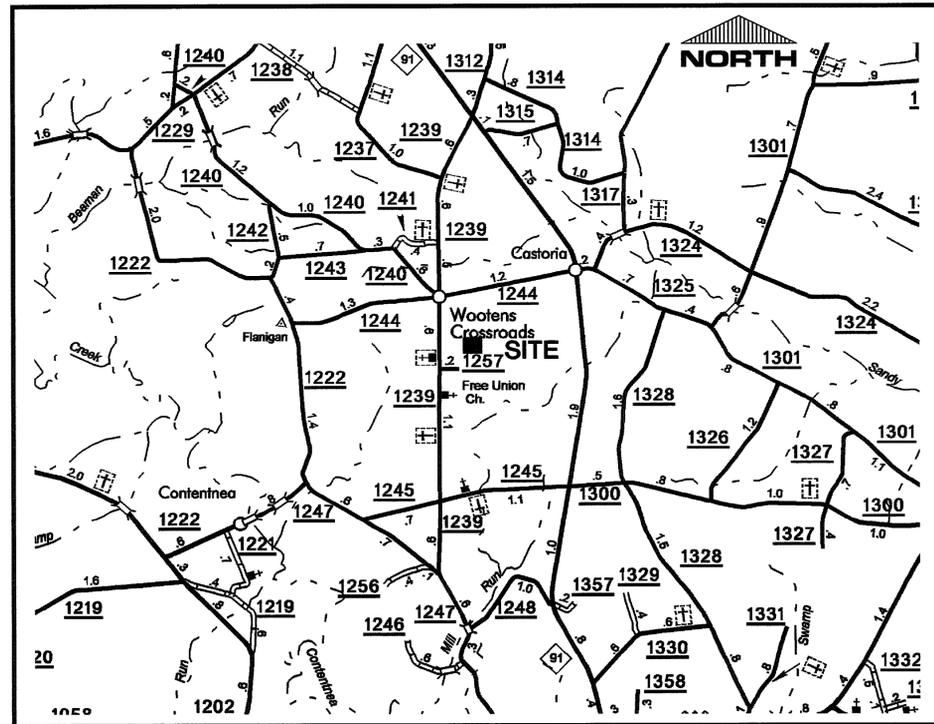
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3/2/10	LCH	2	ADDED CORPORATE LICENSE NUMBER TO TITLE BLOCK
2/23/09	LCH	1	REVISED PER DENR LETTER DATED 12/23/08.

SCALE: 1:1
DATE: 11/21/07
DRWN. BY: L. HAMPTON
CHKD. BY: J. WOODIE
PROJECT NUMBER
G07061
DRAWING NO. T1 SHEET NO. 1 OF 5

P:\SolidWaste\G07061-Greene Co. C&D Transition\dwg\CLOSURE\07061-CLU-REV3.dwg, 10/13/2011 10:10:07 AM, lch, lch

INDEX

SHEET NO.	DRAWING NO.	DESCRIPTION
1	T1	TITLE SHEET
2	T2	INDEX AND VICINITY MAP
3	CL1	EXISTING CONDITIONS AS OF 11/20/07 WITH FINAL FILL
4	CL2	METHANE VENTING PLAN
5	CL3	MISCELLANEOUS DETAILS
5A	PROF1	BASLELINE PROFILE AND CROSS SECTIONS



VICINITY MAP

CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA

Municipal Services
 Engineering Company, P.A.
 LICENSE NUMBER: C-0281
 P.O. BOX 87 GARNER, N.C. 27824
 (610) 772-6383
 P.O. BOX 828 MOREHEAD CITY, N.C. 28557
 (252) 725-9481

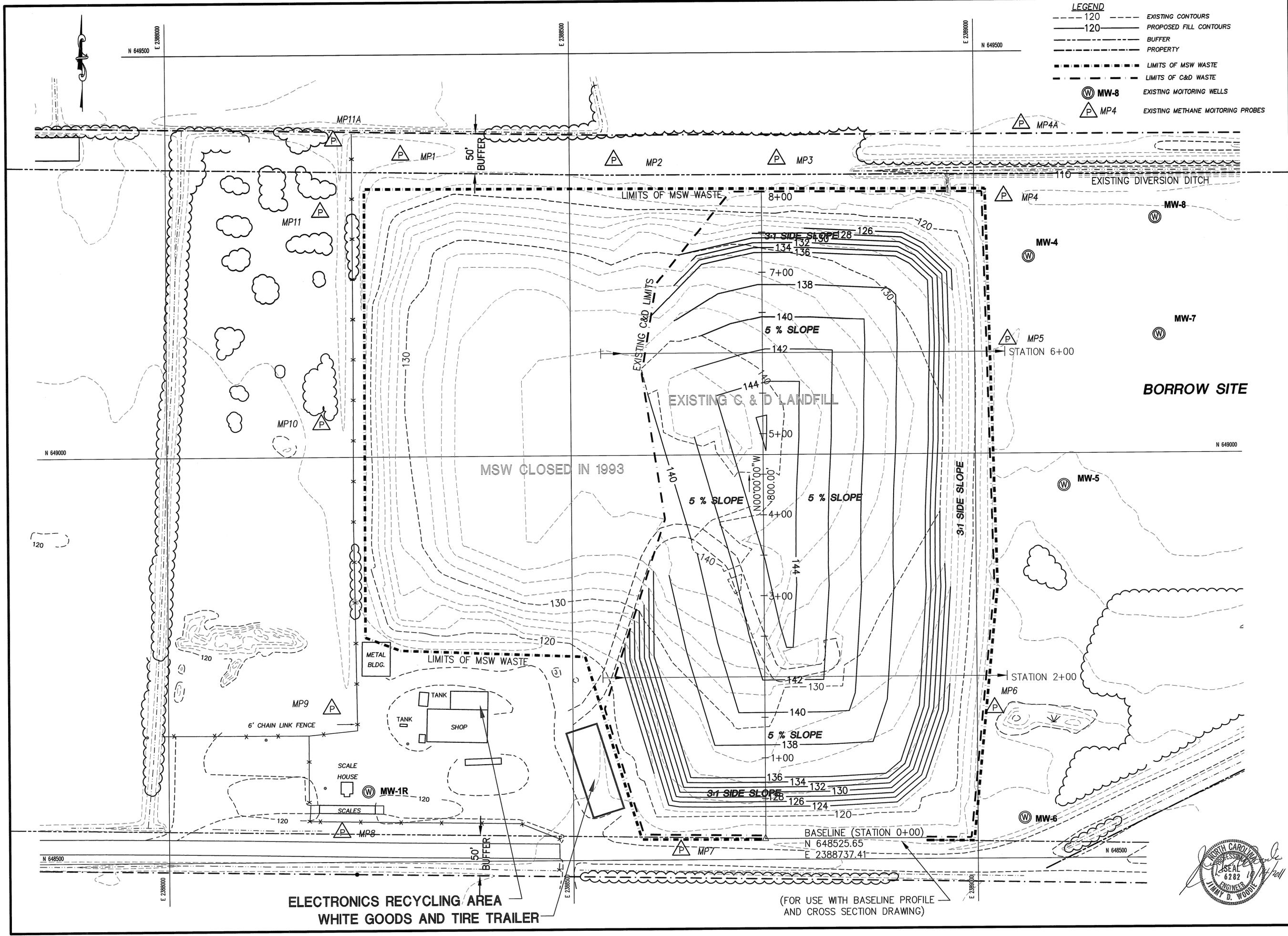


DATE	BY	REV.	DESCRIPTION
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3/2/10	LHC	1	ADDED SHEET 5A TO INDEX

SCALE: 1:1
 DATE: 11/21/07
 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07061
 DRAWING NO. 72 SHEET NO. 2 OF 5

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- LEGEND**
- - - 120 EXISTING CONTOURS
 - - - 120 PROPOSED FILL CONTOURS
 - - - BUFFER
 - - - PROPERTY
 - - - LIMITS OF MSW WASTE
 - - - LIMITS OF C&D WASTE
 - ⊙ MW-8 EXISTING MONITORING WELLS
 - △ MP4 EXISTING METHANE MONITORING PROBES



Engineering Company, P.A.
 P.O. BOX 348 BOONE, N.C. 28607
 (828) 282-1767
 (828) 726-3451
Municipal Services
 P.O. BOX 87 GARNER, N.C. 27829
 (919) 772-5393
 P.O. BOX 828 WAREHEAD CITY, N.C. 28587
 (919) 726-3451
 LICENSE NUMBER: C-0281

**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

DATE	REV.	DESCRIPTION
10/12/11	3	REVISED PER MODNR LETTER DATED 7/1/10
3/2/10	2	ADDED EXISTING FEATURES
2/23/09	1	REVISED FILL SLOPES AND ADDED BASELINE

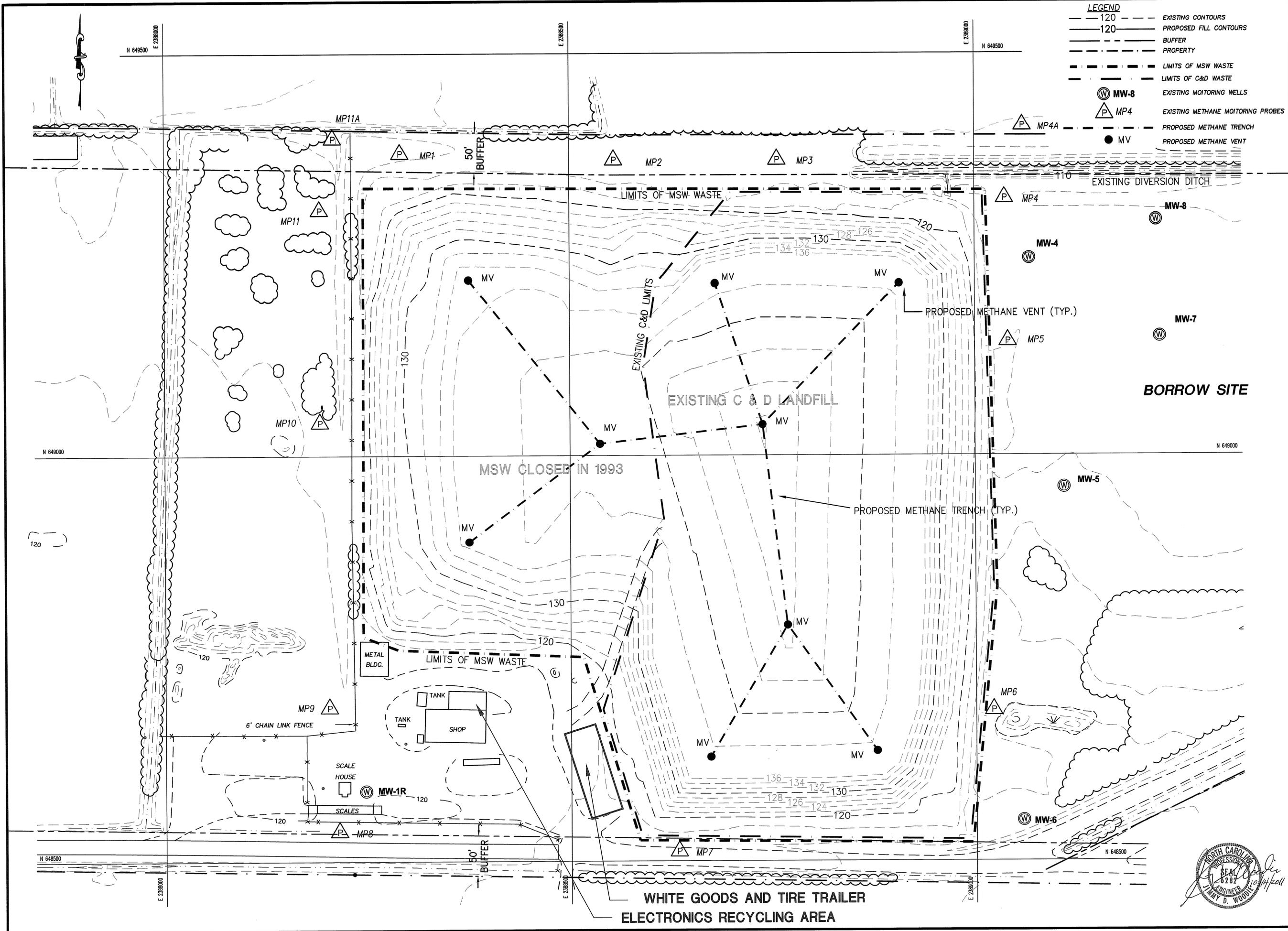
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 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07061
 DRAWING NO. CL1 SHEET NO. 3 OF 5



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(FOR USE WITH BASELINE PROFILE AND CROSS SECTION DRAWING)

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- LEGEND**
- 120 --- EXISTING CONTOURS
 - 120 --- PROPOSED FILL CONTOURS
 - --- BUFFER
 - --- PROPERTY
 - --- LIMITS OF MSW WASTE
 - --- LIMITS OF C&D WASTE
 - ⊙ MW-8 EXISTING MONITORING WELLS
 - ⊙ MP4 EXISTING METHANE MONITORING PROBES
 - ⊙ MP4A PROPOSED METHANE TRENCH
 - MV PROPOSED METHANE VENT

