

1107.1600 MSW Sub D Land



5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
tel: 919 787-5620
fax: 919 781-5730



~~_____~~
- D1341

July 15, 2005

Mr. Brian Wootton
Solid Waste Section
Division of Waste Management
401 Oberlin Road
Suite 150
Raleigh, North Carolina 27605

Subject: Water Quality Monitoring Plan
Additional Surface Water Sampling Location
Buncombe County Subtitle D Landfill Cell 6

Dear Mr. Wootton:

Per your request, CDM has added an additional surface water sampling location to the Water Quality Monitoring Plan at the Buncombe County Subtitle D landfill. The new location will be located at the outfall of the french drain in the Cell 6 area. A revised Water Quality Monitoring Plan (Figure 3-1) showing the new sampling location (SW-5) is attached.

I will notify you as soon as the sample has been collected and forward the analytical data as soon as it is received. If you have any questions or need additional information, please do not hesitate to call me.

Very truly yours,

Mathew F. Colone, P.G.
Camp Dresser & McKee



7/15/05

xc: Bob Hunter, Buncombe County
Tim Jewet, NCDENR
Jim Barber, NCDENR
Mike Brinchek, CDM

1107 .1600 MSW Sub D Lined

D1338 -



5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
tel: 919 787-5620
fax: 919 781-5730

RECEIVED
N.C. Dept. of ENR
JUL 13 2005
Winston-Salem
Regional Office

RECEIVED
N.C. Dept.
JUL 13
Winston-Salem
Regional Office

July 7, 2005

Mr. Brian Wootton
Solid Waste Section
Division of Waste Management
401 Oberlin Road
Suite 150
Raleigh, North Carolina 27605

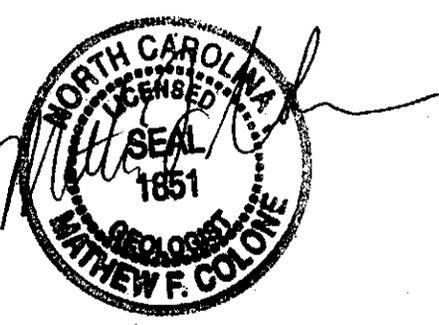
Subject: Monitoring Well Installation and Initial Sampling Report
Revised Figure 1
Buncombe County Subtitle D Landfill Cell 6

Dear Mr. Wootton:

In response to your comments in your e-mail from July 5, 2005, CDM is submitting a revised Monitoring Well Location Map (Figure 1). Per your comments, Figure 1 has been revised to show the edge of waste, the 250-foot compliance boundary from the edge of waste for Cells 1-6, and the landfill property line. As shown on the Figure, the MW-13/13d nest is located in the drainage feature along the preferential flow-path, at the 250-foot compliance boundary.

I hope that these revisions satisfy your concerns. If you have any questions or need additional information, please do not hesitate to call me.

Very truly yours,
Mathew F. Colone
Mathew F. Colone, P.G.
Camp Dresser & McKee



7/7/2005

xc: Bob Hunter, Buncombe County
Tim Jewet, NCDENR
Jim Barber, NCDENR
Mike Brinchek, CDM

Fri 16th

- Janet Zellar called.

- Back from Russia. GOT
back Tues.

- Any new data for
Bencombe Co.?

- I haven't seen any.

Per Geoff Burke (FBS&J),

it will be done ~~PN~~ CD &

sent out way today/tomorrow.

It will ~~be~~ include ^{GW/SW} 21% ~~data~~

data taken by them @ the

site. I told them to

make sure they sent GW

flow rate/direction, stat,

126 QA/QC, P&L.

11-07

Ms. Lee,

I was informed by Janet Zellar to forward this information to you. Ms. Zellar had questions about the water quality data at the Buncombe County lined landfill (Permit #11-07).

I have been in contact with the consultant and they are conducting the following tasks:

- 1) As you are aware, acetone and methylene chloride are commonly used in laboratories and although they were not detected in the sample blanks, they are considered by the USEPA to be common laboratory contaminants (Functional Guidelines for Organics, EPA 1988e). For this reason, the consultant is having the lab check its records to see if these constituents could have been from a source other than the samples.
- 2) Additionally, for confirmation, the consultant is compiling the latest round of data (Spring 2000 event). This will provide a better indication whether the detections are actually in the water samples.

I hope this has answered some of your questions. I will know more when the above tasks are completed. Please contact me or Larry Rose anytime if you have additional questions about the groundwater data.

RECORD OF COMMUNICATION

- Phone Call Discussion Field Trip Conference
 Other (Specify)

(Record of item checked above)

To:

From:

Date

5-18-00

Time

Subject

Summary of Communication

- Janet Zeller (BREDL)

BUNC. Co., lined LE ^{Latest} water quality results.

336-282-2691

Acetone

MC - MW-8D (40% of stb.)

*Email or phone message back w/ info.

violates settlement agreement.

Bredl@skybest.com

Conclusions, Action Taken or Required

after Sunday

~~posts~~

Dlee704@aol.com

INFORMATION COPIES

TO:

RECORD OF COMMUNICATION

- Phone Call Discussion Field Trip Conference
 Other (Specify)

(Record of item checked above)

To:

From:

Date

5-22-00

Time

Subject

Summary of Communication

- Geoff Burke (PES&J)

separate sw stds? yes we do.

- Having lab check. Both look like
lab constituents (A and B & C)

- 1st test round of data being compiled
now. Will give better indication whether
this data is real or not.

Conclusions, Action Taken or Required

INFORMATION COPIES

TO:

RECORD OF COMMUNICATION

- Phone Call Discussion Field Trip Conference
 Other (Specify)

(Record of item checked above)

To:

From:

Date

5-18-00

Time

Subject

Summary of Communication

- Geoff Burke (PBSEJ)

561-758-5259 cell phone

In response to BREDL's (Janet Zeller's) concerns

tomorrow, will be in office

does not recall any VOCs detected

@ New Bunk G. lined LR

Conclusions, Action Taken or Required

INFORMATION COPIES

TO:

Lined - Buncombe Co. 11-07 - Recent Data

11-07-00 - Few metals
- no VOCs

Spring-00 - Few metals
- no VOCs

1-1-99 SW-3 - Acetone - 28 ppb
MW-8d - M.C. - 2 ppb

1-26-99 - Few Metals
- no VOCs

1-17-98 - Few Metals
- no VOCs

4-30-98 - Few Metals
- no VOCs



Project XL: Buncombe County Landfill



WHAT IS PROJECT XL?



Project XL, which stands for "eXcellence and Leadership," is a national initiative that tests innovative ways of achieving better and more cost-effective public health and environmental protection. The information and lessons learned from Project XL are being used to assist the U.S. Environmental Protection Agency (EPA) in redesigning its current regulatory and policy-setting approaches. Project XL encourages testing of cleaner, cheaper, and smarter ways to attain environmental results superior to those achieved under current regulations and policies, in conjunction with greater accountability to stakeholders. It is vital that each project tests new ideas with the potential for wide application and broad environmental benefits. As of September 2000, over thirty pilot experiments are being implemented and several additional projects are in various stages of development.

SUMMARY OF THE BUNCOMBE COUNTY LANDFILL PROJECT

The Buncombe County Solid Waste Management Facility (BCSWMF), located in the western part of North Carolina, is one of the ten largest publicly-owned municipal solid waste landfills in the state. It accepts approximately 250,000 tons of municipal solid waste per year, including construction and demolition wastes. Through this XL project, Buncombe County proposes to implement a new bioreactor landfill system that involves constructing an alternative liner system and recirculating landfill leachate. In a bioreactor landfill, controlled quantities of liquids are added and circulated through waste to accelerate the natural biodegradation rate of waste and therefore decrease the waste stabilization and composting time compared to a conventional landfill. Implementing this innovative system will decrease emissions of landfill gas, accelerate waste decomposition, improve leachate quality, and increase the waste capacity of the existing landfill. Buncombe County believes that the results of this project could lead EPA to revise existing Resource Conservation and Recovery Act (RCRA) regulations and allow or promote the use of alternative liner systems in municipal solid waste landfills using leachate recirculation. This XL project, EPA's 34th, was signed on September 18, 2000.

When implemented, the leachate recirculation/gas recovery system will provide superior environmental performance in a number of ways:

SUPERIOR ENVIRONMENTAL PERFORMANCE

- Acceleration of waste decomposition, which should enhance groundwater protection;
- Early compliance with Clean Air Act requirements for municipal solid waste landfills through installation of a gas collection and control system;
- Reduction of potential risk to workers and the community from transport of collected leachate to publicly owned treatment facilities via tanker trucks;
- Improved leachate quality and, ultimately, improved quality of water discharged to the receiving streams;
- Reinvestment of cost savings in pilot projects to enhance integrated solid waste management practices;
- Additional waste capacity and longer life for the existing landfill, reducing the need for new landfill sites;
- Generation of large-scale operational data to evaluate the horizontal trench design for leachate re-circulation/gas recovery landfills; and
- Identification and quantification of performance advantages or limitations of the process.

FLEXIBILITY

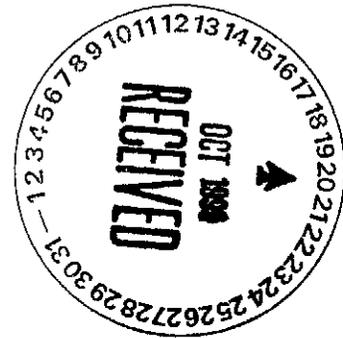
EPA's RCRA Subtitle D regulations currently allow municipal solid waste landfill



An employee-owned company

September 22, 1999

Mr. Bobby Lutfy
North Carolina Department of Environment,
Health and Natural Resources
P.O. Box 27687
Raleigh, NC 27604



Re: New Buncombe County Landfill

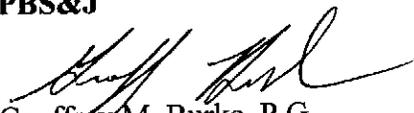
Dear Mr. Lutfy:

Confirming our telephone conversation of September 21, 1999, during a recent semi-annual sampling event at the above referenced facility, Monitoring Well MW-1D was observed to be obstructed at a depth of approximately 61' bsl. The total depth of the well is 95'. Further investigation using a downhole video camera revealed that the well had been backfilled (presumably by vandals) with gravel and miscellaneous debris. A licensed well drilling contractor attempted to airlift the debris from the well but was unsuccessful. To ensure that no contaminants were introduced into the well/borehole, the well was sampled for the Appendix II constituents and found to be clean. Based upon these results, Buncombe County has elected to drill out the existing borehole and reinstall MW-1D to the same specifications as originally installed.