Engineering Company, P.A.
 P.O. BOX 349 BOONE, N.C. 28607
 (828) 292-7787
Municipal Services
 P.O. BOX 97 GARNER, N.C. 27529
 (919) 772-6983
 P.O. BOX 828 MOREHEAD CITY, N.C. 28567
 (252) 728-9451
 LICENSE NUMBER: C-0281

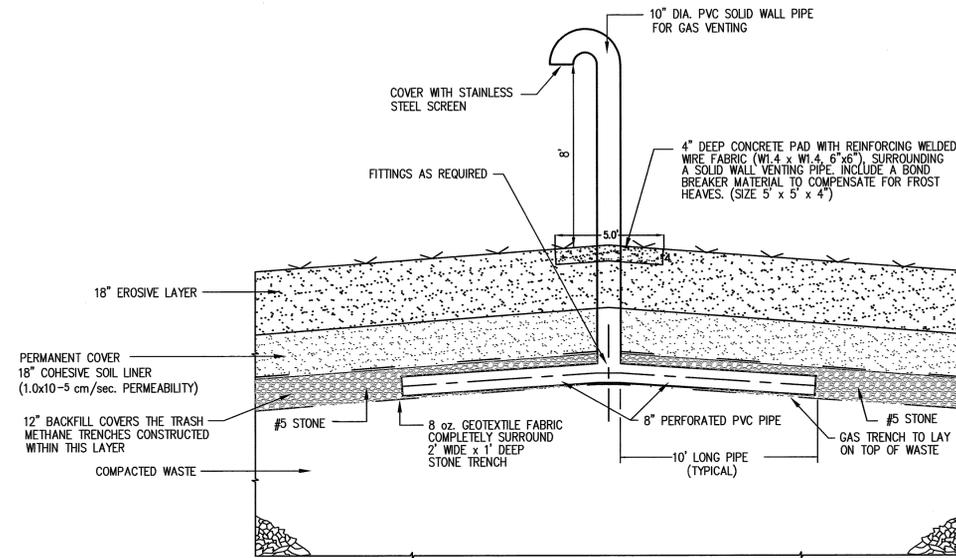
**CONSTRUCTION & DEMOLITION
 LANDFILL FACILITY
 GREENE COUNTY
 NORTH CAROLINA**

DATE	BY	REV.	DESCRIPTION
10/12/11	LHC	3	REVISED PER NCDENR LETTER DATED 7/1/10
3/2/10	LCH	2	ADDED EXISTING FEATURES
2/23/09	LCH	1	REVISED FILL SLOPES

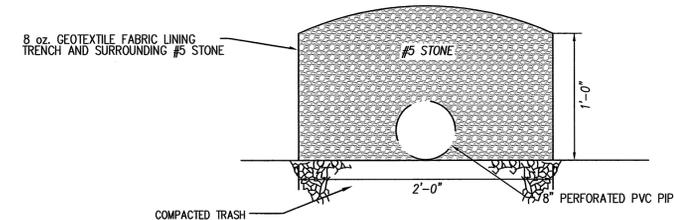
SCALE: 1" = 50'
 DATE: 12/14/07
 DRWN. BY: L. HAMPTON
 CHKD. BY: J. WOODIE
 PROJECT NUMBER: G07061
 DRAWING NO. CL2 SHEET NO. 4 OF 5



**WHITE GOODS AND TIRE TRAILER
 ELECTRONICS RECYCLING AREA**



TYPICAL METHANE GAS COLLECTION TRENCH CLOSURE DETAIL AND CAP COVER DETAIL
N.T.S.



PERMANENT METHANE TRENCH DETAIL
N.T.S.

SEEDBED PREPARATION (SP)

SP-1 FILL SLOPES 3:1 OR STEEPER TO BE SEED BY A HYDRAULIC SEEDER (PERMANENT SEEDING)

- 1) Leave the last 4-6 inches of fill loose and uncompacted, allowing rocks, roots, large clods and other debris to remain on the slope.
- 2) Roughen slope faces by making grooves 2-3 inches deep, perpendicular to the slope.
- 3) Spread lime evenly over slopes at rates recommended by soil tests.

SP-2 FILL SLOPES 3:1 OR STEEPER (TEMPORARY SEEDINGS)

- 1) Leave a loose, uncompacted surface. Remove large clods, rocks, and debris which might hold netting above the surface.
- 2) Spread lime and fertilizer evenly at rates recommended by soil tests.
- 3) Break up large clods and rake into a loose, uniform seedbed.
- 4) Rake to loosen surface just prior to applying seed.

SP-4 Gentle or flat slopes where topsoil is not used.

- 1) Remove rocks and debris.
- 2) Apply lime and fertilizer at rates recommended by soil tests; spread evenly and incorporate into the top 6" with a disk, chisel plow, or rotary tiller.
- 3) Break up large clods and rake into a loose, uniform seedbed.
- 4) Rake to loosen surface just prior to applying seed.

SEEDING METHODS (SM)

SM-1 FILL SLOPES STEEPER THAN 3:1 (PERMANENT SEEDING)

Use hydraulic seeding equipment to apply seed and fertilizer, a wood fiber mulch at 45 lb./1,000 s.f., and mulch topdressing.

SM-2 Gentle to flat slopes or temporary seedings

- 1) Broadcast seed at the recommended rate with a cyclone seeder, drop spreader, or cultipacker seeder.
- 2) Rake seed into the soil and lightly pack to establish good contact.

MULCH (MU)

MU-1 Steep slopes (3:1 or greater)

In mid-summer, late fall or winter, apply 100 lb./1,000 s.f. grain straw, cover with netting and staple to the slope. In spring or early fall use 45 lb./1,000 s.f. wood fiber in a hydroseeder slurry.

MU-2 High-maintenance vegetation and temporary seedings

Apply 90 lb./1,000 s.f. (4000 lb./acre) grain straw and tack with 0.1 gal./s.y. asphalt (11 gal./1,000 s.f.).

MU-3 Grass-lined channels

Install excelsior mat in the channel, extend up the channel banks to the highest calculated depth of flow, and secure according to manufacturer's specifications. On channel shoulders, apply 100 lb./1,000 s.f. grain straw and anchor with 0.1 gal./s.y. (11 gal./1,000 s.f.) asphalt.

MAINTENANCE (MA)

MA-1 Refertilize in late winter or early spring the following year. Mow as desired.

MA-3 Inspect and repair mulch and lining. Refertilize in late winter of the following year with 150 lb./acre 10-10-10 (3.5 lb./1,000 s.f.). Mow regularly to a height of 3-4 inches.

MA-4 Topdress with 10-10-10 fertilizer if growth is not fully adequate.

MA-5 Topdress with 50 lb./acre (1 lb./1,000 s.f.) nitrogen in March. If cover is needed through the following summer, overseed with 50 lb./acre Kabe lespedeza.

TEMPORARY SEEDING SPECIFICATIONS

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

Seeding Mixture species	Rate(lb./acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

SEEDING DATES

Mountains—Above 2500ft.: Feb. 15 – May 15
Below 2500ft.: Feb. 1 – May 1
Piedmont—Jan. 1 – May 1
Coastal Plain—Dec. 1 – Apr. 15

SOIL AMENDMENTS

Follow recommendations of soil tests or apply 2,000 lb./acre ground agricultural limestone and 750 lb./acre 10-10-10 fertilizer.

MULCH

Apply 4,000 lb./acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulching tool.

MAINTENANCE

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture species	Rate(lb./acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb./acre.

SEEDING DATES

Mountains—May 15 – Aug. 15
Piedmont—May 1 – Aug. 15
Coastal Plain—Apr. 15 – Aug. 15

SOIL AMENDMENTS

Follow recommendations of soil tests or apply 2,000 lb./acre ground agricultural limestone and 750 lb./acre 10-10-10 fertilizer.

MULCH

Apply 4,000 lb./acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulching tool.

MAINTENANCE

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture species	Rate(lb./acre)
Rye (grain)	120

SEEDING DATES

Mountains—Aug. 15 – Dec. 15
Coastal Plain and Piedmont—Aug. 15 – Dec. 30

SOIL AMENDMENTS

Follow recommendations of soil tests or apply 2,000 lb./acre ground agricultural limestone and 1,000 lb./acre 10-10-10 fertilizer.

MULCH

Apply 4,000 lb./acre straw. Anchor straw by tacking with asphalt, straight can be used as a mulching tool.

MAINTENANCE

Repair and refertilize damaged areas immediately. Topdress with netting, or a mulch anchoring tool. A disk with blades set nearly 50 lb./acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb./acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

PERMANENT SEEDING SPECIFICATIONS

PERMANENT SEEDING REQUIREMENTS (N.C. NO. 1CP)

SEEDING MIXTURE

Species	Rate (lb./acre)
Tall fescue	80
Pensacola Bahiagrass	50
Sericea lespedeza	30
Kobe lespedeza	10

SEEDING NOTES

1. From Sept. 1–Mar. 1, use unscarified sericea seed.
2. On poorly drained sites omit sericea and increase Kobe to 30 lb./acre.
3. Where a neat appearance is desired, omit sericea and increase Kobe to 40 lb./acre.

NURSE PLANTS

Between Apr. 15 and Aug. 15, add 10 lb./acre German millet or 15 lb./acre Sudangrass. Prior to May 1 or after Aug. 15, add 25 lb./acre rye (grain).

SEEDING DATES

	BEST	POSSIBLE
Early spring:	Aug. 25–Sept. 15	Aug. 20–Oct. 25
Fall:	Sept. 1–Sept. 30	Sept. 1–Oct. 31

SOIL AMENDMENTS

Apply lime and fertilizer according to soil tests, or apply 3000–5000 lb./acre ground agricultural limestone (use the lower rate on sandy soils) and 1,000 lb./acre 10-10-10 fertilizer.

MULCH

Apply 4,000 lb./acre small grain straw or equivalent cover of another suitable mulch. Anchor straw by tacking with asphalt, netting, or riving or by crimping with a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

MAINTENANCE

If growth is less than fully adequate, refertilize in the second year, according to soil tests or topdress with 500 lb./acre 10-10-10 fertilizer. Mow as needed when sericea is omitted from the mixture. Reseed, fertilize and mulch damaged areas immediately.

CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA

Engineering
Company, P.A.
P.O. BOX 349 BOONE, N.C. 28607
(828) 282-1787
Municipal
Services
P.O. BOX 87 GARNER, N.C. 27626
(919) 772-5393
P.O. BOX 828 MOREHEAD CITY, N.C. 28557
(919) 728-9451

DATE	BY	DESCRIPTION
11/4/11	LHC	REV'D PER INQUIRY LETTER DATED 11/4/11
10/12/11	LHC	REV'D PER INQUIRY LETTER DATED 10/12/11, NO CHANGES THIS SHEET
3/22/10	LCH	REV'D METHANE PROBE DETAIL
4/28/09	LCH	REV'D SEEDING SPECIFICATIONS