Should you have any questions regarding this matter, please give me a call at (561) 689-7275 ext. 235.

Sincerely,

PBS&J



Geoffrey M. Burke, P.G.

cc: Bob Hunter, Buncombe Co.
Ed Hilton, PBS&J

\\WEST_PALM\SYS1\COMMON\GEOFF\BUNCOMBE\lutfy999.doc



Camp Dresser & McKee

**Carolina Corporate Center
5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612**

Phone: (919) 787-5620, Fax: (919) 781-5730

Date: _____ Time: _____

Charge No.: _____

Transmit To: Bobby Lutz

Location: SWS

Fax Number: _____

From: Tim Grant

Number of Pages (including Transmittal): 2

*Detail for revised sampling point
for alternative monitoring system
Cell 3 -Buncombe Cty*

Bill Sissons 10/15

Tim Grant 10/15

Facsimile

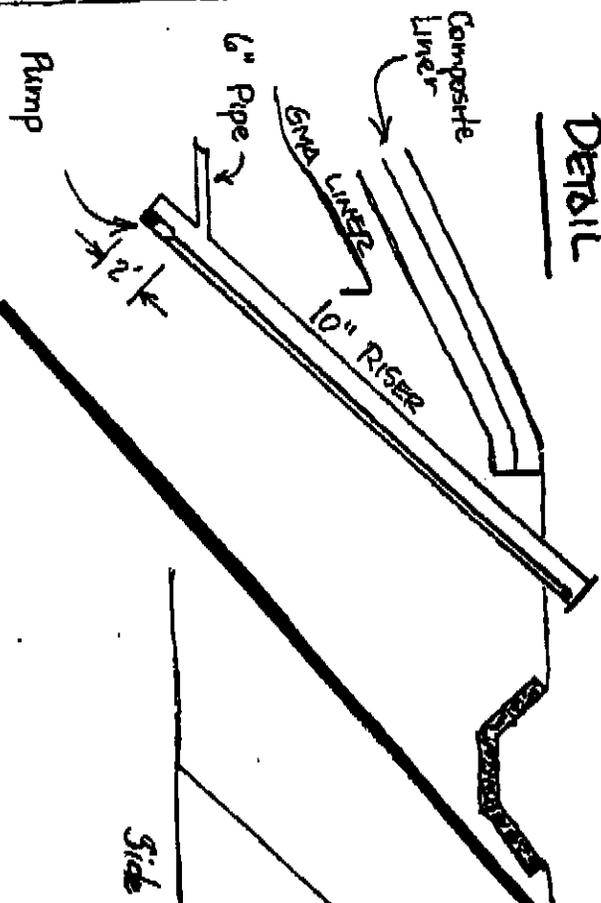


WORK SHEET

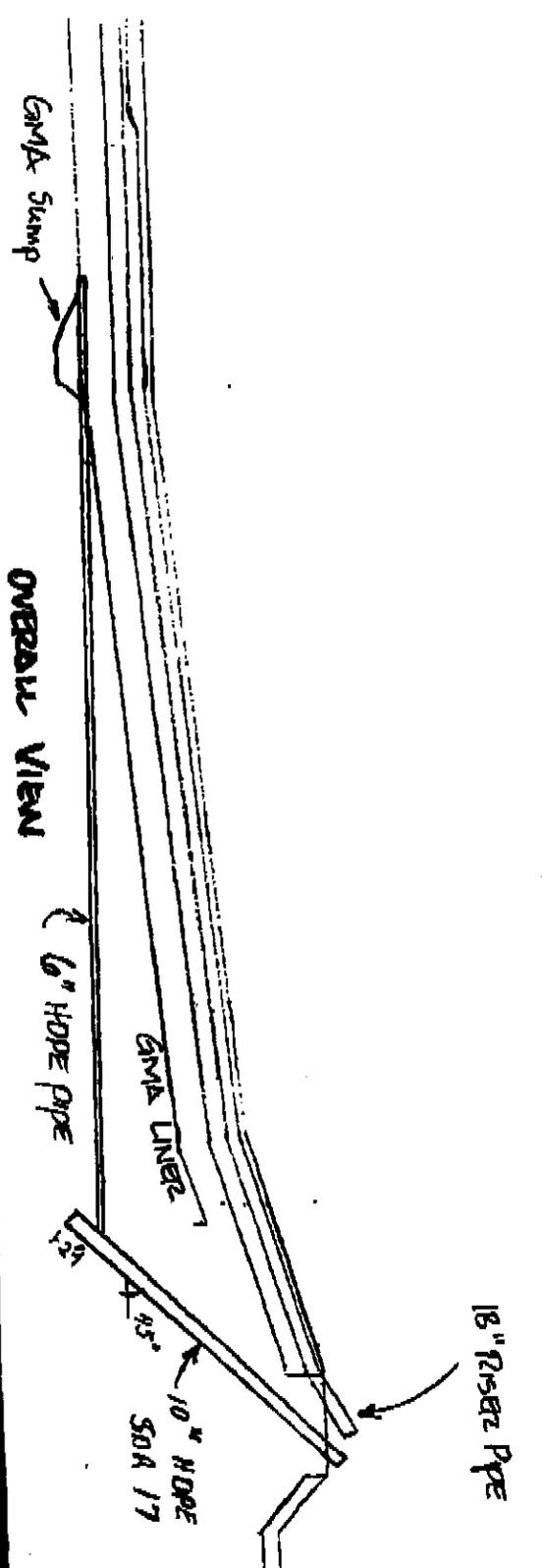
BUNCOMBE CO. LANDFILL (VALUE ENGINEERING)

PROJECT: GMA PIPE / PUMP SUBSTITUTE
ITEM: 9PP DATE: 10/5/98 CHECKED: _____

DETAIL

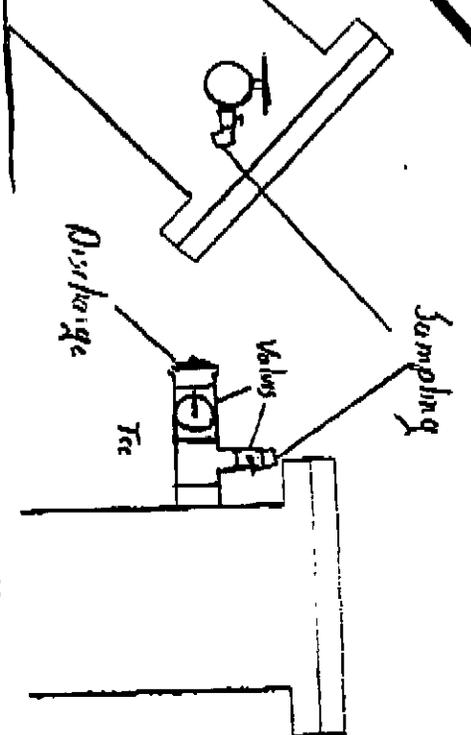


OVERALL VIEW



Side

FITTING DETAIL





Camp Dresser & McKee

environmental
services

5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
Tel: 919 787-5620 Fax: 919 781-5730

September 30, 1996

Mr. Bobby Lutfy
Solid Waste Section
North Carolina Department of Environment,
Health, and Natural Resources
401 Oberlin Road
Suite 150
Raleigh, North Carolina 27605-1350

Re: Monitoring Well Installation
Buncombe County MSWLF

Dear Mr. Lutfy:

As required by Condition #17 of the Permit To Construct, this letter serves to notify you that installation of the groundwater monitoring wells around Cells 1-3 is scheduled to begin on Thursday, October 3, 1996.

If you have any questions or need any additional information, please do not hesitate to contact me.

Very truly yours,

CAMP DRESSER & McKEE

Timothy D. Grant, P.G.

cc: Bob Hunter, Buncombe County
Paul Chabot, CDM



Camp Dresser & McKee

environmental
services

5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
Tel: 919 787-5620 Fax: 919 781-5730

May 10, 1996

Mr. Bobby Lutfy
Solid Waste Section
Division of Solid Waste Management
North Carolina Department of Environment,
Health, and Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Subject: Excavation of Leachate Pond
Buncombe County Municipal Solid Waste Landfill
Permit To Construct Number 11-07

Dear Mr. Lutfy:

This letter is to inform you that, as required by Item No. 16 of the Conditions of Permit, the leachate pond has been excavated to a depth of one foot below the bottom grade of the alternative leak detection system. Competent bedrock was not encountered. This excavation subgrade depth is four feet below the bottom of the clay liner, and therefore indicates that the bottom of the clay liner will be at least four feet above the top of the bedrock surface. Additional documentation will be submitted in the Construction Quality Assurance report.

If you have any questions or require further explanation, do not hesitate to call me at 787-5620.

Sincerely,

CAMP DRESSER & McKEE

Timothy D. Grant, P.G.

cc: Bob Hunter, Buncombe County
Joe Wiseman, CDM
Paul Chabot, CDM
Bernie Garrett, CDM

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



April 25, 1996

Bob Hunter
Buncombe County Solid Waste
30 Valley Street
Asheville, North Carolina 28801

Ref: Buncombe County Municipal Solid Waste Landfill
Permit to Construct Number 11-07

Mr. Hunter:

The Solid Waste Section (Section) has received a pre-blast request, dated April 17, for the above referenced facility. The request provides information indicating that there should be no impact on containment facilities and includes provisions for monitoring effects of blasting in the vicinity of cell 3. This request for blasting is approved.

Data obtained from blast monitoring, detonation information (charge size, depths, locations, etc.), and any other pertinent information should be included in the Construction Quality Assurance report. If anomalies occur during the blasting, they should be investigated immediately and reported to the Section.

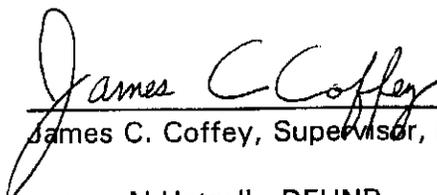
If you have any questions or require any other assistance, please feel free to contact this office.

Sincerely,



William D. Sessoms, PE

Approved:



James C. Coffey, Supervisor, Permitting Branch

copy: Al Hetzell - DEHNR
Bobby Lutfy -DEHNR
Bernie Garrett, PE - CDM

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



January 25, 1996

Bob Hunter
Buncombe County Solid Waste
30 Valley Street
Asheville, North Carolina 28801

Ref: Buncombe County Municipal Solid Waste Landfill, Permit to Construct Number 11-07

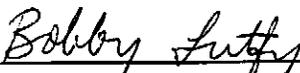
Mr. Hunter:

The Solid Waste Section (Section) has received a post-blast report, dated January 19, for the above referenced facility. The report indicates that blasting that has already occurred at the site should not have had any impact on proposed waste and leachate containment facilities.

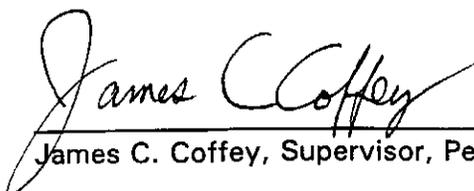
A report has also been received, dated January 23, providing information concerning proposed additional blasting at the site. This report indicates that there should be no impact on containment facilities and includes provisions for monitoring effects of blasting in the vicinity of the leachate pond and cell 2. Based upon the information presented in this report, additional blasting may proceed in accordance with procedures outlined in the report. Data obtained from blast monitoring, detonation information (charge size, depths, locations, etc.), and any other pertinent information should be included in the Construction Quality Assurance report. If anomalies occur during the proposed blasting, they should be investigated immediately and reported to the Section.

If you have any questions or require any other assistance, please feel free to contact this office.

Sincerely,


Bobby Lutfy, Hydrogeologist

Approved:


James C. Coffey, Supervisor, Permitting Branch

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

January 25, 1996

Bob Hunter
Buncombe County Solid Waste
30 Valley Street
Asheville, North Carolina 28801

Ref: Buncombe County Municipal Solid Waste Landfill, Permit to Construct Number 11-07

Mr. Hunter:

The Solid Waste Section (Section) has received a post-blast report, dated January 19, for the above referenced facility. The report indicates that blasting that has already occurred at the site should not have had any impact on proposed waste and leachate containment facilities.

A report has also been received, dated January 23, providing information concerning proposed additional blasting at the site. This report indicates that there should be no impact on containment facilities and includes provisions for monitoring effects of blasting in the vicinity of the leachate pond and cell 2. Based upon the information presented in this report, additional blasting may proceed in accordance with procedures outlined in the report. Data obtained from blast monitoring, detonation information (charge size, depths, locations, etc.), and any other pertinent information should be included in the Construction Quality Assurance report. If anomalies occur during the proposed blasting, they should be investigated immediately and reported to the Section.

If you have any questions or require any other assistance, please feel free to contact this office.

Sincerely,

Bobby Lutfy, Hydrogeologist

Approved:

James C. Coffey, Supervisor, Permitting Branch

IMPORTANT

To B

Date 1-25-96 Time 1:45, 2:15

WHILE YOU WERE OUT

M Bernie Garrett, Tim Grant

of CDM

Phone _____

AREA CODE NUMBER EXTENSION

TELEPHONED	<input type="checkbox"/>	PLEASE CALL	<input type="checkbox"/>
CALLED TO SEE YOU	<input type="checkbox"/>	WILL CALL AGAIN	<input type="checkbox"/>
WANTS TO SEE YOU	<input type="checkbox"/>	URGENT	<input type="checkbox"/>
RETURNED YOUR CALL		<input type="checkbox"/>	<input type="checkbox"/>

Message Buncombe Co
Blasting Plan

Perry
Signed

N.C. Dept. of Environment, Health, and Natural Resources



Printed on Recycled Paper

11-07

JOHN D. RUNKLE
ATTORNEY AT LAW
POST OFFICE BOX 3793
CHAPEL HILL, NORTH CAROLINA 27515
TELEPHONE: 919/942-0600

January 8, 1996

Office of Administrative Hearings
P.O. Drawer 27447
Raleigh, N.C. 27611-7447

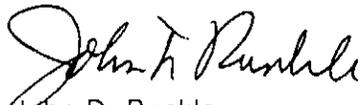
Re: North Buncombe et al. v. DEHNR

Dear Sir or Madam:

I sent a copy of this Petition for a Contested Case Hearing via facsimile this morning and am sending you the original and a copy for filing. Please stamp the additional copy and return it to me in the enclosed envelope.

Thanks for you consideration.

Sincerely,



John D. Runkle
Counsel for the Petitioners

cc. Service list

JOE - FYI

Post-It™ brand fax transmittal memo 7671 # of pages ▶ 3

To	JOE WISEMAN	From	BILL SESSOMS
Co.	CDM	Co.	NC DSWM
Dept.		Phone #	733-0692x2666
Fax #	781-5730	Fax #	

PLEASE PRINT

STATE OF NORTH CAROLINA
COUNTY OF (1) BUNCOMBE

(2) NORTH BUNCOMBE AGAINST THE DUMP and BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE, INC.
Petitioner,
(Your Name)

v.
(3) DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES, and SOLID WASTE SECTION,
Respondent.
(The State Agency or Board about which you are complaining)

PETITION
FOR A
CONTESTED CASE HEARING

I hereby ask for a contested case hearing as provided for by G.S. 150B-23 because the:

(4) Department of Environment, Health and Natural Resources -- Solid Waste has
Section (name of agency)

(Briefly state facts showing how you believe you have been harmed by the state agency or board.)

Issued Solid Waste Permit 11-07 to Buncombe County to Construct a Municipal Solid Waste Landfill. See attached.

(If more space is needed, use additional sheets and attach)

(5) (Check all that apply) Because of these facts, the agency has:

- deprived me of property;
- ordered me to pay a fine or civil penalty;
- otherwise substantially prejudiced my rights; and based on these facts the agency has exceeded its authority or jurisdiction;
- acted erroneously;
- failed to use proper procedure;
- acted arbitrarily or capriciously; or
- failed to act as required by law or rule.

(6) Date: January 8, 1995 (7) Your telephone number: (919) 942-0600

(8) Print your address: see attached

(9) Print your name: John D. Runkle, Attorney at Law

(10) Your signature: John D. Runkle

You must mail or deliver a COPY to the State Agency named on line (3) of this form. Please indicate below.

CERTIFICATE OF SERVICE

I certify that this Petition has been served on the State Agency named below by depositing a copy of it with the United States Postal Service with sufficient postage OR by delivering it to the named agency.

Served on: see attached

(11) _____ (name) (12) _____ (agency)

(13) _____ (address)

(14) This the _____ day of _____, 19____.

(15) _____ (your signature)

When you have completed this form you MUST mail or deliver the ORIGINAL and one COPY to the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, NC 27611-7447.

ATTACHMENT TO PETITION FOR A CONTESTED CASE HEARING --
North Buncombe Against the Dump and Blue Ridge Environmental Defense League
v.DEHNR

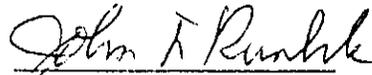
Petitioners -- North Buncombe Against the Dump is a Buncombe County chapter of the Blue Ridge Environmental Defense League, Inc. The groups have members throughout western North Carolina, including Buncombe County and landowners adjacent to the proposed solid waste landfill, and represent the rights and interests of those members in this Petition for a Contested Case Hearing.

Issues -- On November 7, 1995, the Respondent state agency, the Solid Waste Section of the Department of Environment, Health and Natural Resources issued Solid Waste Permit 11-07 to Buncombe County to construct a municipal solid waste landfill.

The Petitioners allege that the Respondent improperly issued the permit for the following reasons: (1) the seismic risk evaluation is inadequate and requires considerably more analysis and testing to meet State rules and standards; (2) the evaluations of bedrock and the entire hydrogeology of the site is technically inadequate; (3) the alternate monitoring systems do not provide advance notice of groundwater contamination; (4) the spring capture system does not adequately protect public health and the environment; (5) the gravity flow from the leachate collection system into the leachate pond is ineffective; (6) the proposed landfill design will necessitate blasting of rock outcrops and bedrock during construction; (7) the landfill will contaminate the water quality in Blevin Branch and other streams; and (8) other environmental, health and safety issues which may arise during the hearing process.

The Petitioners reserve the right to amplify and amend this Petition for a Contested Case Hearing in their prehearing statement or if issues arise during the hearing process.

Respectfully submitted this 8th day of January, 1996.



John D. Runkle
Attorney at Law
Counsel for the Petitioners
P.O. Box 3793
Chapel Hill, N.C. 27515

street address: 2122 Damascus Church Rd.
Chapel Hill, N.C. 27516

phone & fax 919-942-0600
NC State Bar No. 10503

CERTIFICATE OF SERVICE

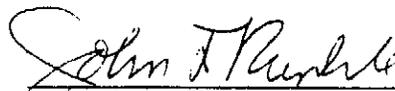
I hereby certify that this PETITION FOR CONTESTED CASE HEARING was served by hand or by deposit in the U.S. mail, postage prepaid, on the following:

Richard Whisnant
General Counsel
Department of Environment, Health and Natural Resources
P.O. Box 27687
Raleigh, N.C. 27611

James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section
401 Oberlin Road
Raleigh, N.C. 27605

William E. McElrath
Buncombe County Manager
One Oak Plaza
Asheville, N.C. 28801

This is the 8th day of January, 1996.