SCALE: 1:1

DATE: 12/14/07

DRWN. BY: L. HAMPTON

CHKD. BY: J. WOODIE

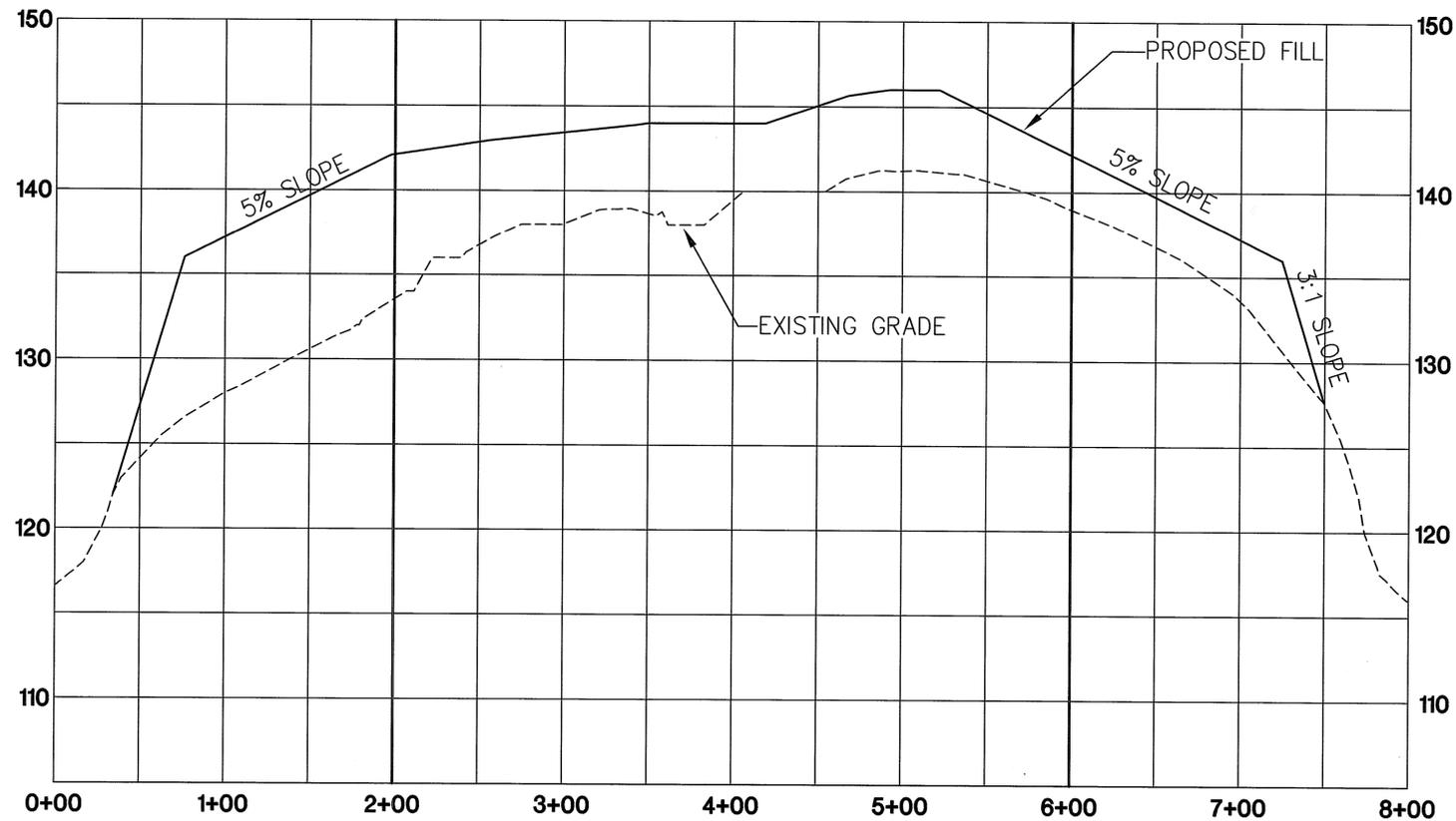
PROJECT NUMBER

G07061

DRAWING NO. SHEET NO.

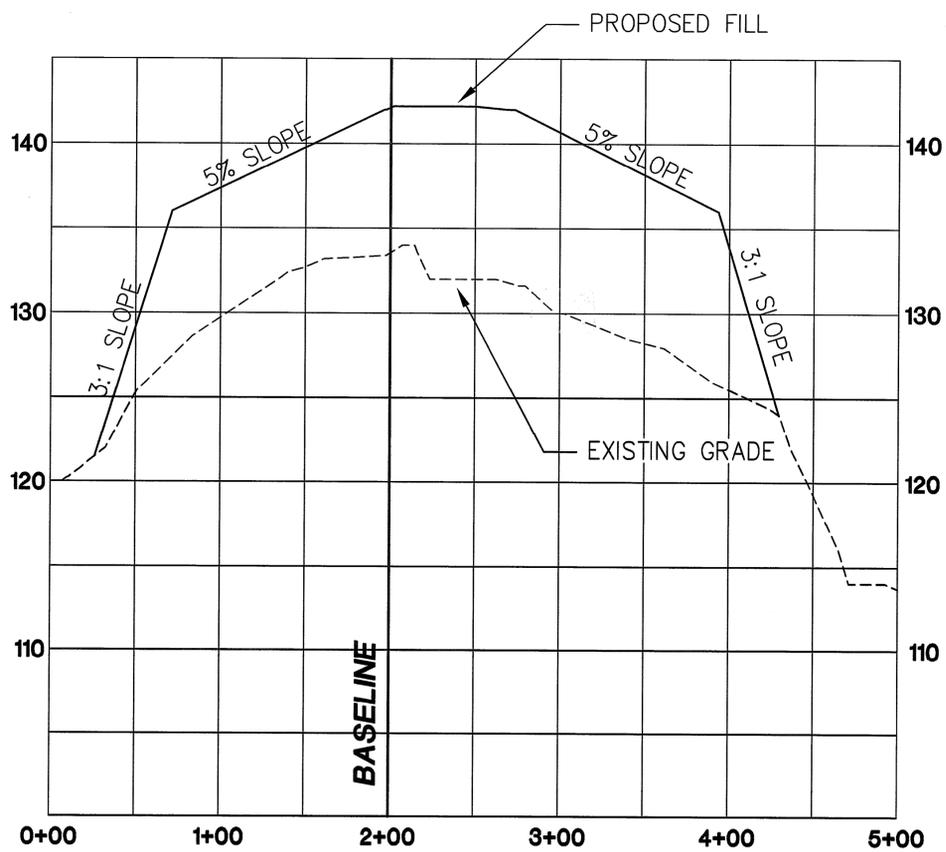
CL3 5 OF 5



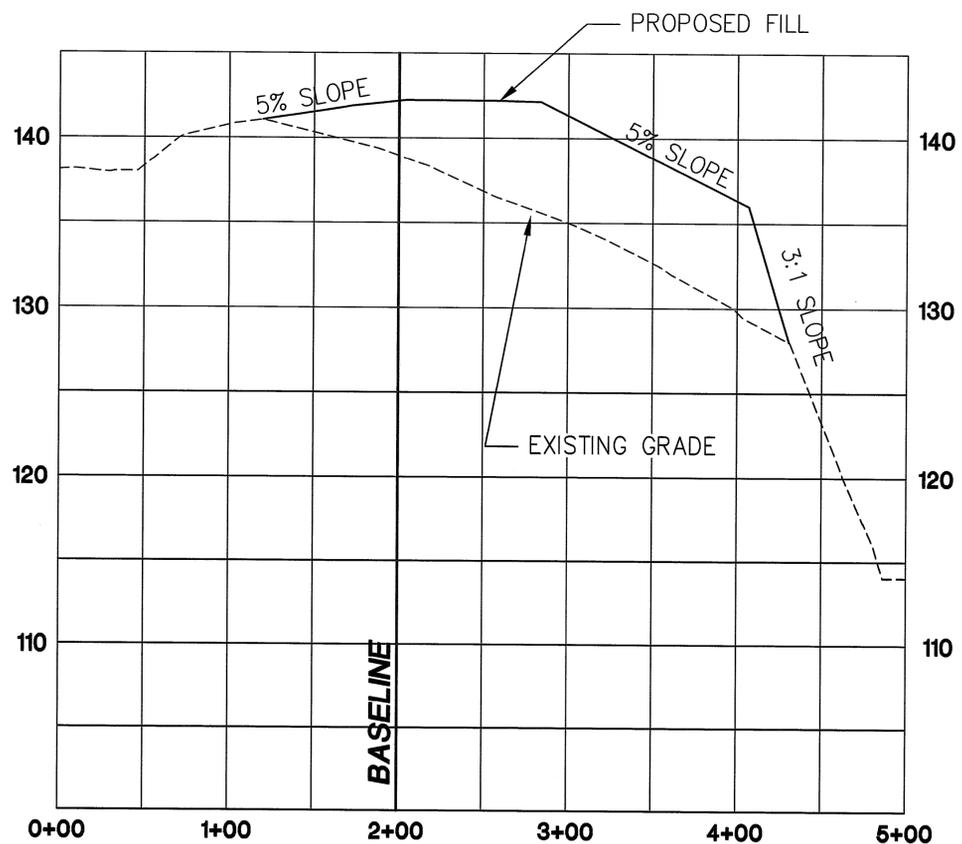


BASELINE PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

NOTE
THESE CROSS SECTIONS ARE INTENDED TO SHOW THE CROSS SECTIONS AT SPECIFIC POINTS AS DEFINED BY THE BASELINE GRID ON SHEET 3 OF 5.



STATION 2+00
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



STATION 6+00
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



Engineering Company, P.A.
P.O. BOX 349 BOONE, N.C. 28607
(828) 295-1787

Municipal Services
LICENSE NUMBER: C-0281
P.O. BOX 87 GARNER, N.C. 27629
(919) 772-6383

**CONSTRUCTION & DEMOLITION
LANDFILL FACILITY
GREENE COUNTY
NORTH CAROLINA**

10/24/11	DATE	1	REV.	REV.	DESCRIPTION
LHC	BY				
CLOSURE PLAN BASELINE PROFILE AND CROSS SECTIONS					
SCALE: 1" = 50'					
DATE: 8/24/09					
DRWN. BY: L. HAMPTON					
CHKD. BY: J. WOODIE					
PROJECT NUMBER G07061					
DRAWING NO. PROF1			SHEET NO. 5A		

P:\SolidWorks\G07061-Greene Co. C&D Transition\Drawings\CLOSURE\07061-CISA-REV1.dwg, 10/13/2011 9:24:22 AM, khich



ECS CAROLINAS, LLP

Geotechnical • Construction Materials • Environmental • Facilities March 25, 2010

Mr. Wayne Sullivan, PLS
Municipal Engineering Services Co. PA
The Corporate Center
1140 Benson Highway, Suite 220
Garner, NC 27529

**RE: Report of Geotechnical Engineering Services
Greene County C & D Landfill Slope Stability
105 Landfill Road
Walstonburg, North Carolina
ECS Report Number: 06.17016**



Dear Mr. Sullivan:

ECS Carolinas, LLP (ECS) has completed the geotechnical slope stability analysis for the proposed Greene County Construction and Debris Landfill as requested by Municipal Engineering Services Company, PA (MESCO). The proposed landfill slopes are at 3 horizontal to 1 vertical (3H:1V).

Project Information

Based on the information provided by MESCO, it is our understanding that the new landfill will be constructed above the municipal landfill that was closed in 1993. The new landfill will result in a maximum waste height of approximately 100 feet. The permanent side slopes for the cap will have an inclination of 3H:1V.

ECS has been provided with well installation logs performed by others in areas to the southwest and east of the landfill. Selected boring logs are included in Appendix A, along with Figure 1 showing the site location and Figure 2 showing the approximate boring locations and slope stability section considered in the analysis. Groundwater was encountered within the borings ranging from approximately 1.5 to 17 feet below the prevailing ground surface.

Engineering Analyses

Analyses were performed to determine global slope stability of the landfill. These analyses were based on the design drawings provided by MESCO. Shear strength of the soil was estimated based on the soil descriptions on the provided boring logs and our previous experience. The analyses were performed by engineers specializing in geotechnical engineering and copies of the slope stability analyses are attached in Appendix B.

The waste fill was evaluated for slope stability analysis using circular potential failure mechanism. One section was selected for the stability analysis, which is considered representative of the most unfavorable conditions. The location of the analyzed section is shown on the Slope Stability Location Diagram in Appendix A. The slope stability analysis

representative of the most unfavorable conditions. The location of the analyzed section is shown on the Slope Stability Location Diagram in Appendix A. The slope stability analysis was performed using the proprietary Slide 5.0 computer program. The modeled slope configuration was based on the topographic information and site grading plan provided to us by MESCO, while the soil strata information, index properties and engineering properties used in these analyses were estimated based on the soil descriptions on the provided preliminary boring logs and our previous experience. For the pseudostatic analysis of the slope, we used an earthquake ground motion having a 2-percent probability of exceedance within a 50-year period (2,475 year return period).

The factors of safety were determined for both static and seismic loading, using the pseudo-static method. According to the USGS Map, Oct 2002, the seismic acceleration at the bed rock level based on the probabilistic earthquake (2,475 year return period) for this site is 0.07g. The seismic coefficient, k_s , for the site is 0.035g.

The resulting factors of safety were computed to exceed 1.5 for permanent slopes under static loading conditions and more than 1.1 for seismic conditions. The results of the slope stability analyses are presented in Appendix B.

In conclusion, the results of the geotechnical analysis indicate that the 3H: 1V (permanent) slope configuration will be stable and provide an adequate factor of safety.

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope is limited to the specific project and locations described herein and our description of the project represents our understanding of the significant aspects relative to soil and foundation characteristics. In the event that any changes in the nature or location of the proposed construction outlined in this report are planned, we should be informed so that the changes can be reviewed and the conclusions of this report modified or approved in writing by the geotechnical engineer. It is recommended that all construction operations dealing with earthwork and foundations be reviewed by an experienced geotechnical engineer to provide information as to whether the design requirements are fulfilled in the actual construction. If you wish, we would welcome the opportunity to provide field construction services for you during construction.

The data submitted in this report are based upon the information obtained from the soil borings and tests performed by others at the locations as indicated on the information referenced in this report. This report does not reflect any variations which may occur between the borings. In the performance of the subsurface exploration, specific information is obtained at specific locations at specific times. However, it is a well known fact that variations in soil conditions exist on most sites between boring locations and also such situations as groundwater levels vary from time to time. The nature and extent of variations may not become evident until the course of construction. If site conditions vary from those identified during the explorations, the recommendations contained in this report may require revision.