Attorney at Law

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

November 7, 1995

Bob Hunter
Buncombe County Solid Waste
30 Valley Street
Asheville, North Carolina 28801

Ref: Buncombe County Municipal Solid Waste Landfill
Permit to Construct Number 11-07

Mr. Hunter:

Enclosed please find a Solid Waste Permit and Certified Copy of the Solid Waste Permit for the above referenced landfill.

This permit approves the facility plan and construction of Cells 1 and 2, and partial construction of Cell 3 as shown on the approved plans.

As per condition number 1, the recorded certified copy of the permit shall be returned to William D. Sessoms, Solid Waste Section, at the above address.

If you have any questions or require any other assistance, please feel free to contact the Regional Waste Management Specialist, Mr. Al Hetzell at (704) 251-6208 or this office [email: sessomswd@wastenot.ehnr.state.nc.us].

Sincerely,

A handwritten signature in black ink that reads "William D. Sessoms". The signature is written in a cursive style and is positioned above a horizontal line.

William D. Sessoms, PE

attachments

copy: Al Hetzell - DEHNR
Julian Foscue - DEHNR
Jan McHargue - DEHNR
Bobby Lutfy - DEHNR
Joe Wiseman, PE - Camp Dresser & McKee

C:\SESSOMS\PROJECTS\BUNCOMBE\LETTER.8

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



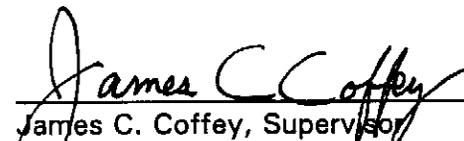
PERMIT 11-07
Part 1 - Permit to Construct
November 7, 1995
Page 1

SOLID WASTE PERMIT

BUNCOMBE COUNTY

is hereby issued a permit to CONSTRUCT a
MUNICIPAL SOLID WASTE LANDFILL

located on Panther Branch Road, North Carolina State Road 1745, Buncombe County, North Carolina in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The facility is located and described by the legal description of the site or the property map contained within the approved application.


James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

ATTACHMENT 1

Approved Documents

1. Buncombe County Solid Waste Management Facility, Permit to Construct Application, Volume 1 of 2, dated March, 1995, as revised.
2. Buncombe County Solid Waste Management Facility, Permit to Construct Application, Volume 2 of 2, dated March, 1995, as revised.
3. Plans entitled Engineering Plan, Buncombe County Solid Waste Management Facility, dated March, 1995, sheets EP-1 through EP-6, D-1 through D-4 as revised.
4. Plans entitled Facility Plan, Buncombe County Solid Waste Management Facility, dated March, 1995, sheets SD-1, SD-2, LC-1 through LC-4, LO-1 through LO-9, as revised.
5. Plans entitled Construction Plan, Cells 1 through 3, Buncombe County Solid Waste Management Facility, dated September, 1995, sheets C-1 through C-9, D-1 through D-4, E-1 and E-2, latest revision.
6. Response to Technical Review Design Hydrogeologic Report/Water Quality Monitoring Report, Buncombe County Solid Waste Management Facility, dated June, 1995.
7. Response to Technical Review Design Hydrogeologic Report/Water Quality Monitoring Report, Buncombe County Solid Waste Management Facility, dated August, 1995.
8. Modification to Permit, Construction Plans - Cells 1 through 3, Proposed Buncombe County Solid Waste Management Facility, dated October 6, 1995.
9. Camp Dresser & McKee letter, dated November 2, 1995, subject: Alternate Monitoring System.

ATTACHMENT 2

Construction and Pre-Operative Conditions of Permit

GENERAL CONDITIONS

1. This permit shall be effective upon compliance with 15A NCAC 13B .0204 and when the certified copy with the page, book number, date of recordation, and Register's seal is returned to the Solid Waste Section (Section).
2. This landfill and facility is subject to the requirements of all applicable sections of the most recent version of the North Carolina Solid Waste Management Rules, 15A NCAC 13B and the specific conditions contained herein.
3. Buncombe County shall amend this permit pursuant to 15A NCAC 13B .1603(a)(2) for any subsequent phase of development.
4. This facility shall conform to the specific conditions set forth in this permit and the provisions of 15A NCAC 13B .1604(b)(2).
5. The approved plans are described in Attachment 1, "Approved Documents". Where discrepancies may exist, the most recent approved submittal and Conditions of Permit shall govern.

CONSTRUCTION CONDITIONS

6. This permit approves the development and construction of Municipal Solid Waste Landfill units, Cells 1, 2, and 3. This permit also approves the on-site environmental management and protection facilities as described in the approved plans.
7. Landfill units other than Cells 1, 2, and 3, shown on the approved plans, are for facility information purposes only and are not approved for construction by this permit.
8. The underdrain system under future Cell 6 is approved for construction during the construction of initial Cells 1, 2, and 3.
9. Buncombe County shall conduct a pre-construction meeting, on site, prior to initiating construction and shall notify the Solid Waste Section 10 day prior to said meeting.
10. Additional conditions and revisions of the approved documents or changes during construction of the landfill require approval by the North Carolina Solid Waste Section.

11. Buffer zones are as established in the approved plans and 15A NCAC 13B .1624(b)(3) and (4). Solid Waste Section approval is required for use of buffer zones other than as defined in the approved plans.
12. Construction of this facility shall be accordance with 15A NCAC 13B .1624 and the approved plans. The hydraulic conductivity of the clay liner shall be as specified and in no case shall be greater than 1×10^{-7} cm/sec.
13. Any modifications in sedimentation and erosion control activities require approval by the Land Quality Section. The Section shall be notified of any sedimentation and erosion control modifications.
14. The owner's geologist shall examine the cell excavation and note any pertinent geologic features exposed during the construction process and shall notify the Solid Waste Section Hydrogeologist of these findings prior to the placement of any liner materials.
15. Revisions to the spring capture system may be necessary dependant upon conditions encountered during construction. The Section shall be notified when sub-grade construction begins and also when sub-grade construction nears completion. The Section, owner's engineer, and owner's hydrogeologist shall examine the site to determine if additional spring capture system installation is necessary or if revisions to the spring capture system shown on the plans is required. Grading modifications may also be necessary dependent upon conditions encountered during construction.
16. Excavation to subgrade of the leachate pond shall occur at the beginning of grading operations. Test pit excavation or other methods shall be performed to verify depth to bedrock.

Should bedrock elevations be higher than anticipated, grading design modifications to the leachate pond shall be made in order to maintain four foot vertical separation between the pond liner and bedrock. Any modifications require prior approval by the Section.

Documentation that minimum four foot separation from the leachate pond liner system to bedrock shall be included in the Construction Quality Assurance report.

17. The Solid Waste Section Hydrogeologist shall be notified when ground-water monitoring well installation procedures are to begin. The owner's geologist shall be in the field to supervise all well installations.
18. For each monitoring well constructed, a well construction record, well schematic, boring log and a description of well development activities shall be submitted to the Section within 30 days upon well completion.

19. Any modifications to the approved water quality monitoring plan require approval by the Section Hydrogeologist. Documentation of all changes to the approved plan shall be submitted with the well construction records.

PRE-OPERATIVE CONDITIONS

20. Prior to receiving waste at this facility, a Permit to Operate, Part 2, must be obtained from the Solid Waste Section in accordance with 15A NCAC 13B .0201(b).
21. The following requirements shall be met in order to obtain a Permit to Operate, Part 2, for this facility:
 - a. Site preparation shall be in accordance with the approved plans, and the conditions specified herein.
 - b. Site inspection shall be made by a representative of the Solid Waste Section.
 - c. A Construction Quality Assurance (CQA) report shall be prepared in accordance with the approved plans and 15A NCAC 13B .1621 and .1624(b)(15).
 - d. All necessary Local, State, and Federal permits or approvals to manage leachate must be obtained and copies submitted to the Section. Location and operation of leachate management facilities at the landfill facility requires Section approval.
 - e. All drinking water wells scheduled for abandonment must be abandoned and the Well Abandonment Records submitted to the Section.
 - f. Ground water monitoring wells, surface water sampling locations, and (if water is present) alternate monitoring system outlet pipes must be sampled for Appendix I constituents.
 - g. Prior to issuance of the Permit to Operate, a pre-operative meeting shall be held on-site with key landfill personnel and representatives of the Solid Waste Section.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



October 15, 1995

Bob Hunter
Director
Buncombe County Solid Waste
30 Valley Street
Asheville, North Carolina 28801

Re: Construction Quality Assurance
Buncombe County Municipal Solid Waste Landfill

Mr. Hunter:

The Division of Solid Waste Management, Solid Waste Section (Section) has completed the initial review of the above referenced project. The following items must be provided or addressed in order to continue the review process. Revisions must be made in accordance with 15A NCAC 13B .1603(b).

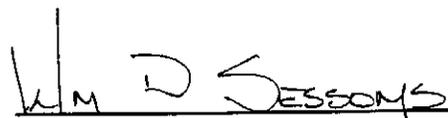
The engineering portion of the Construction Quality Assurance documentation appears to be essentially complete. It is understood that final pump installation is needed for leachate handling, both in the cell and in the leachate pond.

A pre-operation meeting between Buncombe County and the Regional Waste Management Specialist must be held prior to issuance of the Permit to Operate. Mr. Al Hetzell has contacted Camp Dresser & McKee to tentatively schedule a meeting for the week of October 21. Mr. Hetzell may be reached at (704) 251-6208 extension 212.

Monitoring well installation and background sampling must be completed and approved by the Section Hydrogeologist, Mr. Bobby Lutfy, prior to issuance of the Permit to Operate. For further information, Mr. Lutfy may be reached at (919) 733-0692 extension 258.

The Section reserves the right to request additional information as the review warrants. If you have any questions or if we can provide any assistance, please do not hesitate to contact this office at (919) 733-0692 extension 266.