Report of Geotechnical Engineering Services
Greene County C & D Landfill Slope Stability
Walstonburg, North Carolina
ECS Project Number: 06.17016

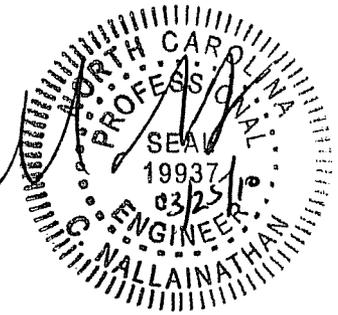
Thank you for the opportunity to work with you on this project. Should you have any questions or if we could be of further assistance, please do not hesitate to contact us.

Respectfully,

ECS CAROLINAS, LLP represented by:
Firm License No. F-1078



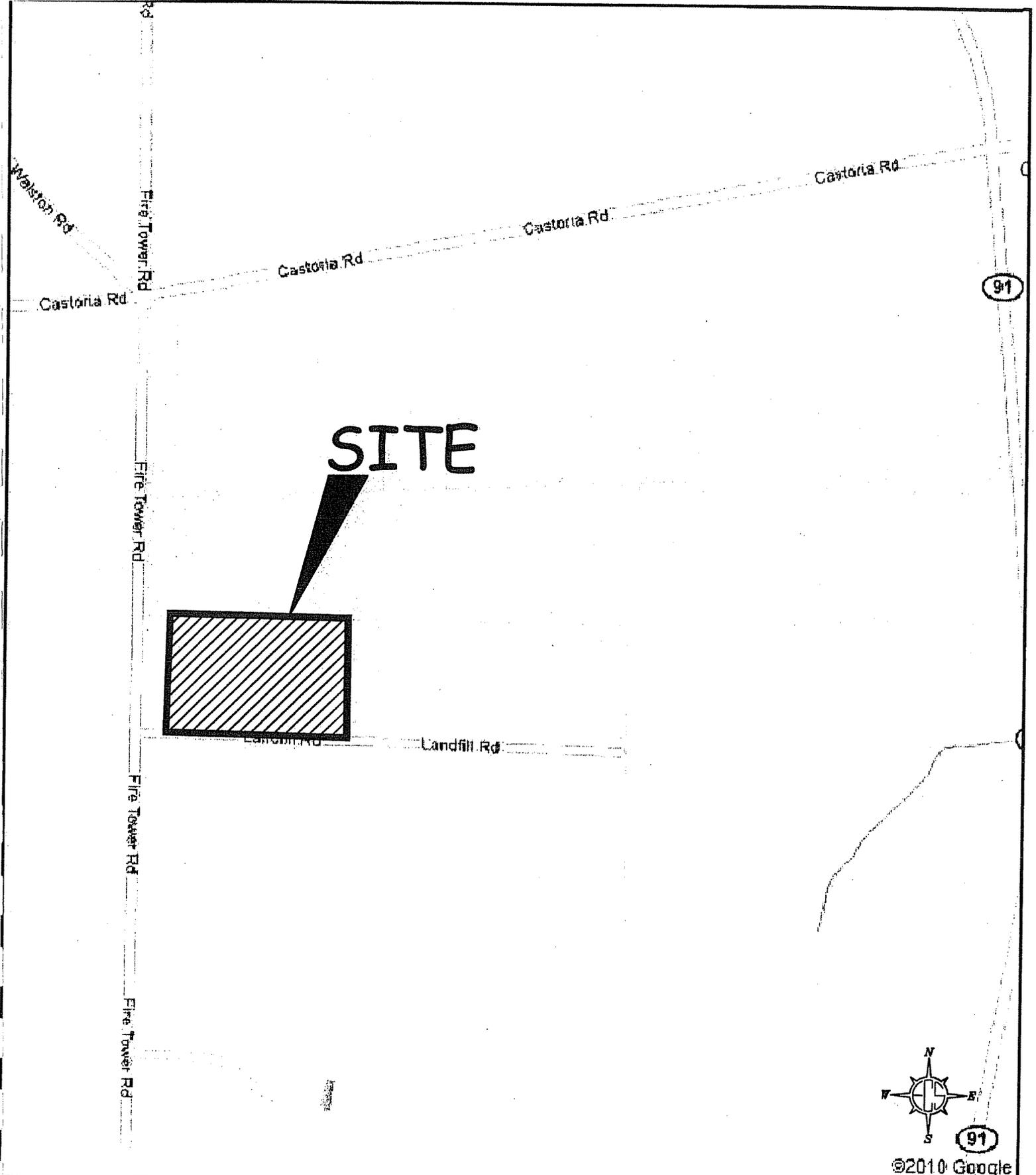
Matthew B. Olsen, PE
Geotechnical Department Manager
NC PE License No. 036537



C. (Nathan) Nallainathan, PE
Principal Engineer
NC PE License No. 019937

APPENDICES

APPENDIX A
FIGURES &
SELECTED BORING LOGS



**VICINITY
MAP**

MUNICIPAL ENGINEERING SERVICES CO.



**GREENE COUNTY C & D LANDFILL
35 LANDFILL ROAD**

WALSTONBURG, NORTH CAROLINA

ENGINEER	SCALE
MBO	NTS
DRAFTSMAN	PROJECT NO.
DAH	06:17016
REVISIONS	SHEET
	FIGURE 1
	DATE
	3-24-10

LEGEND

- SECTION ANALYZED
- MW-X (circle with X) - MONITORING WELL LOCATIONS (COMPLETED BY OTHERS)



**APPROXIMATE SLOPE STABILITY
LOCATION DIAGRAM**

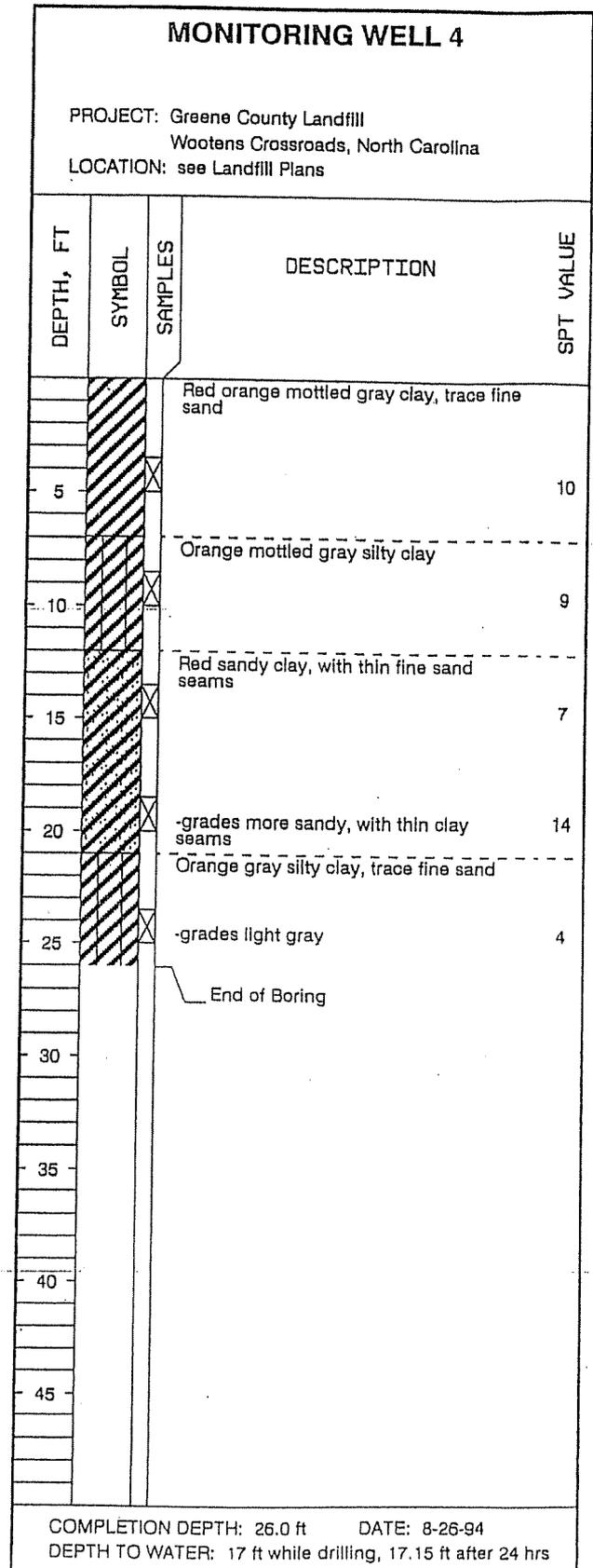
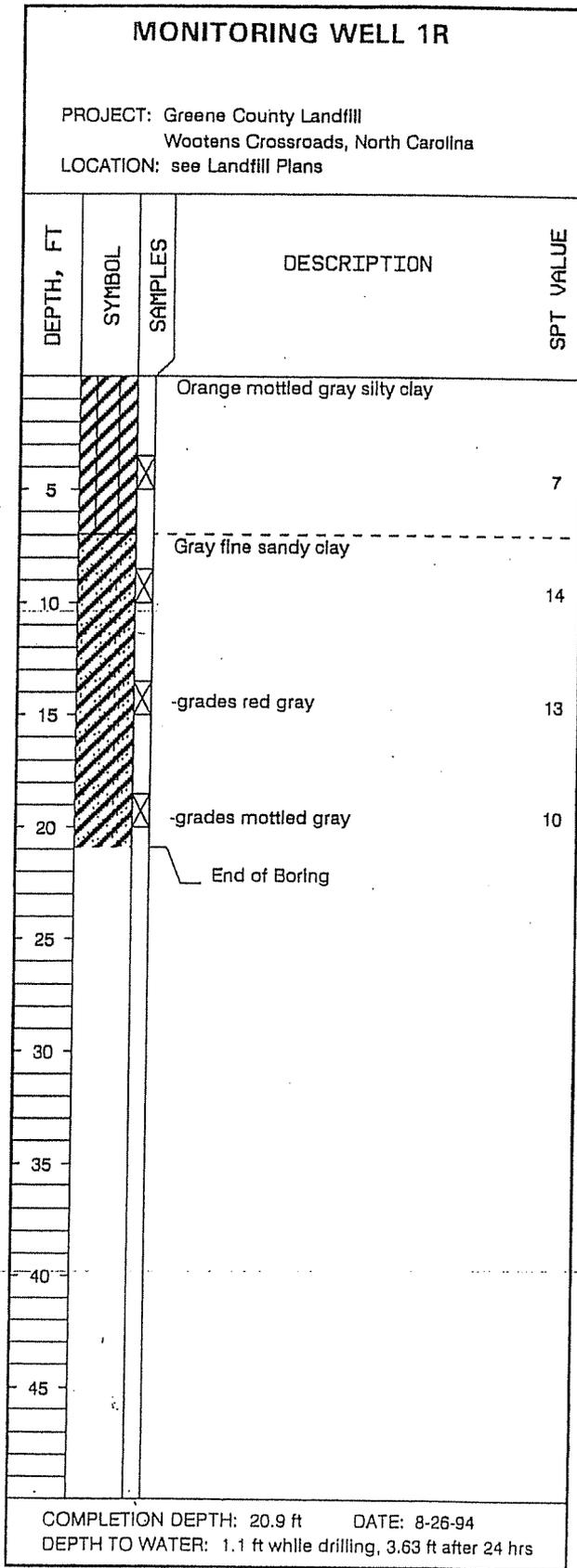


MUNICIPAL ENGINEERING SERVICES CO.

**GREENE COUNTY C & D LANDFILL
35 LANDFILL ROAD
WALSTONBURG, NORTH CAROLINA**

ENGINEER	MBO	SCALE	1"=150'
DRAFTSMAN	DAH	PROJECT NO.	06:17016
REVISIONS		SHEET	FIGURE 2
		DATE	3-24-10

REFERENCE DRAWING PROVIDED BY: MUNICIPAL ENGINEERING SERVICES COMPANY, P.A.



MONITORING WELL 5

PROJECT: Greene County Landfill
 Wootens Crossroads, North Carolina
 LOCATION: see Landfill Plans

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION	SPT VALUE
0			Tan silty clay	
5			-grades faintly orange mottled gray	8
			-grades red mottled	
			Gray fine sandy clay	
10				14
15			-grades red mottled gray	8
20			-with red sand seams	10
25			Orange clayey sand	8
30			-with seams of clay and fine sand	21
			End of Boring	
35				
40				
45				
COMPLETION DEPTH: 30.4 ft DATE: 8-28-94				
DEPTH TO WATER: 16.5 ft while drilling, 16.4 ft after 24 hrs				

MONITORING WELL 6

PROJECT: Greene County Landfill
 Wootens Crossroads, North Carolina
 LOCATION: see Landfill Plans

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION	SPT VALUE
0			Orange mottled gray silty clay, trace fine sand	
5				9
10			Orange mottled gray sandy clay	12
15			-grades light gray	8
20			-grades gray	9
25			-grades with fine sand seams	6
30			-grades dark gray	5
			End of Boring	
35				
40				
45				
COMPLETION DEPTH: 30.8 ft DATE: 8-29-94				
DEPTH TO WATER: 16 ft while drilling, 6.48 ft after 24 hrs				

LOG OF BORING: MW-7

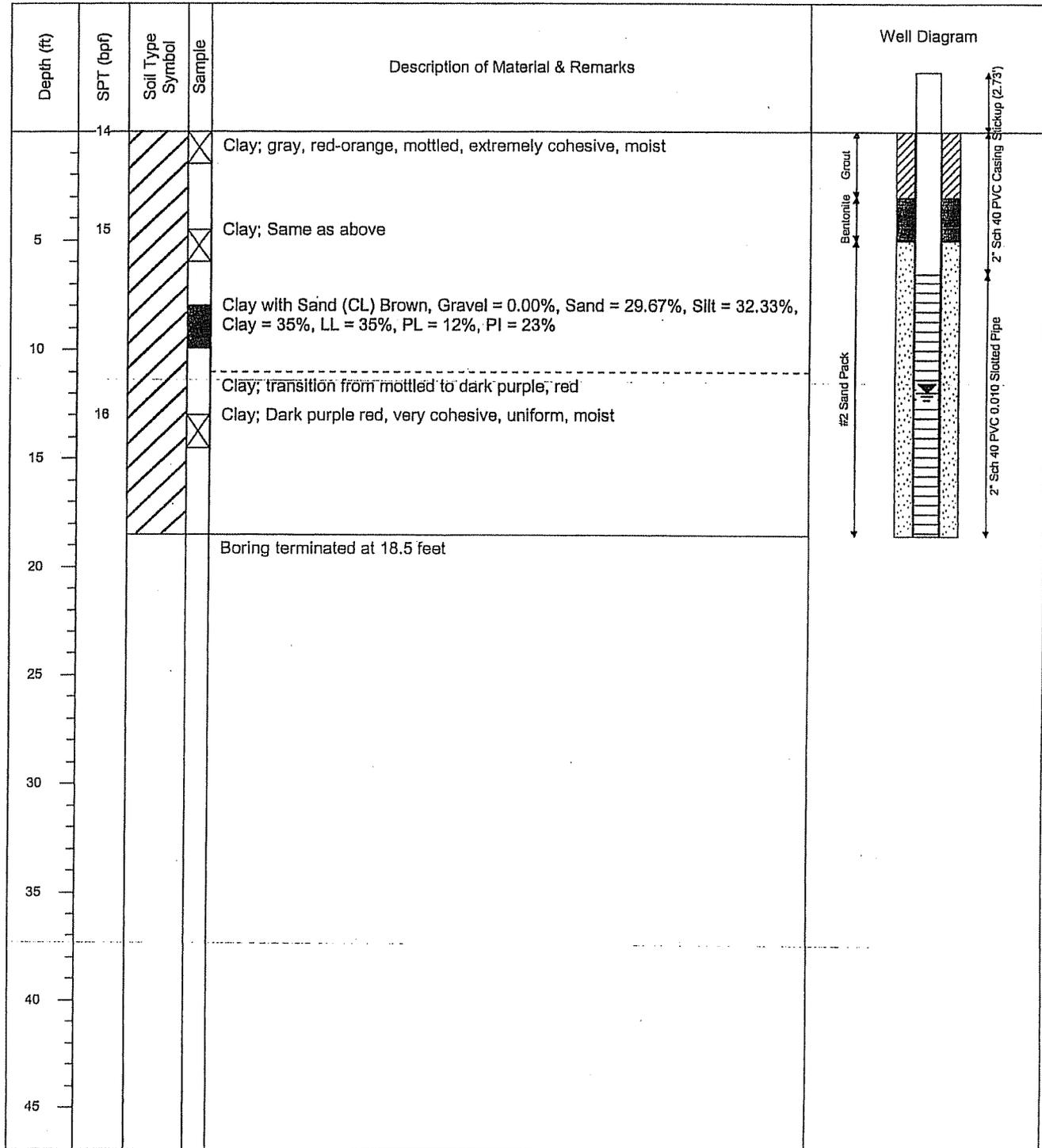
Greene County Closed Landfill

Project No. G07061.0

Drilling contractor: Derry's Well Drilling
 Drill rig & method: 8" OD HSA w/SS
 Logged by: J.Pfohl

Date started: 6/21/2007
 Date ended: 6/21/2007
 Completion depth: 18.50 ft
 Stickup height: 2.73 ft

Surface elevation: 107.75 ft (MSL)
 Top of pipe elevation: 110.48 ft (MSL)
 Depth to water (TOB): 11.99 ft
 Depth to water (24hrs): 11.88 ft



Municipal Engineering Services Company, P.A.

Operation/Construction Managers Civil/Sanitary Engineers Environmental Studies
 PO Box 97, Garner, North Carolina 27629 (919) 772-5393 PO Box 349, Boone, North Carolina 28607 (828) 262-1767

LOG OF BORING: MW-8

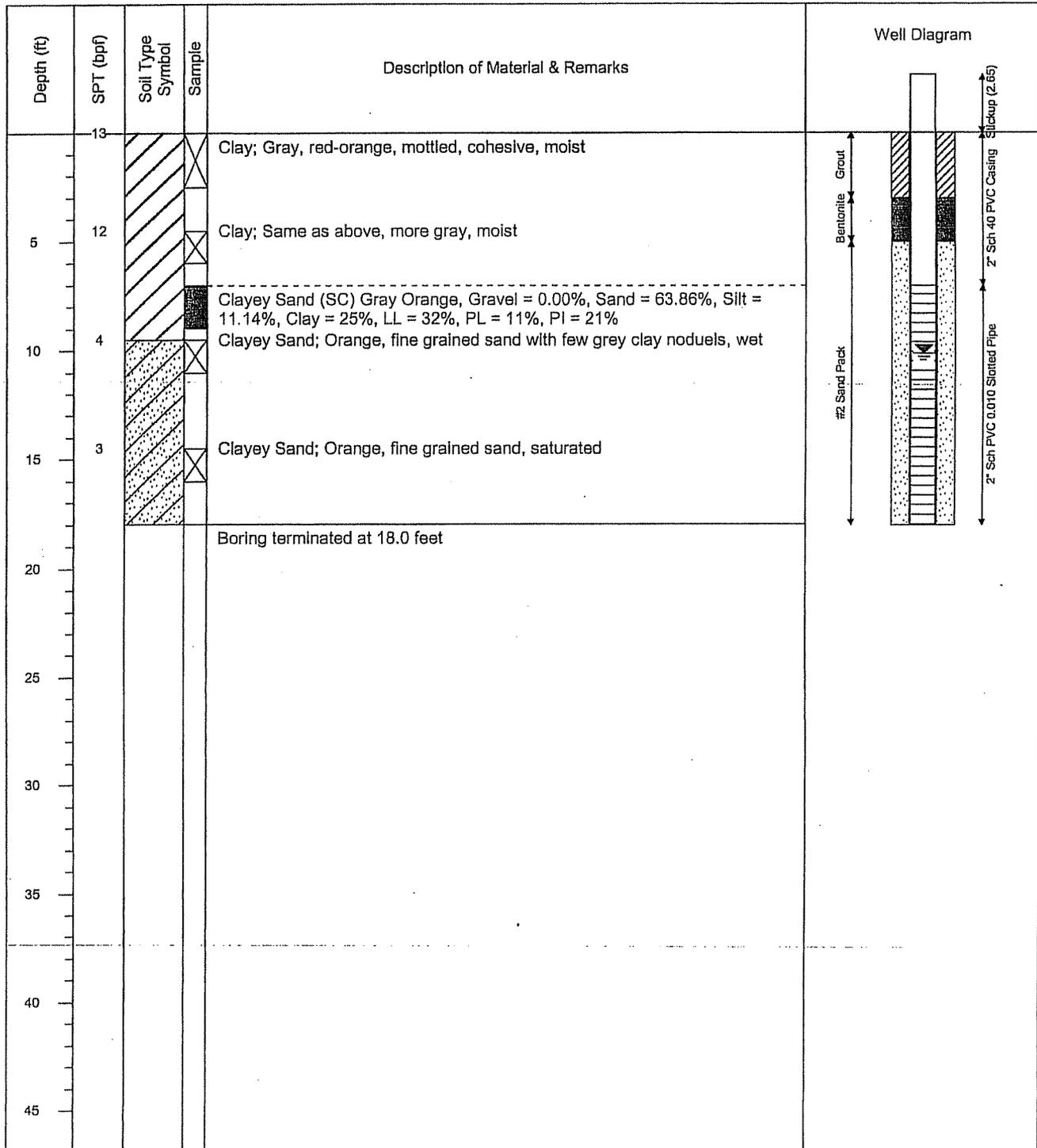
Greene County Closed Landfill

Project No. G07061.0

Drilling contractor: Derry's Well Drilling
 Drill rig & method: 8" OD HSA w/ SS
 Logged by: J. Pfohl

Date started: 6/21/2007
 Date ended: 6/21/2007
 Completion depth: 17.98 ft
 Stickup height: 2.65 ft

Surface elevation: 108.71 ft (MSL)
 Top of pipe elevation: 111.36 ft (MSL)
 Depth to water (TOB): 10.15 ft
 Depth to water (24hrs): 10.10 ft

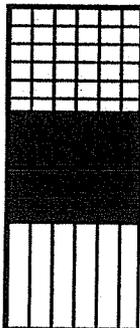


Municipal Engineering Services Company, P.A.

Operation/Construction Managers Civil/Sanitary Engineers Environmental Studies
 PO Box 97, Garner, North Carolina 27529 (919) 772-5393 PO Box 349, Boone, North Carolina 28607 (828) 262-1767

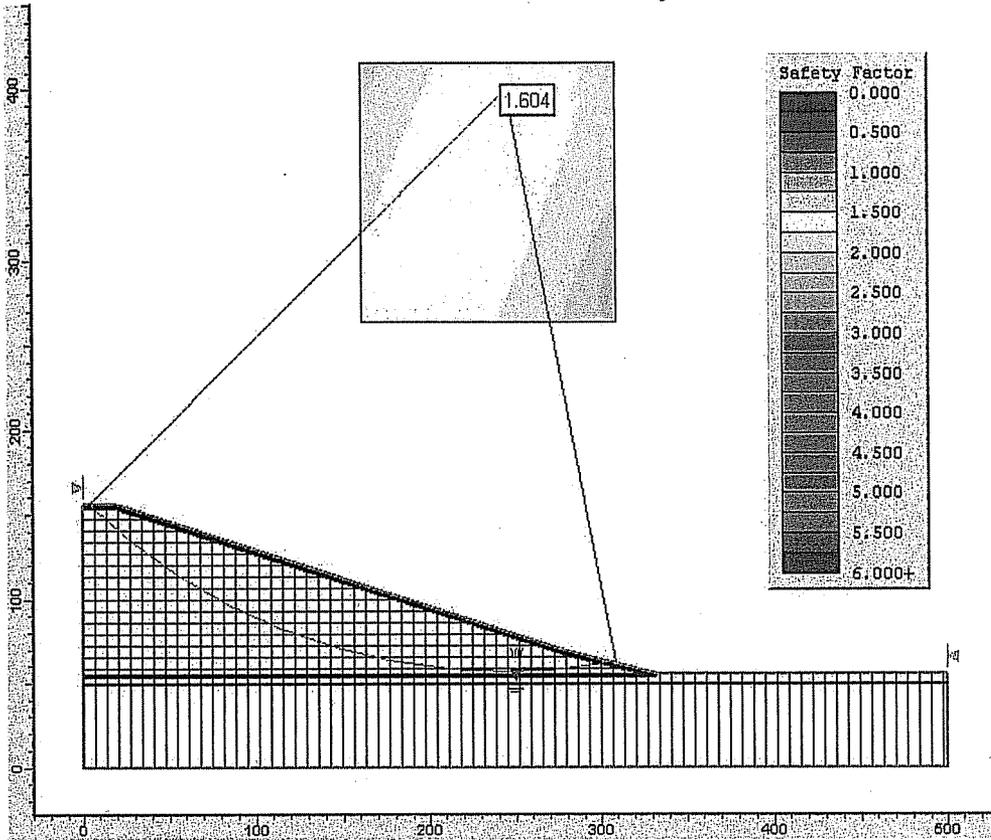
APPENDIX B
SLOPE STABILITY ANALYSES RESULTS