Thank you,


William D. Sessoms, PE

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

August 17, 1995

MEMORANDUM

TO: Bill Sessoms

FROM: Bobby Lutfy *BL*

RE: Buncombe County Design Hydrogeologic Report

With the revisions received yesterday, the Buncombe County Design Hydrogeologic Report is complete and meets the requirements of the Solid Waste Management Rules. A Permit To Construct can now be issued, subject to the following conditions.

As we discussed earlier this week with Camp, Dresser & McKee, there is still some concern as to if the four foot vertical separation from bedrock can be met in the vicinity of the leachate pond. One of the conditions of the Permit To Construct should be to require that the excavation in the vicinity of the leachate pond be done early in the construction process in order to determine if the excavation necessary to maintain the vertical separation can be attained with conventional earth moving equipment. If this can not be achieved, then the leachate pond will need to be redesigned.

All ground-water monitoring wells, surface water sampling locations, and (if water is present) alternate monitoring system outlet pipes must be sampled for Appendix I constituents prior to the issuance of the Permit To Operate. A condition of the Permit To Operate should be that the ground-water monitoring wells, surface water sampling locations, alternate monitoring system outlet pipes, and the leachate pond be sampled at least semi-annually for the Appendix I constituent list.

All drinking water wells scheduled for abandonment must be abandoned and the Well Abandonment Records submitted to the Solid Waste Section prior to issuing the Permit To Operate.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

July 28, 1995

To: Bill Sessoms

From: Bobby Lutfy *BL*

RE: Hydrogeologic Review Of "Response to Comments - Buncombe County MSWLF Landfill Design Hydrogeologic Report"

The "Response to Comments" were generally satisfactory. However there are a few critical items that still need correction or clarification. Buncombe County or their consultants need to provide further responses to the following items:

- Based upon a review of the boring logs, it appears that the Top of Bedrock Elevations for BC-114 and B-314 in Table 1 have been calculated incorrectly. The Proposed Base Grade Elevations in Table 1 do not appear to maintain the minimum four foot vertical separation from the top of bedrock elevations for these two borings (based upon the boring logs).
- The proposed Base Grade Elevation for B-247 in Table 1 is seven feet below the Top of Bedrock Elevation. The elevation for the base of the leachate lagoon is another ten feet deeper. This raises questions about the minimum four foot of vertical separation in the vicinity of the leachate lagoon.
- The Base Grade Elevations illustrated on Sheet 1 of the Hydrogeologic Report (and Sheet LC-1 of the Facility Plan) are different from the revised Base Grade Elevations illustrated on Sheet EP-2 of the Engineering Plan. The various plan sheets need to be consistent. The revised Base Grade Elevations are lower at some locations than those on the previous plans. The revised Base Grades and the 36 inch compacted subgrade and six inch stone drainage layer that are proposed for the Alternate Groundwater Monitoring System raise even more concerns about maintaining the four foot vertical separation from bedrock. This is especially a concern in the vicinity of the leachate pond.

- It was our understanding from our last meeting that the Alternate Groundwater Monitoring System would also be installed for the leachate pond, however the design drawings do not show this.
- Although the revised Engineering Plans show some information on the Alternate Groundwater Monitoring System, there is no discussion of this system in the Design Hydrogeologic Report. This discussion and further details for the Alternate Groundwater Monitoring System must be provided. Further clarification needs to be provided that distinguishes between the Base Grades for the Composite Liner System and the Base Grade for the Alternate Groundwater Monitoring System.
- Engineering detail drawings need to be provided for the sumps and outlets for the Alternate Monitoring System. These need to be designed in such a way as to facilitate sampling at these locations.
- Please provide information on which borings were identified with each of the lithologic units used to develop the data for Table 2.
- Reference is made (on the bottom of Page 3) to the location of the water supply wells being shown on Sheet SD-2. However I was not able to clearly identify the location of the water supply wells referenced.
- Regarding sampling of water supply wells (Page 4), DEM had recommended sampling of water supply wells within 500 feet of the facility boundary in order to establish background values. There was no request to sample these wells as part of routine monitoring. Therefore the locations of all water supply wells within 500 feet of the facility boundary need to be clearly identified. Any water supply wells within 500 feet of the facility boundary in the general vicinity of the Cells 1-3 area should be sampled and analyzed for the Appendix I constituents prior to the Permit to Operate.

- The certification of the effectiveness of the water quality monitoring system (Appendix B) needs to site a geological professional, not an "engineering professional".
- For the Monitoring System Plan, the designations for the proposed monitoring wells are different on Plate 3-1 from Sheet 2. There should probably be further discussion with the Solid Waste Section about the monitoring system before a final proposed Monitoring System Plan is submitted.
- (Pages 12 and 13): For the Sampling And Analysis Plan, revised text needs to be provided to be inserted into the Design Hydrogeologic Report to clarify the sampling frequency, sampling equipment protocol, statistical comparisons, and the phrase "within 30 days".

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

June 22, 1995

Bob Hunter
Director
Buncombe County Solid Waste
30 Valley Street
Asheville, North Carolina 28801

Re: Permit to Construct Application
Proposed Buncombe County Municipal Solid Waste Landfill

Mr. Hunter:

The Division of Solid Waste Management, Solid Waste Section (Section) has completed the initial technical review of the above referenced project. The following items must be provided or addressed in order to continue the review process. Revisions to the application must be made in accordance with 15A NCAC 13B .1603(b).

- .1619(d)(1)(B) Location of scales, drop off facilities, and other waste management support facilities are not indicated. Are any support facilities of this nature proposed for location on site? If so, indicate on facility plans. If these activities are to be located off site, please indicate in report.
- .1619(d)(2)(A) Are borrow or stockpile areas proposed on site for either construction or operations purposes? If so, indicate on facility plans.
- .1619(e)(1) The estimated amount of solid waste on an annual basis is 132,750 tons (Section 1.2). This is the same amount that was estimated in the Site Study. The Site Study completeness review questioned this amount since a transfer station was permitted in Buncombe County. the response was that the transfer station may divert up to 32 percent of Buncombe County waste. The response also stated that the waste quantities received at the existing landfill would be reviewed before and after construction of the transfer station in order to estimate the quantity of waste requiring disposal for the Permit to Construct Application. There is no discussion of reduced volume of waste due to operation of a transfer facility. Have there been any changes in waste volume for disposal. If so, provide current estimates and reflect any changes at the appropriate place throughout the Permit to Construct application.
- .1619(e)(1)(A) Section 1.2.1 - Types of waste state that white goods, batteries, used motor oil, and common recyclables will be accepted and recycled. Will these items be accepted on or off site. If on site, indicate location of collection, separation, and storage facilities in the facility plans.

- .1619(e)(1)(B) Section 1.2.2 states that approximately 100,000 tons of waste will be disposed of per year. This is a difference of about 30 percent given in section 1.2. In addition, the estimated variance is not given.
- .1619(e)(2)(B)(ii) Include in Section 1.3.2 volumetric estimates for operating capacity for each phase of development.
- .1619(e)(2)(B)(iii) Include in Section 1.3.2 the operating life of the initial phase of development (Cells 1, 2, and 3).
- .1620(e)(2) & (3) Are contours shown on plan sheets EP-2 and EP-3 subgrade or top of composite? Sump pump detail shows that invert of pump should be elevation at top of HDPE and invert elevations on plans indicate that the contours are top of composite. However, the note on EP-3 seems to indicate that grades shown are subgrade. Please clarify.
- .1620(e)(3) Include detail cross-section drawing showing connection of cap system with base liner system. Drawing should be full section from subgrade to top of vegetative cover.
- .1622(3) Facility Plan, Section 1.6 should be revised to reflect wetlands disturbance.
- .1622(5) Engineering Plan, Section 2.4.5 contains a typographical error in the first sentence. The word *not* should be deleted.
- .1623(b) Please refer to the attached hydrogeological review memorandum.
- .1624(b)(9) Section 7 specifies Very Low Density Polyethylene (VLDPE) liner for the cap system. The Closure Plan and Engineering Plan (Appendix D.3) states that 40 mil HDPE will be used. Please clarify and make corrections in the appropriate places.
- .1624(b)(10) Appendix B.6 indicates header pipe calculations are for potential liner penetration leachate removal for future cells. It is the Section's understanding that the initial Cells (1, 2 and 3) will have leachate removed via 16" riser pipes with sump pumps (as indicated on details, facility drawings, and report). Revise Engineering drawings for cells 1, 2, and 3 to reflect 16" riser pipes for initial cell construction. For the review and permit record, you may wish to add an alternate facility plan sheet similar to LC-2 to reflect future alternative liner penetration leachate removal. Alternatives utilizing liner penetrations will require final review and approval at the time future cell construction review plans are submitted to the Section.
- .1624(b)(2) Plans and report should provide information regarding sizing and capacity of proposed sump pumps. Pump station system curves, force main capacity design, system cycling and operating parameters should be provided.

.1624(b)(8) 8.0×10^{-8} cm/sec hydraulic conductivity noted in CQA plan. Acceptance of conductivity test results greater than this value shall be at the discretion of the Engineer with a maximum conductivity acceptable to the Section of 1×10^{-7} cm/sec.

CQA Section 5.4.1 indicates undisturbed permeability test frequency of 1 per acre. Will the permeability tests be performed after last lift placement and through the entire clay liner or is frequency actually intended to be 1 per acre per lift?

Section 6.2.A refers to subgrade preparation conformance requirements prior to placement of synthetic liner. While it is inferred that the subgrade referred to is the clay liner, the Section recommends that references to subgrade be clarified to clearly indicate clay liner.

.1624(b)(11) The Section recommends that no protective layer material be placed until the drainage nets and filter fabric have been inspected and accepted by the Engineer. Suggest similar language to that found in Section 10.2.A.1.

CQA for granular material appears to be specifically for a sand drainage and protective layer. CQA methods and specification for the alternate rock drainage and protective layer need to be provided. Alternative rock layer also needs to be addressed in the Engineering Plan. In addition, engineering calculations and CQA methods and specifications need to be provided for the protective synthetic cushion in the rock alternative.

.1626 Revise Section 5.5 of the Operation Plan with the current Division address (Post Office Box 27687). Also correct in Section 9.4.

.1626(1)(c) Animal carcasses, abattoir waste, hatchery waste, and other animal waste disposal procedures not addressed.

.1626(1)(d) Specify and detail handling of asbestos waste procedures.

.1626(1)(e) Address waste water treatment sludge disposal (if this waste will be accepted for disposal).

.1626(4)(b) Show gas monitoring wells locations within Engineering Plans for installation of wells for cells 1, 2, and 3. Also show conceptual locations (subject to revision at time of construction plan approval) on Facility Plans for remaining cells. Monitoring Wells must be installed prior to receiving a Permit to Operate.

.1626(10)(b) Address record keeping procedures.

.1626(10)(c) Address operating record plans at the facility.

.1626(12)(d) Copy of disposal approval must be inserted into the operating record. Revise Plan to reflect this requirement.

- .1627(c)(3)(B) Indicate within Engineering Plans the preliminary locations of gas venting wells. The Section understands that final locations shall be determined at the time of closure by the Engineer with review by the Section.
- .1628(e) Provide financial assurance mechanism documentation (Local Government Test, Bond, Insurance, etc.). Financial assurance mechanism must be in place prior to receiving a Permit to Operate.
- .1680(f) Include cost estimate for removal or closure of leachate handling facilities and reflect revisions in financial assurance documentation.

Overall the Section found this application to be thorough, comprehensive and complete. Upon receiving the responses to the above comments, the Section will make every effort to expedite the review.

The Section reserves the right to request additional information as the review warrants. Operations Plans and Closure/Post Closure are currently being reviewed by Section field staff. Additional comments may be forthcoming for these areas.

If you have any questions or if we can provide any assistance, please do not hesitate to contact this office at (919) 733-0692 [email: sessomswd@wastenot.ehnr.state.nc.us].

Thank you,



William D. Sessoms, PE

enclosure

copy: James C. Coffey - DSWM
Jan McHargue, PE - DSWM
Bobby Lutfy - DSWM
Al Hetzell - DSWM
Joseph F. Wiseman, Jr., PE - CDM

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



April 27, 1995

MEMORANDUM

TO: Bill Sessoms

FROM: Bobby Lutfy *BL*

RE: Review Of The Design Hydrogeologic Report Of The
Construction Plan Application For The Proposed Cells 1-3
Of The Buncombe County MSWLF Landfill

The Construction Plan Application Design Hydrogeologic Report for the proposed Buncombe County MSWLF Landfill, Cells 1-3, has been reviewed for hydrogeologic concerns. The following questions and comments must be addressed before a full technical review can be completed or the Permit to Construct can be issued:

.1623 (b)

- (1) (A) Clarification is needed on the information necessary to demonstrate compliance with the vertical separation requirements of .1624(b) (4). A 1" = 100' scale plan view drawing of the subbase grades for Cells 1-3 should be submitted that accurately shows the location of the borings. A summary table should be submitted that shows the following information for each boring in or near the Cells 1-3 area: boring number, ground surface elevation, proposed subbase grade elevation (for the bottom of the clay liner), top of bedrock elevation, and seasonal high water table elevation.
- (2) (A) The information required in Subparagraphs (a) (4) through (a) (12):
- (a) (4) (E) A summary table and brief discussion should be submitted that provides the required information for each lithologic unit (hydrogeologic unit). This information should be provided for saturated and unsaturated units (vadose zone) as required by .1631(c) (2).

- (a) (7) (C) Normally more detailed information regarding the estimated long-term seasonal high water table would be required. Since the limiting factor for excavation at this site is bedrock rather than the water table, further discussion of the seasonal high water table will not be necessary.
- (a) (7) (D) Further discussion is needed of any natural and man-made activities that have the potential for causing water table fluctuations. The present discussion is confined mostly to seasonal variations in the water table.
- (2) (B) As previously referenced, a summary table is needed that presents the required information in .1631(c) (2) for each unsaturated and saturated geologic unit.
- (2) (C) Additional information is necessary on the proximity and withdrawal rate of the ground-water users and the availability of alternative drinking water supplies, as required by .1631(a) (2) (B) (iv) and (v). As referenced in my May 3, 1994, memo of review for the Site Study, additional information is needed for all water supply wells in the facility and within 500 feet of the facility. Which wells are to be abandoned and which will continue to be used? Have the wells within 500 feet of the facility boundary been sampled for Appendix I constituents?
- (2) (G) There are no flow nets or hydrogeologic cross-sections that characterize the vertical ground-water flow regime. Since the saturated zone is virtually all in the fractured bedrock, which is an environment where the potentiometric head is influenced by a number of variables, it is probably not useful to attempt to construct flow nets for the vertical dimension of ground-water flow. The Design Hydrogeologic Report should clearly establish the reason that this information has not been provided.
- (2) (I) The certification by a Licensed Geologist that all borings will be properly abandoned has not been provided.

(3) Water Quality Monitoring Plan:

(3) (A) (i) (II) As referenced in my May 3, 1994, memo for the Site Study, consideration of alternative monitoring systems may be necessary for the site. Because the aquifer is in the fractured bedrock, making it difficult to predict ground-water flow, it will also be difficult to design a ground-water monitoring system using only monitoring wells. Therefore the Buncombe County MSWLF site may be a site with hydrogeologic conditions favorable to detection monitoring by alternative methods. A thorough discussion of this issue should be provided in the report.

The pumping tests did demonstrate some degree of interconnectedness of fractures. The use of extended interval open borehole wells for the pumping wells complicates the usefulness of the data generated, especially in relation to evaluating design of a monitoring system using monitoring wells with limited screen intervals. Also, Figure 3-5 seems to indicate that the zones of influence are somewhat limited and do not cover the entire disposal area. The degree of drawdown was limited in a number of the wells that did show a response to the pumping tests, indicating that the degree of interaction between the fractures may be limited under normal (unstressed) conditions. Based upon the conclusion in the report that "The site groundwater system is largely composed of a complex fractured bedrock aquifer system" that "on a small-scale may be somewhat random", it appears prudent to evaluate the need for alternative monitoring for all or at least the more critical portions of the MSWLF disposal cells.

(3) (C) A certification of the effectiveness of the water quality monitoring plan has not been provided.

Additional questions and comments regarding the Design Hydrogeologic Report for the Buncombe County MSWLF Cells 1-3:

VOLUME ONE

Section 1, Facility Plan:

Sheet No. SD-2, Proposed Site Development, indicates a change in the proposed location for the construction and demolition (C&D) landfill. Portions of this newly proposed C&D area were not proposed for landfilling disposal in the Facility Plan submitted as part of the Site Plan application. Additional hydrogeologic subsurface characterization would be required for this area in order to consider permitting a C&D landfill. Establishing an effective ground-water monitoring system for this area would probably be difficult.

Section 2, Engineering Plan:

- 2.4.5 Seismic Impact Zones: This section is misleading, since the site is located in a seismic impact zone as defined by Rule .1622(5). The language should be changed to be consistent with the rules.
- Appendix F Geotechnical Analysis: Mark Landis needs to seal this report with his Professional Geologist seal in order to meet the requirements of Rule .0202(a)(3).
- Appendix F, on Page 2 states that "quartz veins and aluminosilicate pegmatites are common in such metamorphic environments". A Professional Geologist must evaluate the subgrade prior to liner construction to determine if quartz veins or pegmatites are present that could provide preferential ground-water flow paths that may affect the design of the monitoring system.
- Appendix F, Laboratory Test Results: Since the liquid limit for B-313, bag 2 (20'-30') is greater than 50, the USCS classification should be MH rather than CL.

VOLUME TWO

Section 2, Engineering Plan

Appendix G, Design Hydrogeologic Report:

- 2.2.2 Monitoring wells and piezometers should be constructed so that the sand filter pack extends a *maximum* of two feet above the top of the screen, rather than a *minimum* of two feet above the top of the screen, as referenced in the report.

- Table 3-1, Summary of Lithologic Data: The depth to PWR listed in Table 3-1 differs from the depth referenced in the boring logs for the following borings: B-359, B-360H, B-361, B-362H, B-363, B-365, B-366A, B-367, B-368, and B-369. There are similar discrepancies for the depth to bedrock data for borings B-362H and B-372.
- 3.3.1.1 The method of calculating the vertical gradient is different from the standard method normally used. Unless a reference can be provided to support the method used, the vertical gradients must be recalculated using the following formula: the difference in the water table elevation between two nested piezometers, divided by the vertical distance from the midpoint of the two piezometer screens of the nest. As previously referenced, the sand packs should not extend significantly above (or below) the screens.
- 3.3.3 Pumping Tests Results:
 - Why were extended interval open borehole wells used for the pumping wells? While these wells do indicated some degree of interconnectedness of fractures, use of the open borehole wells makes the data more difficult to interpret. It is especially difficult to know how to design an effective monitoring system using detection monitoring wells with limited screen intervals.
 - Why were methods for "confined aquifers" used? Normally an unconfined or semi-confined aquifer would be expected for shallow fractured bedrock. If the conditions are indeed confined, then this calls into question the degree of interconnectedness of the fractures and further complicates designing an effective monitoring system with monitoring wells.
 - Were efforts made to perform aquifer analysis using assumptions that more realistically fit the heterogeneous anisotropic conditions and significant gradients that actually exists at the site?
- Plate 3-3, Top Of Bedrock Elevation Map, Cell 1-3 Area: There appear to be some minor errors in the contours in several areas.
- Plate 3-5, Potentiometric Surface Map, February 1995, Cell 1-3 Area: There appear to be some minor anomalies and possible errors in the contours in several areas.