Material Property Legend

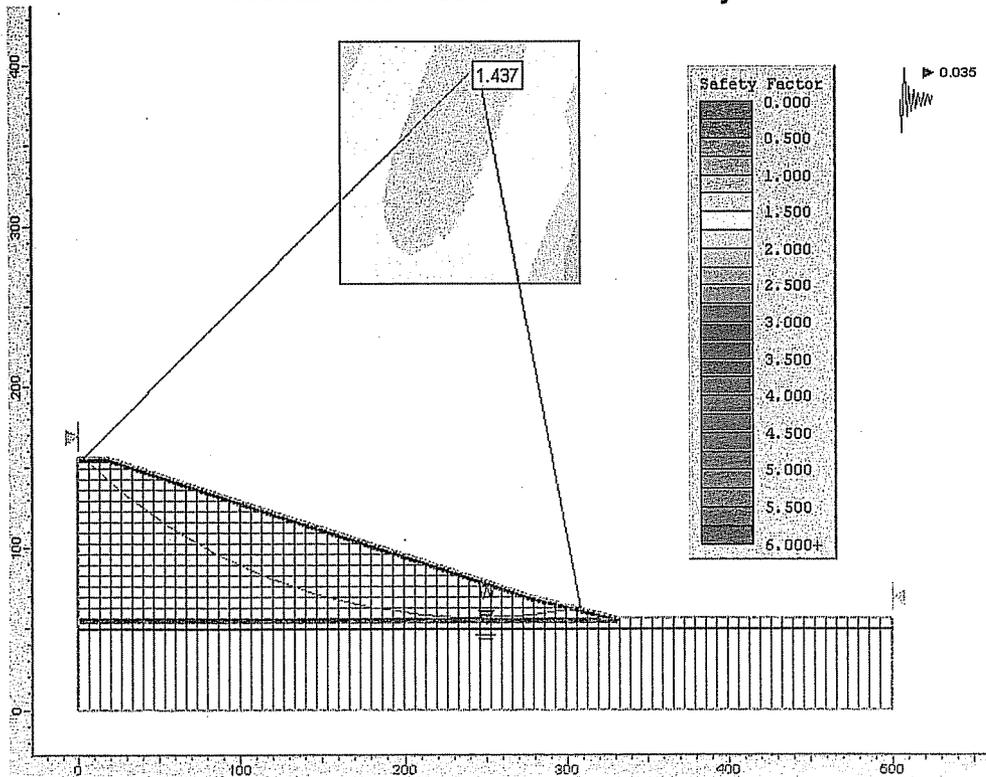


Soil Layer	Unit Weight (PCF)	Friction Angle	Cohesion (psf)
Waste	70	20	200
Clay Liner/Cap	125	20	400
Sandy and Silty CLAY	125	20	400

Section A-A' – Global Analysis

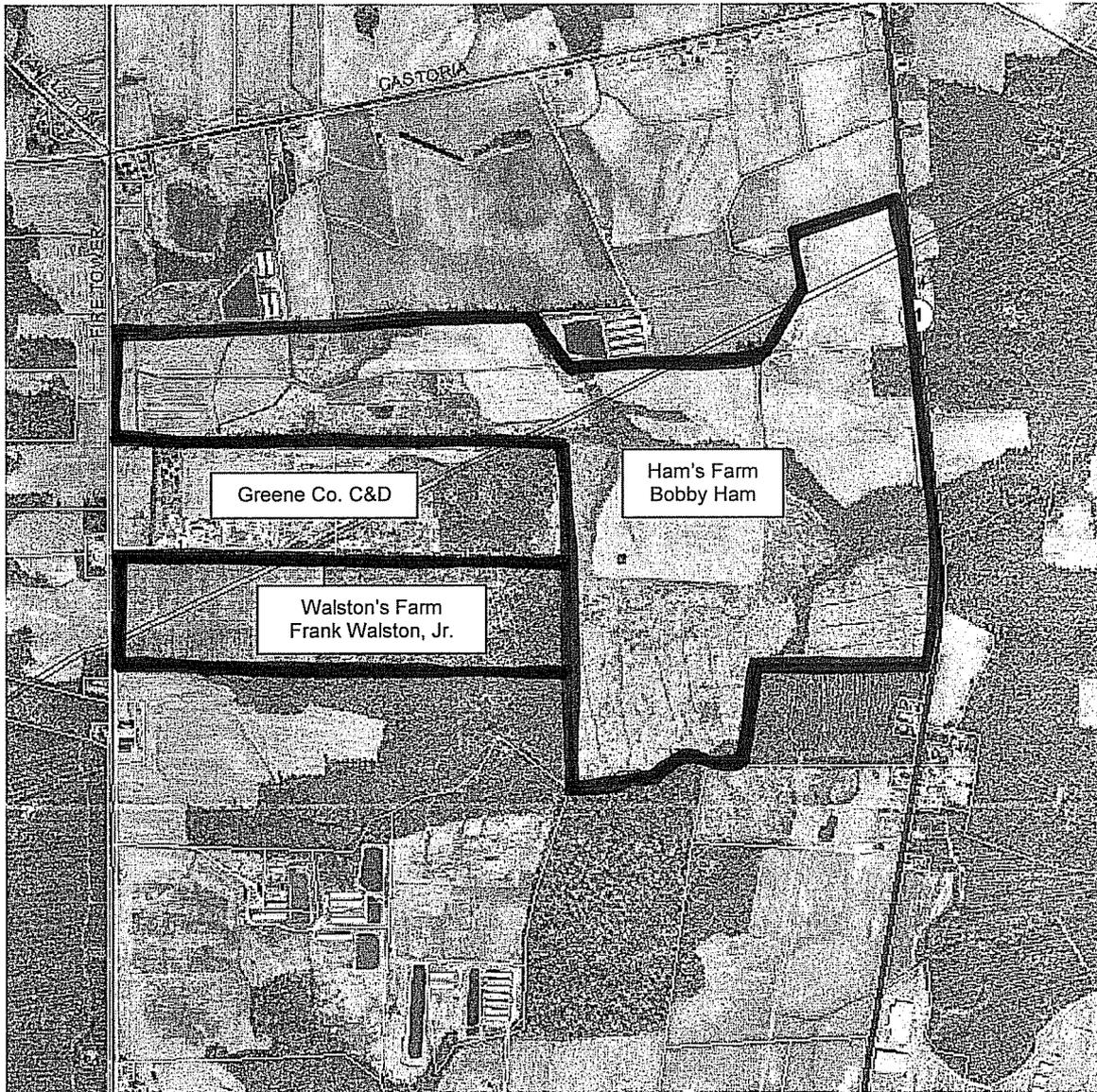


Section A-A' – Seismic Global Analysis



APPENDIX B

LOCAL GOVERNMENT APPROVALS



**Adjoiner's to Green County C&D Landfill
105 Landfill Road
Walstonburg, NC 27888**

Frank Walston, Jr.
573 Walston Road
Walstonburg, NC 27888

Bobby Ham
963 Hwy 258 South
Snow Hill, NC 28580

January 24, 2008

Property Owner: Frank Walston Jr.
Address: 573 Walston Rd.
City: Walstonburg NC. 27888

Dear Mr. Walston:

Re: Notice to Adjoining Greene County Landfill Property Owners

In compliance with the North Carolina Department of Environment and Natural Resources (NCDENR), new Construction and Demolition Landfill Rules require notification to adjoining Greene County Landfill property owners of our intent to continue operating a Construction and Demolition Landfill (C&DLF) at our current Solid Waste Facility.

The C&DLF is part of the existing facility which consists of the White Goods Recovery and Recycling site, Tire disposal, and Yard Waste disposal areas.

The C&DLF debris is presently being disposed on top of a closed Municipal Solid Waste Landfill. New Solid Waste rules that regulate the disposal of C&D waste require that we obtain local government approval (County Commissioners) for the continuing operation of the C&DLF. This letter and subsequent public meeting are part of this process.

The proposed finish elevation for the C&DLF is 200' and the waste that is being disposed of is from the demolition, remodeling, and/or construction of structures. This landfill operates on top of the closed MSWLF and also accepts land clearing and inert debris along with C&D like waste or inert material. The entrance to the facility will not change.

The public meeting is scheduled for Monday March 3, 2008 at 9:00 a.m. and will be held at the regular scheduled Commissioner's meeting located at 229 Kingbold Rd., Snow Hill, NC 28580. Application documents may be viewed at the County Public Works Department located at 105 Landfill Road, Walstonburg, NC 27888 between the hours of 8:00 a.m. – 4:00 p.m. Monday through Friday.

For further information, you may contact the County Public Works Department at 252-747-5720.

Sincerely, 

David Jones
Director of Public Works

January 24, 2008

Property Owner: Bobby Ham.
Address: 963 Hwy 258 South.
City: Snow Hill NC.28580

Dear Mr. Ham:

Re: Notice to Adjoining Greene County Landfill Property Owners

In compliance with the North Carolina Department of Environment and Natural Resources (NCDENR), new Construction and Demolition Landfill Rules require notification to adjoining Greene County Landfill property owners of our intent to continue operating a Construction and Demolition Landfill (C&DLF) at our current Solid Waste Facility.

The C&DLF is part of the existing facility which consists of the White Goods Recovery and Recycling site, Tire disposal, and Yard Waste disposal areas.

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For further information, you may contact the County Public Works Department at 252-747-5720.

Sincerely, 

David Jones
Director of Public Works

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Restricted Delivery Fee (Endorsement Required)	
Total	

Sent To: **Frank Walston, Jr.**
 573 Walston Road
 Walstonburg, NC 27888

PS Form 3800, June 2002 See Reverse for Instructions



02 1A
 0004356242 JAN 25 2008
 MAILED FROM ZIP CODE 28580

\$ 00.00

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Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total	

Sent To: **Bobby Ham**
 963 Hwy 258 South
 Snow Hill, NC 28580

PS Form 3800, June 2002 See Reverse for Instructions



02 1A
 0004356242 JAN 25 2008
 MAILED FROM ZIP CODE 28580

\$ 00.00

UNITED STATES POSTAGE
 PERREY BOWLES

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bobby Ham
 963 Hwy 258 South
 Snow Hill, NC 28580

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent Addressee
John Berman

B. Received by (Printed Name) C. Date of Delivery
 JOHN BERMAN 01/28/03

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

3. Service Type

Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.
 4. Restricted Delivery? (Extra Fee) Yes No

2. Article Number 7005 3110 0003 1473 4531
 (Transfer from service label)
 PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Frank Walston, Jr.
 573 Walston Road
 Walstonburg, NC 27888

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent Addressee
Frank Walston

B. Received by (Printed Name) C. Date of Delivery
 FRANK WALSTON 01-26-03

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

3. Service Type

Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.
 4. Restricted Delivery? (Extra Fee) Yes No

2. Article Number 7005 3110 0003 1473 4524
 (Transfer from service label)
 PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

County of Greene
State of North Carolina

Publisher's Affidavit

I, Jimmy Lewis, Circulation Manager of The Standard Laconic, a newspaper published in Snow Hill, County of Greene, North Carolina, do hereby certify that the notice in the action entitled:

Public Meeting Notice: North Carolina Solid
Waste Management

Appeared in The Standard Laconic for 1 consecutive week(s) beginning 1/30/2008 and ending 1/30/2008.

A copy of the notice is attached.

This the 23rd day of December, 2009.

Jimmy Lewis
Circulation Manager of The Standard Laconic

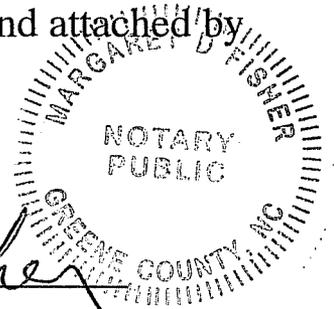
I, Margaret D. Fisher, a Notary Public, in and for the County and State aforementioned, do hereby certify the execution of the foregoing instrument for the purpose therein expressed.

In Witness Whereof, I have hereunto set my hand and attached by notarial seal, this the 23rd day of Dec. 2009.

My Commission Expires

4 Nov. 2012

Margaret D. Fisher
Notary Public



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 Wireless*

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 (Next to Highland TV Across from Mail)
 252-559-9688

SNOW HILL
 415 Hwy 13 South Suite-C
 252-747-8111

NEW BERN
 847 Hwy 70 East
 252-633-2055

Things we want you to know: Offer valid with a two-year service agreement on consumer price plans \$39.95 and higher. All service agreements subject to early termination fee. Credit approval required. \$30 activation fee. \$16 equipment change fee. Roaming charges, fees, surcharges, overage charges and taxes apply. 96¢ Regulatory Cost Recovery Fee applies; this is not a tax or government-required charge. Network coverage and reliability may vary. Usage rounded up to the next full minute. Use of service constitutes acceptance of our terms and conditions. Promotional Phone is subject to change. Buy-one-get-one-free offer requires new line activation on all phones. Mail-in rebates required on all phones. \$50 mail-in rebate required. Rebate will be in the form of a U.S. Cellular Reward Visa Debit Card. Allow 10-12 weeks for rebate processing. Promotional offer requires purchase of \$9.95 Unlimited easyedge access plan for at least 90 days. Reward Visa Card valid for 120 days after issued. U.S. Cellular Reward Visa Cards are issued by MetaBank pursuant to a license from Visa U.S.A. Inc. This card does not have cash access and can be used at any merchants that accept Visa Debit Cards. easyedge: U.S. Cellular-approved phone required on all easyedge plans. easyedge is a service mark of U.S. Cellular. Application charges apply when downloading applications. U.S. Cellular and easyedge are proprietary marks. All other trademarks and brand names mentioned herein are the exclusive property of their respective owners. Family Plan: Limit five lines per account. Monthly charge of \$10.00 per line applies to lines three to five. Mobile-to-Mobile rate applies to calls you make or receive to and from other U.S. Cellular customers in your Mobile-to-Mobile calling area (see map for details). Roaming indicator on your phone must be off for Mobile-to-Mobile rates to apply. Night and Weekend Minutes valid Monday through Friday, 7 p.m. to 6:59 a.m., or 9 p.m. to 5:59 a.m. (depending on calling plan) and all day Saturday and Sunday. Night and Weekend Minutes are available throughout your calling area. See brochure for details. 30-Day Guarantee: Customer is responsible for any charges incurred prior to return. Other restrictions apply. Contract Renewals: Customers with either 18 or 20 months (depending on market) completed on a 24-month commitment or 10 months completed on a 12-month commitment are eligible for promotional pricing. See store for eligibility and details of all offers. ©2008 U.S. Cellular. 1STAN-AD4C-A-1/08

PICK UP PHOTOS

If you have brought photos to The Standard Laconic office for publication, please come by the office to collect them.
 Photos not picked up will be discarded.

PUBLIC MEETING NOTICE

In compliance with North Carolina Solid Waste Management Rule § .1635 (d) Greene County will hold a public meeting to discuss the continued operation of a Construction and Demolition (C&D) Landfill at Greene County's current solid waste facility. This meeting will take place on Monday, the 3rd day of March at 9:00 a.m. The public meeting will be held at the County Commissioner Meeting Room located at Greene County Office Complex, 229 Kingold Blvd. in Snow Hill, North Carolina. This meeting will be used as an open forum to inform and discuss any concerns associated with the continued operation of a Construction and Demolition (C&D) Landfill at the Greene County Landfill. All interested parties should attend.



Commissioners
Jack Edmondson – Chairman
Jesse C. Tyndall – Vice Chairman
Denny Gamer
Bennie Heath
James T. Shackelford, Jr.



County Manager
Don Davenport

Finance Officer
Shawna Wooten

Public Meeting Notice

In compliance with North Carolina Solid Waste Management Rule § .1635 (d) Greene County will hold a public meeting to discuss the continued operation of a Construction and Demolition (C&D) Landfill at Greene County's current solid waste facility. This meeting will take place on Monday, the 3rd day of March at 9:00 a.m. The public meeting will be held at the County Commissioner Meeting Room located at Greene County Office Complex, 229 Kingold Blvd. in Snow Hill, North Carolina. This meeting will be used as an open forum to inform and discuss any concerns associated with the continued operation of a Construction and Demolition (C&D) Landfill at the Greene County Landfill. All interested parties should attend.

229 Kingold Blvd., Suite D • Snow Hill, NC 28580 • (252) 747-3446 • FAX (252) 747-3884
www.co.greene.nc.us

The mission of Greene County Government is to serve and improve the lives of all citizens by providing high-quality, cost-effective services in an open, professional and ethical environment

NORTH CAROLINA
COUNTY OF GREENE

The Greene County Board of Commissioners met in regular session on Monday, March 3, 2008, at 9:00 a.m. in the Greene County Office Complex. Present for the meeting were Chairman Jack Edmondson, Vice-Chair Jesse Tyndall and Commissioners Denny Garner, Bennie Heath and James Shackelford. County Manager Don Davenport and County Attorney E.B. Borden Parker were also present.

The Chairman called the meeting to order. Commissioner Shackelford gave the invocation and the Chairman led the Pledge to the Flag.

On motion by Commissioner Heath, seconded by Commissioner Garner the Board voted unanimously to add the additional budget amendment to the consent agenda.

On motion by Commissioner Heath, seconded by Commissioner Garner the Board voted unanimously to approve the agenda as amended.

On motion by Commissioner Shackelford, seconded by Commissioner Garner the Board voted unanimously to approve the consent agenda which included the following:

February 18, 2008 Regular Meeting Minutes

Department	Amount	Explanation
YAMCO Expansion Project	\$514,796.00	To budget for YamCo expansion project as approved on January 16, 2007.

REFUNDS

Clyde Jr. & Helen Roberson	\$32.00
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The Chairman opened the floor for Public Comments.

Being there were no comments, the Chairman announced the public meeting to discuss the County Governing Board's approval of the continued operation of a Construction and Demolition (C&D) landfill.

Mr. David Jones, Public Works Director introduced Mr. Wayne Sullivan, Municipal Engineering. Mr. Sullivan advised that the State had mandated new rules concerning construction and demolition landfills and that a public meeting is required to address any questions or concerns.

On motion by Commissioner Heath, seconded by Commissioner Tyndall the Board voted unanimously to approve the continued operation of the Construction and Demolition (C&D) landfill.

Mr. Mike Barnette, McDavid Associates presented information regarding the awarding of contracts for the 2006 CDBG Scattered Site Housing (SSH) program.

Economic Development
&
Planning



Chris Roberson,
Assistant
County Manager

September 8, 2009

NC Division of Solid Waste Management
1646 Mail Service Center
Raleigh, N.C. 27699

RE: Zoning Compliance letter for 105 Landfill Road, Walstonburg, N.C. 27888

Dear Sir:

This letter is to notify you that the property at 105 Landfill Road, Walstonburg, N.C. 27888 is not zoned. The county does not have any zoning regulations within its jurisdictional limits. Please note that it is the applicant's responsibility to ensure that all other requirements are met prior to permitting.

If I can be of further assistance, do not hesitate to give me a call at (252) 747-3446.

Sincerely,



Chris Roberson, CFM
Asst. County Manager
Economic Development & Planning

Copy: file

APPENDIX C

WASTE SCREENING PLAN

APPENDIX C – Waste Screening Plan

A. INTRODUCTION

The municipal solid waste stream is made up of wastes from all sectors of society. The waste is often categorized by its source or its characteristics. Terms used include commercial, industrial, residential, biomedical, hazardous, household, solid, liquid, demolition/construction, sludge, etc. Regardless of how one classifies wastes, the bottom line is that wastes are delivered to the landfill and a management decision must be made to either reject or accept them. This responsibility rests with the manager of the landfill. Wastes which are not authorized to be accepted at the landfill create a number of potential problems including: (1) liability due to future releases of contaminants; (2) bad publicity if media learns of unacceptable waste entering the landfill; (3) potential for worker injury; (4) exposure to civil or criminal penalties; (5) damage to landfill environmental control systems.

B. HAZARDOUS WASTE REGULATIONS AND MANAGEMENT

In the United States, hazardous waste is regulated under RCRA, Subtitle C. A waste is hazardous if it is listed as a hazardous waste by the Administrator of the Environmental Protection Agency (EPA) in the Code of Federal Regulations, Title 40, Part 261, or if it meets one or more of the hazardous waste criteria as defined by EPA. These criteria are:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity

1. Ignitability

Ignitable waste is a waste that burns readily, causes a fire by friction under normal circumstances, or is an oxidizer. Any waste having a flash point of <140F falls in this category. Flash point is that temperature at which a liquid gives off vapors that will ignite when an open flame is applied. Under Department of Transportation (DOT) definitions, a flammable liquid has a flash point of >100 F. A combustible liquid has a flash point between 100 and 200 F. Therefore, a flammable liquid is always hazardous while a combustible liquid may or may not be hazardous depending upon its flash point.

2. Corrosivity

A corrosive waste is one having a very high or a very low pH. The pH of a liquid is a measure of how acidic or basic (alkaline) the material is. The pH scale ranges from 0 to 14. High numbers are basic and low numbers are acidic. A substance having a pH ≤ 2.0 or ≥ 12.5 is defined as hazardous under RCRA.

3. Reactivity

A waste is reactive if it is normally unstable: reacts violently with water; forms an explosive mixture with water; contains quantities of cyanide or sulfur that could be released to the air; or can easily be detonated or exploded. These wastes may fall into any one of several DOT categories.

4. Toxicity Characteristic Leaching Procedure (TCLP)

A waste is TCLP toxic if the concentration of any constituent in Table 1 exceeds the standard assigned to that substance. The TCLP is a methodology which attempts to simulate the conditions within a landfill. An acidic solution is passed through a sample of waste and the resultant "leachate" is analyzed for contaminants. The TCLP is designed to detect heavy metals, pesticides and a few other organic and inorganic compounds. The purpose of the test is to prevent groundwater contamination by highly toxic materials. TCLP tests the mobility of 40 different elements and compounds.

Except in certain specified circumstances, regulated quantities of hazardous waste must be disposed of at a permitted hazardous waste disposal facility. In accordance with 40 CFR Part 261.3, **any material contaminated by a hazardous waste is also deemed to be a hazardous waste and must be managed as such.** Hazardous waste from conditionally exempt small quantity generators are to be disposed of in a hazardous waste disposal facility. RCRA permits are also required to store, transport, and treat hazardous waste.

C. POLYCHLORINATED BIPHENYL'S (PCBs)

1. Introduction

PCBs are nonflammable and conduct heat without conducting electricity. These compounds were most frequently used as an additive to oil or other liquids in situations where heat was involved. The PCBs enhance the heat conducting properties of the liquid and thereby increase the heat dissipation or cooling effect obtained. They have also been used in lubricants and paint. In the United States one of the most common applications was in electric transformers. The only effective method for destroying PCBs is high temperature incineration which is relatively expensive due to a shortage of PCB incineration capacity.

TABLE 1

T.C.L.P. CONSTITUENTS & REGULATORY LEVELS (mg/L)			
CONSTITUENT	REG LEVEL	CONSTITUENT	REG LEVEL
Arsenic	5.0	Hexachlorobenzene	0.13
Barium	100	Hexachloro-1,3-butadiene	0.5
Benzene	0.5	Hexachloroethane	3.0
Cadmium	1.0	Lead	5.0
Carbon Tetrachloride	0.5	Lindane	0.4
Chlordane	0.03	Mercury	0.2
Chlorobenzene	100	Methoxychlor	10.0
Chloroform	6.0	Methyl ethyl ketone	200
Chromium	5.0	Nitrobenzene	2.0
m-Cresol	200	Pentachlorophenol	100
o-Cresol	200	Pyridine	5.0
p-Cresol	200	Selenium	1.0
Cresol	200	Silver	5.0
1,4-Dichlorobenzene	10.0	Tetrachloroethylene	0.7
1,2-Dichloroethane	0.7	Toxaphene	0.5
1,1-Dichloroethylene	0.5	Trichloroethylene	0.5
2,4-Dichlorophenoxyacetic acid	0.7	2,4,5-Trichlorophenol	400
2,4-Dinitrotoluene	0.13	2,4,6-Trichlorophenol	2.0
Endrin	0.02	2,4,5-TP (Silvex)	1.0
Heptachlor (and its hydroxide)	0.008	Vinyl Chloride	0.2

By law PCBs are no longer used as dielectrics in transformers and capacitors manufactured after 1979. There are many millions of pounds of PCBs still in use or in storage. One example is the ballasts used in fluorescent light fixtures. It has been estimated that there are between 0.5 million and 1.5 billion ballasts currently in use in this country. Due to the long life of these units, about half of these may be of pre-1979 manufacture and contain PCBs. Since each ballast contains about one ounce of nearly pure PCB fluid, there are about **20 to 30 million pounds** of PCBs in existing lighting fixtures. These items are not the subject to RCRA Subtitle D Waste Screening!

Commercial or industrial sources of PCB wastes that should be addressed by the program include:

- Mineral oil and dielectric fluids containing PCBs;
- Contaminated soil, dredged material, sewage sludge, rags, and other debris from a release of PCBs;
- Transformers and other electrical equipment containing dielectric fluids; and
- Hydraulic machines.

2. PCB Regulatory Requirements

As contrasted to hazardous wastes, the Toxic Substance Control Act regulates PCBs based on the concentration of PCBs in the waste rather than the source or characteristic of the waste. The regulations concerning PCB disposal are spelled out in 40 CFR Part 761. Subtitle D of RCRA merely requires that PCB waste not be disposed in a MSW landfill. PCB management requirements include:

Waste containing more than 500 ppm of PCBs must be incinerated. Waste containing from 50 to 500 ppm must be disposed of by incineration, approved burning, or in chemical waste landfill permitted to receive such wastes. The regulations are silent concerning wastes containing less than 50 ppm of PCBs; however, the regulations cannot be circumvented by diluting stronger wastes.

D. FUNDAMENTALS OF WASTE SCREENING

1. Know Your Generators and Haulers

Since the level of sophistication of your waste screening program will be a reflection of the likelihood of hazardous waste and PCB waste being in your incoming waste, **knowledge of the commercial industrial base of your service area is critical.** Some examples are the automotive industry, which generates solvents, paint wastes, lead acid batteries, grease and oil; the dry cleaning industry, which may generate filters containing dry cleaning solvents; metal platers which generate heavy metal wastes; and other industries which generate a variety of undesirable wastes; e.g. chemical and related products, petroleum refining, primary metals, electrical and electronic machinery, etc.

Landfill managers should also know the haulers and trucks serving the businesses in their community which are likely to carry unacceptable wastes.