- Appendix B, Geotechnical Laboratory Data: What is the source of the natural water content and porosity values on Page 1 of Appendix B? Some of the values do not correlate to the data in the test reports.
- Appendix F, Piezometer Water Level Hydrographs: The scale and hydrograph for Piezometer B-227 is incorrect.

SECTION SIX, WATER QUALITY MONITORING PLAN

- 3.1 The plan proposes that "Shallow bedrock monitoring wells will target the shallowest water-bearing fracture zones encountered". Is this irrespective of the yield and interconnectedness of the fracture(s) in the proposed monitoring interval? The previous efforts to target more conductive zones for the Phase III study appear to have been to some extent successful and similar efforts should be used to target monitoring zones for the detection monitoring wells.
- 3.2 In determining if saturation conditions are evident upon refusal of hollow stem auger drilling, are seasonal variations in the water table and responses to precipitation events going to be considered? In light of the relief and the depth to water at the site, putting a 100 foot limit on the depth of the deeper wells may be too restrictive.
- Figure 3-1 The location of the upgradient monitoring wells and surface water monitoring locations need to be depicted more accurately on a larger scale map.
- Figure 3-2 The grout in the annular space of the monitoring well should come up to the ground surface. The top of the concrete slab should be sloped to shed water away from the well and should be thick enough to firmly anchor the outer well casing and protect the well from frost damage.
- As referenced previously, the sand filter pack should extend a *maximum* of two feet above the screen.
- 3.4 The exact locations of the surface water sampling locations need to be identified. Are the streams to be sampled from the near bank, or mid-stream, or composite samples? The spring capture systems must be designed in such a way as to provide sampling locations above the sedimentation basins.

SAMPLING AND ANALYSIS PLAN (SAP)

- 4.2 The baseline sampling event constitutes the initial semi-annual sampling event. Subsequent sampling is required at least semi-annually. Therefore the phrase "After the initial year" should be deleted from the text.
- If disposable bailers are used they must be Teflon bailers certified to have been cleaned according to the approved decontamination protocol.
- The sampling equipment decontamination protocol referenced on page 4-5 is incorrect. The acid rinse cleaning step has been omitted.
- 5.3 Statistical comparisons are required for each compliance monitoring well. Comparisons of differences in the average concentrations among wells, as referenced in the SAP, is not appropriate.
- 5.6 In item four (4) it is not clear what the frame of reference is for the phrase "within 90 days". The rules require that assessment monitoring be established within 90 days of the determination of a statistical increase or exceedence of the N.C. Groundwater Standards for any Appendix I constituent in any compliance monitoring well.

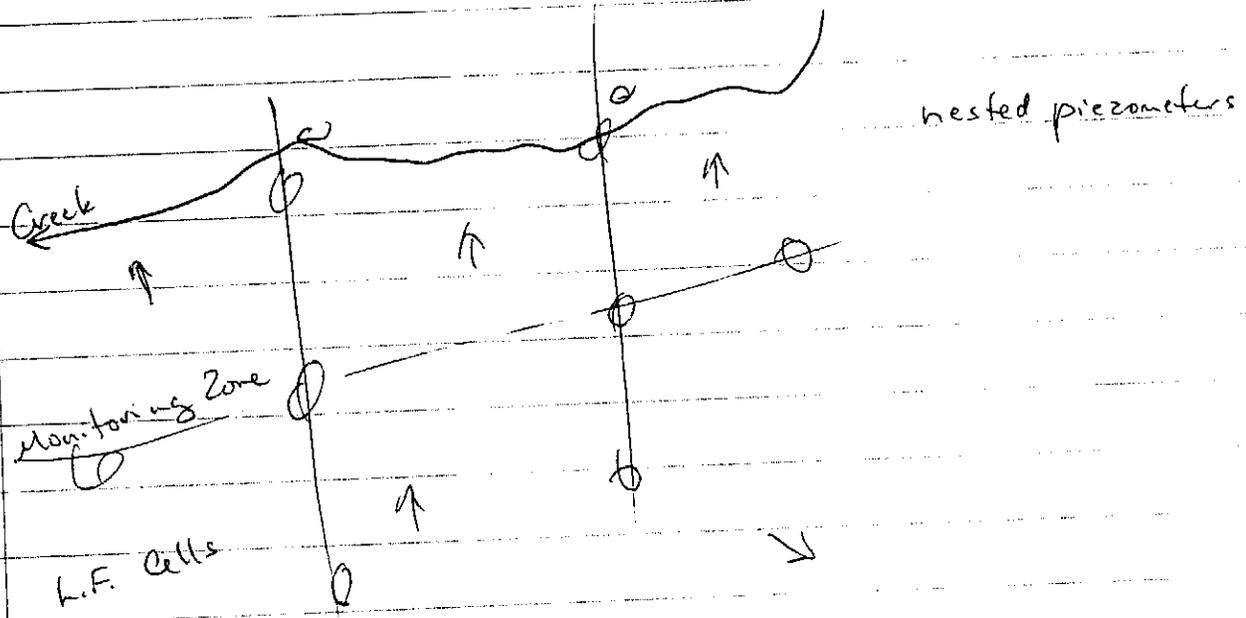
The full technical review of the Design Hydrogeologic Report can not be completed until the information and corrections requested in this memorandum have been provided. If Buncombe County or their consultants have any questions regarding this memorandum, they may contact me at (919) 733-0692, extension 258.

Aug. 10, 1994

Buncombe Co.

Cells 1-5
35 acres ±

Vance Moore
Mark Landis
Bobby Luffey



Hydgeo. Design Investigation

Cells 1-5 Buncombe Co. Proposed L.F.

C+D Area / "Serpentine Dike" Area
Tire Disposal Area

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

May 3, 1994

Mr. Bill McElrath
County of Buncombe
Office of the County Manager
One Oak Place, Suite 105
Asheville, North Carolina 28801

Re: General Conditions and Site Specific Design Requirements
Proposed Buncombe Solid Waste Management Facility
Buncombe County, North Carolina

Dear Mr. McElrath:

The Division of Solid Waste Management's Solid Waste Section (the Section) recently completed its review of the site plan application (SPA) for the proposed Buncombe County Solid Waste Management Facility located north of Asheville N.C. near the Alexander Community and off N.C. Highway 251. Buncombe County submitted the SPA prior to April 9, 1993 in accordance with 15A NCAC 13B.0504(1) thereby exempting the SPA from North Carolina's new Municipal Solid Waste Landfill Rules (15A NCAC 13B .1600) which became effective October 9, 1993. However, Buncombe County's application for a permit to construct a MSWLF unit (construction plan application) must meet the requirements of the new 15A NCAC 13B .1600 rules. This letter discusses the suitability of the site for use as a Solid Waste Management Facility; outlines a scope for additional subsurface investigation required to prepare the construction plan(s) for the disposal area and support facilities; and stipulates design and construction standards for the referenced facility.

Based upon information submitted and revised through April 14, 1994, the Section determined that the site proposed in the SPA is suitable for use as a Solid Waste Management Facility and that Buncombe County may prepare a construction plan application for the site in general accordance with the SPA's conceptual design plan and the specific requirements contained in this letter. However, the Section will approve a specific disposal area only after reviewing the Facility Plan, which 15A NCAC 13B .1617 (a)(1) requires as part of the construction plan application. Facility Plans shall define comprehensive development of the site and delineate the areal limits of all proposed landfill units, leachate management facilities, buffers, other solid waste management activities, and non-solid waste management activities.

GENERAL CONDITIONS AND SITE-SPECIFIC DESIGN REQUIREMENTS

Buncombe County must submit a construction plan application for Section review before the Section can issue a permit to construct. Section approval of a construction plan through the issuance of a permit to construct a MSWLF unit provides a maximum of five year's disposal capacity. Buncombe County's construction plan application shall therefore define, in the facility plan, the first five-year development phase, consistent with all applicable 15A NCAC 13B .1600 requirements. The construction plan application must also comply with the site-specific criteria set forth in this letter.

Design and Construction Standards

1. Buncombe County shall complete the construction plan application consistent with Rule .1617(a) in order to facilitate the permitting process and subsequent future landfill construction. The permit application shall include:
 - a) a Facility Plan per Rule .1619;
 - b) an Engineering Plan per Rule .1620;
 - c) a CQA Plan per Rule .1621;
 - d) an Operation Plan per Rule .1625;
 - e) Closure and Post-Closure Plans per Rule .1629; and
 - f) Water Quality Monitoring Plans per Rule .1623(b).
2. The Facility Plan required by Rule .1619 shall include a final leachate management plan which includes a letter stating acceptance, with specific terms and conditions, from the WWTP facility accepting the leachate. The Facility Plan shall also address pretreatment (if any) of the leachate as well as appropriate means of monitoring leachate generation and quality. Buncombe County shall obtain all necessary local, state, and federal permits or approvals prior to Section issuance of a permit to operate.
3. The Operation Plan shall clarify procedures for screening and directing facility patrons to the proper area(s) (e.g., recycling facilities (if constructed), yard waste facilities, tire collection and monofill areas) and how records will be kept for the separate activities. Buncombe County shall consider procedures which document that non-disposal activities lead towards North Carolina's mandated waste reduction goals.

Additional Subsurface Investigation

Buncombe County shall submit a geologic and hydrogeologic report, as a component of the construction plan application, which reports the results of additional subsurface investigation

Mr. McElrath
May 3, 1994
Page 3

at the site consistent with the requirements of Section .1623 of the Solid Waste Management Rules. Additional subsurface investigation shall provide:

1. adequate information to demonstrate compliance with the vertical separation and foundation standards set forth in 15A NCAC 13B .1624(b)(4) and (7); and
2. information regarding the hydrogeologic characteristics of the uppermost aquifer for the proposed phase of landfill development as well as the information requested for the facility described in the May 3, 1994 memorandum from the Section Hydrogeologist (copy attached). The purpose of this investigation is to provide more detailed and localized data on the hydrogeologic regime for the proposed disposal area(s) in order to design an effective groundwater monitoring system.

Buffers

The construction plan application, submitted in accordance with 15A NCAC 13B .1617(a)(1) shall include the following buffer criteria.