Some local governments and solid waste management agencies have enacted legislation requiring haulers to provide a manifest showing the customers whose wastes make up that particular load. Such a manifest is an extremely useful tool when a load is found to contain prohibited wastes. It is unwise to accept wastes from unknown, unlicensed, or otherwise questionable haulers.

2. Inspections

An inspection is typically a visual observation of the incoming waste loads by an individual who is trained to identify regulated hazardous or PCB wastes that would not be acceptable for disposal at the C&DLF unit. The training of landfill personnel will be conducted by a local EMS official or a SWANA certification. An inspection is considered satisfactory if the inspector knows the nature of all materials received in the load and is able to discern whether the materials are potentially regulated hazardous wastes or PCB wastes.

Ideally, all loads should be screened; however, it is generally not practical to inspect in detail all incoming loads. Random inspections, therefore, can be used to provide a reasonable means to adequately control the receipt of inappropriate wastes. Random inspections are simply inspections made on less than every load. At a minimum the inspection frequency will not be less than one percent of the waste stream.

The frequency of random inspections may be based on the type and quantity of wastes received daily, and the accuracy and confidence desired in conclusions drawn from inspection observations. Because statistical parameters are not provided in the regulation, a reasoned, knowledge-based approach may be taken. A random inspection program may take many forms such as inspecting every incoming load one day out of every month or inspecting one or more loads from transporters of wastes of unidentifiable nature each day. If these inspections indicate that unauthorized wastes are being brought to the C&DLF site, the random inspection program should be modified to increase the frequency of inspections.

Inspection priority also can be given to haulers with unknown service areas, to loads brought to the facility in vehicles not typically used for disposal of C&D waste, and to loads transported by previous would-be offenders. For wastes of unidentifiable nature received from sources other than households (e.g., industrial or commercial establishments), the inspector should question the transporter about the source/composition of the materials.

An inspection flow chart to identify, accept, or refuse solid waste is provided as Figure 1.

Inspections of materials may be accomplished by discharging the vehicle load in an area designed to contain potentially hazardous wastes that may arrive at the facility. The waste should be carefully spread for observation using a front end loader or other piece of equipment. The Division recommends that waste should be hand raked to spread the load. Personnel should be trained to identify suspicious wastes. Some indications of suspicious wastes are:

- Hazardous placards or markings;
- Liquids;
- Powders or dusts;
- Sludges;
- Bright or unusual colors;
- Drums or commercial size containers; or
- Chemical odors.

The County will follow these procedures when suspicious wastes are discovered.

- Segregate the wastes;
- Dispose of non-C&D waste in designated container(s) for transport off-site;
- Question the driver;
- Review the manifest (if applicable);
- Contact possible source;
- Call the Division;
- Use appropriate protective equipment;
- Contact laboratory support if required; and
- Notify the local Hazardous Material Response Team.

Containers with contents that are not easily identifiable, such as unmarked 55-gallon drums, should be opened only by properly trained personnel. Because these drums could contain hazardous waste, they should be refused whenever possible. Upon verifying that the solid waste is acceptable, it may then be transferred to the working face for disposal.

Testing typically would include the Toxicity Characteristic Leaching Procedure (TCLP) and other tests for characteristics of hazardous wastes including corrosivity, ignitability, and reactivity. Wastes that are suspected of being hazardous should be handled and stored as a hazardous waste until a determination is made.

If the wastes temporarily stored at the site are determined to be hazardous, the County is responsible for the management of the waste. If the wastes are to be transported from the facility, the waste must be: (1) stored at the C&DLF in accordance with requirements of a hazardous waste generator, (2) manifested, (3) transported by a licensed Treatment, Storage, or Disposal (TSD) facility for disposal.

E. RECORD KEEPING AND NOTIFICATION REQUIREMENTS

Records must be kept pursuant to an incident where regulated hazardous waste or prohibited waste is found at the landfill. It is also recommended that records be kept of all screening activities and incidents, whether or not, regulated or prohibited wastes are found. This will help prove that the landfill owner/operator has acted in a prudent and reasonable manner.

The best way to prove compliance with this requirement is to document each inspection including:

- Date and time of waste detection
- Hauler name (company and driver)
- Waste(s) detected
- Waste generator(s) if able to identify
- Action(s) taken to manage or return material(s)
- Efforts taken if extreme toxicity or hazard was discovered
- Landfill employee in responsible charge

40 CFR Part 258 requires that records should be maintained at or near the landfill site during its active life and as long after as may be required by the appropriate state or local regulations.

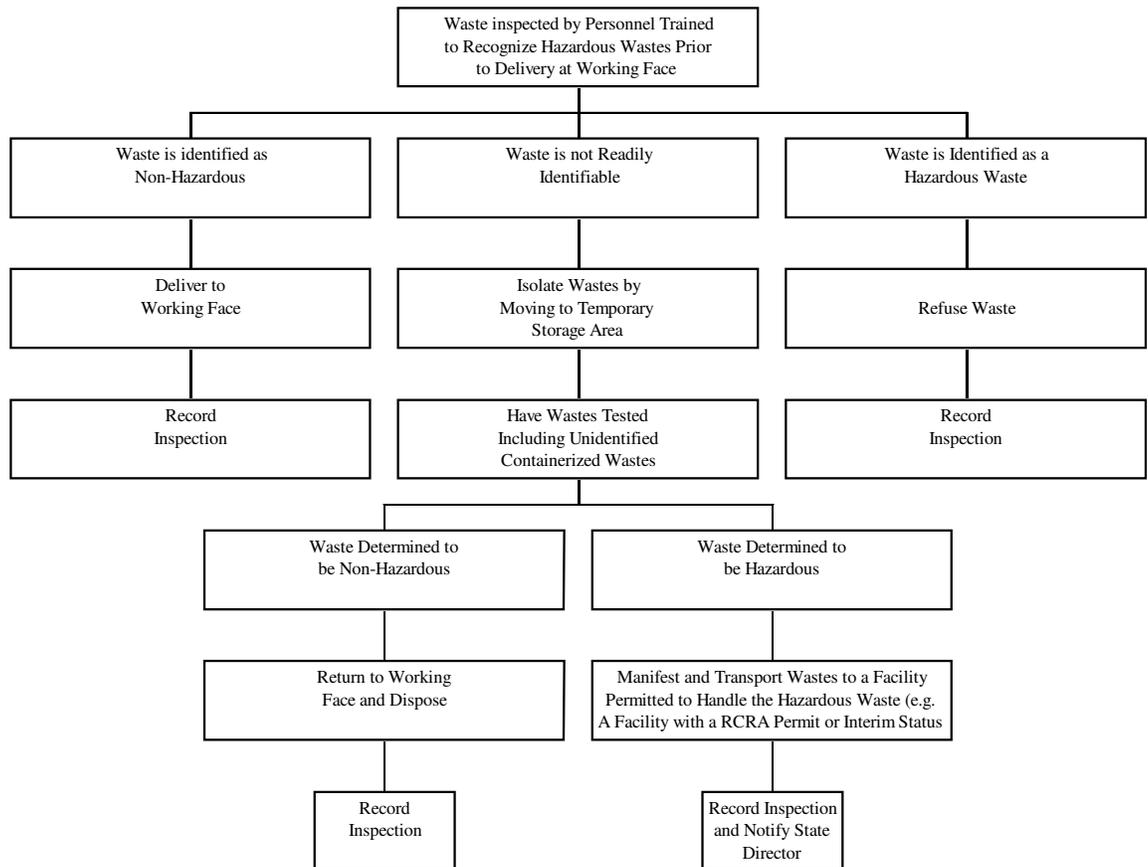


FIGURE 1
Hazardous Waste Inspection Decision Tree
Inspection Prior to Working Face

WASTE SCREENING CHECK LIST

CONTAINERS	YES	NO
FULL.....	_____	_____
PARTIALLY FULL.....	_____	_____
EMPTY.....	_____	_____
CRUSHED.....	_____	_____
PUNCTURED.....	_____	_____
POWDERS/DUSTS		
IDENTIFIED.....	_____	_____
UNKNOWN.....	_____	_____
SATURATION.....	_____	_____
LABEL/HAZARDOUS.....	_____	_____
ODOR/FUMES		
STRONG.....	_____	_____
FAINT.....	_____	_____
HEAT.....	_____	_____
ITEMS FOUND		
BATTERIES.....	_____	_____
OIL.....	_____	_____
BIOMEDICAL.....	_____	_____
RADIOACTIVE.....	_____	_____
ASHES/RESIDUE.....	_____	_____
SOD/SOIL.....	_____	_____
LIQUID.....	_____	_____
HAZARDOUS.....	_____	_____
PCB'S.....	_____	_____

CHECK ALL THAT APPLY

DETAILED SCREENING REPORT

WASTE SOURCE _____
ADDRESS _____

PROBABLE [] SUSPECTED [] CONFIRMED []

WASTE HAULER _____
ADDRESS _____

DRIVER'S NAME _____
DETAIL _____

NOTIFIED:

WASTE SOURCE [] HAULING MANAGEMENT [] SITE MANAGEMENT []

STATE [] FEDERAL []

NAME _____

WITNESS (IF ANY) _____

DATE _____ TIME _____ AM PM

ACTION REQUIRED

APPENDIX D

**STATE AND LOCAL
CONTACT INFORMATION**

STATE AND LOCAL CONTACT INFORMATION

NC Division of Waste Management Office:

Solid Waste Field Operation Branch
Fayetteville Regional Office
Eastern Regional Supervisor

Phone: (910) 433-3300

Local Hazardous Material Response Team:

Emergency: 911

Greene County Emergency Services

Phone: (252) 747-2544

Local Fire Department:

Emergency: 911

Castoria Fire Department

Phone: (252) 747-2482

Local Sheriff's Department:

Emergency: 911

Greene County Sheriff's Department:

Phone: (252) 747-3411

APPENDIX E

**WRITTEN
FACILITY PLAN**

APPENDIX E - Written Facility Plan

Introduction

The County will continue to operate a Construction and Demolition Landfill (C&DLF) within the permitted boundaries and upon the closed unlined municipal solid waste(MSW) landfill. The unlined MSW area opened in 1982 and stopped receiving waste prior to October 9, 1991 and was certified closed on August 31, 1998. The closed MSW area has a minimum of two feet of final cover.

General

The existing C&DLF unit is located a minimum of 50' from the property lines, 500' from existing wells, and 50' from any stream, river or lake.

The County will cap their landfill within 180 days after the final receipt of solid waste. The cap system will consist of 12 inches intermediate cover, 18 inches of cohesive soil with a permeability no greater than 1.0×10^{-5} cm/sec, and 18 inches of erosive layer. The cap contains gas venting system consisting of a series of washed stone trenches below the soil liner that will be vented through pipes that penetrate the cap. The cap system will also include the proper seeding and mulching of the erosive layer and other erosion control devices.

The total permitted C&D capacity is 434,135 cubic yards. The permitted capacity is the sum of the total air space of 352,500 cubic yards (1997Submittal) and the final soil cover system of 81,635 cubic yards. The existing closed MSW footprint is approximately 12.65 acres in size.

Disposal Rates

The Facility is open 5.5 days per week. The tonnage per day was approximately 3 tons in the Fiscal year 2008-2009. The life of the Facility will depend on disposal rates and compaction, which can vary throughout the life of the Facility. This variance can either increase or decrease the life of the Facility.

Service Area

The Facility will accept only waste from Greene County.

Landfill Capacity

The Life Expectancy calculations were calculated for Phases 2-5 of development with a vertical expansion being included when a Phase is constructed adjacent to the previous Phase. Each successive phase will vary in size due to being able to expand onto the previously filled areas. The Operation Plan of the Engineering Report will delineate this more clearly. The airspace is a net volume excluding the capping requirements.

LIFE EXPECTANCY CALCULATIONS PHASES 2-5

Given:

Life expectancy based on actual survey dated May 8th, 2009 Fiscal Year 08-09 is as follows:

Life expectancy based on using the survey is 12,941 cubic yards/year (using 1200#/cy compaction rate = 7,765 tons/year), for the first year and an annual increase of 3.1% for each year thereafter.

<u>Phases</u>	<u>Airspace Available</u>	<u>Years of Life</u>
Phase 2	= 64,493 cubic yards	= 4.98 years
Phase 3	= 64,454 cubic yards	= 4.90 years
Phase 4	= 71,106 cubic yards	= 5.33 years
Phase 5	= 63,814 cubic yards	= 4.71 years
	<u>263,867 cubic yards</u>	<u>19.92 years</u>

Soil requirements for construction, daily cover and final caps for Phases 2-5
(Assume an 10:1 Trash to soil ratio)

Soil needed for Daily Cover	= 23,988 cubic yards
Soil needed for Closure	= 81,635 cubic yards
Overall Soil Requirements	= 105,623 cubic yards (soil needed for closure and daily cover)

The County also owns property which it will utilize for borrow material as needed. There should be enough borrow material available to complete the landfill. If the need arises the County will purchase additional land to borrow from.

Estimated schedule of closure will be approximately 19.92 years.