- (1) The facility shall incorporate and maintain, at a minimum, the horizontal separation requirements designated in 15A NCAC 13B .1624 (b)(3) and the following:
 - a) a minimum 50-foot buffer between the borrow areas and delineated wetlands; and
 - b) a minimum 50 foot buffer between disposal areas and delineated wetlands;
- (2) In accordance with 15A NCAC 13B .1624(b)(4), the facility shall incorporate and maintain, at a minimum, a minimum four foot vertical separation between the bottom of the liner system, under post-settlement conditions, and the seasonal high ground-water table and bedrock.

Buncombe County may utilize all non-disposal areas of the site, except buffer areas, for other solid waste management activities (such as yard waste composting or recycling) or for landfill support activities (such as leachate management and/or stockpiling of cover material) upon approval by the Solid Waste Section.

Please note that 15A NCAC 13B .0201 requires the Section to issue a Solid Waste Permit in two parts. The first part is a Permit To Construct and the second part is a Permit To Operate. The Section may only issue a Permit To Operate after it determines that the facility has been constructed in accordance with the construction permit and that all pre-operative conditions have been met. Also note that this letter only informs the applicant that they may

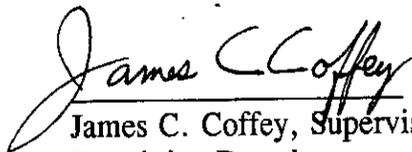
Mr. McElrath
May 3, 1994
Page 4

proceed with their permit application. The final action the Section may take on a permit application is the issuance or denial of a permit. Development of subsequent phases of the MSWLF facility will be subject to the requirements for permit renewal under adopted rule .1603(a)(5).

Should the Section issue a Permit to Construct and subsequent Permit to Operate for this site, the Section will issue the permit(s) to Buncombe County as owner and operator. The Section encourages Buncombe County to take an aggressive approach to comprehensive solid waste management in order to contribute towards the State's waste reduction goals and lessen dependency upon conventional disposal in a MSWLF. Buncombe County should consider utilizing portions of this site for other solid waste management options (recycling, composting, household hazardous waste collection, etc.). The Section will make itself available to discuss these options upon request.

We appreciate your continuing cooperation. If you have any questions, or would like to schedule a meeting to discuss this letter, please contact our office at (919) 733-0692.

Sincerely,



James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: Bob Hunter, Director, Buncombe County Solid Waste Department
Ellis Cayton, P.E.
Bobby Lutfy
Julian Foscue
Al Hetzell
Jan McHargue, P.E.
Joe Wiseman, P.E. - CDM

attachment

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



May 3, 1994

MEMORANDUM

TO: Ellis Cayton
FROM: Bobby Lutfy *BL*
RE: Hydrogeologic Review Of The Site Study For The Proposed
Buncombe County Solid Waste Management Facility

The Site Study for the proposed Buncombe County Solid Waste Management Facility has been reviewed for hydrogeologic concerns and the proposed site appears generally suitable for development as a solid waste management facility. Because the uppermost aquifer is primarily in the fractured bedrock, there are some concerns regarding monitoring of the site. The additional hydrogeologic study required for the Design Hydrogeologic Report should provide more detailed information that will assist in decision making regarding buffers, design, and effective monitoring of the waste disposal areas at the site.

Since the ground water is located in the fractured bedrock, it is more difficult to predict ground-water flow. It is not clear based on existing data if there is sufficient interconnectedness of the fractures to provide assurance that monitoring with wells will be adequate to ensure detection of any release of hazardous constituents from a waste disposal cell. Further hydrogeologic characterization using aquifer pump tests and/or other tests will be necessary in order to determine the interconnectedness of the fractures and the ability to monitor effectively using detection monitoring wells. It may be necessary to consider additional buffers and alternative monitoring systems at the site.

On-site water supply wells should be abandoned. A 500-foot buffer is required between wastes and any residence or water supply well. The Division of Environmental Management, Groundwater Section, has recommended that all water supply wells within 500 feet of the facility boundary be sampled prior to any landfilling operations, to establish background water quality. There are several water supply wells along the north and east facility boundaries that should be included in this sampling. Clarification should be provided in the Construction Plan Application regarding which private wells in the vicinity of the solid waste management facility are to be abandoned and which will continue to be in service after the facility is developed.

The proposed Construction and Demolition Landfill is close to the Serpentine Dike area identified by the North Carolina Natural Heritage Program as an unusual natural community. Although the proposed landfill itself does not appear to impinge upon the Serpentine Dike area, there appears to be some potential for contamination to migrate in the direction of the Serpentine Dike Natural Area should there be a release of leachate at the Construction and Demolition Landfill site. Further hydrogeologic study is needed in this area and additional buffers and design modifications may be necessary in order to protect the Serpentine Dike Natural Area. Buncombe County may want to consider relocating the proposed Construction and Demolition Landfill to another area of the site.

Blasting of rock and heavy ripping of rock should be avoided. Auger borings should be used to define the top of bedrock and a bedrock contour map should be prepared for the Design Hydrogeologic Report as required by Rule .1623(b)(2)(F). The MSWLF unit shall be constructed so that the post settlement bottom elevation of the base liner system is a minimum of four feet above the bedrock as required by Rule .1624(b)(4).

The water quality monitoring plan should be revised and included in the Design Hydrogeologic Report as required by Rule .1623(b). The design of the ground-water monitoring system should be based on the additional data provided in the Design Hydrogeologic Report and the design of the waste disposal units in the Engineering Plan.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

April 29, 1994

MEMORANDUM

TO: Ellis Cayton
FROM: Bobby Lutfy *BL*
RE: Hydrogeologic Review Of The Site Study For The Proposed
Buncombe County Solid Waste Management Facility

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Disposal cell development and monitoring would be easier if the design worked with the natural topography so that each disposal cell is confined to one side or the other of the east-west trending ridgeline that creates a ground-water divide for the site. Different disposal cells could be placed to the north or south of this divide, but no disposal cell should be designed to pass over the divide.

On-site water supply wells should be abandoned. A 500 foot buffer is required between wastes and any residence or water supply well. The Division of Environmental Management, Groundwater Section, has recommended that all water supply wells within 500 feet of the facility boundary be sampled prior to any landfilling operations, to establish background water quality. There are several water supply wells along the north and east facility boundaries that should be included in this sampling. Clarification should be provided in the Construction Plan Application regarding which private wells in the vicinity of the solid waste management facility are to be abandoned and which will continue to be in service after the facility is developed.

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County of



Buncombe

OFFICE OF THE COUNTY MANAGER
ONE OAK PLAZA - SUITE 105
ASHEVILLE, N.C. 28801

Telephone: 704/255-5650

William E. McElrath, Jr.
County Manager

Fax: 704/255-5461

March 10, 1994

Mr. Bobby Lutfy, Senior Hydrogeologist
NC Dept. of Environment, Health & Natural Resources
Solid Waste Section
P O Box 27687
Raleigh, NC 27611-7687



Dear Mr. Lutfy:

As you know, siting a landfill is a difficult undertaking for the State as well as the County, and I thank you for your guidance and cooperation. However, we have been involved with the process for over three (3) years, and have held the property owners of the proposed site in limbo. Not only do we have the landfill siting problem, with the revaluation of property in Buncombe County this year, the property owners as well as the county staff have concerns about the "true" value of the property. Each day of wait causes us more problems.

Last year at this time the Board of Commissioners agreed to pay the State to "Fast Track" the process. In fact, the payment was made. Our "sights" were then focused on September, 1993 as to when we would have word on the first phase of "Fast Tracking." Bob Hunter, our Solid Waste Director, now informs me that a phone conversation with you today indicates that we will finally have an answer by the end of this month (March 31, 1994). This office, our Board of Commissioners, and the affected land owners look forward to this decision because we will have data to help resolve this issue.

We eagerly await your report.

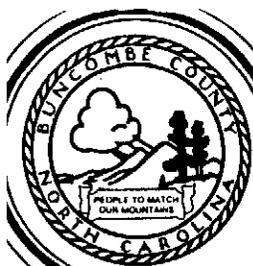
Sincerely,

William E. McElrath, Jr.
County Manager

cc: Board of Commissioners
Bob Hunter

County of Buncombe

Bobby Luffy



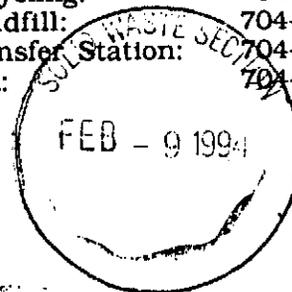
**SOLID WASTE
30 VALLEY STREET
ASHEVILLE, NC 28801**

Bob Hunter, Director

DIVISIONS

Office: 704-255-5066
Recycling: 704-255-5066
Landfill: 704-658-0137
Transfer Station: 704-253-6826
Fax: 704-255-5722

February 7, 1994



Mr. Ellis Cayton
NC Solid Waste Section
PO Box 27687
Raleigh, NC 27611-7687

Re: Completeness Review of Site Plan Application

Dear Mr. Cayton:

I received a copy of your letter to our engineer, Mr. Joe Wiseman, stating that the landfill site application is complete as of January 28, 1994. Buncombe County appreciates your expediting the completeness review and further processing of our application.

We realize that a thorough review is necessary and that additional information may still be needed to complete that process. On the other hand, it is our understanding, based on a March 23, 1993, memo from Steven Levitas and subsequent communications, that we can expect a decision on the site plan within ninety (90) days after our application is complete. Please keep up informed as to progress toward the decision and feel free to call me or Mr. Wiseman immediately if further information is needed. Let me assure you that we will move quickly as possible to resolve any remaining questions.

Once again, thanks for your diligence in quickly processing our application.

Sincerely,

Bob Hunter, Director
Dept. of Solid Waste

bh/vh

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director



February 2, 1994

Mr. Preston Howard, P.E., Director
Division of Environmental Management
P.O. Box 27687
Raleigh, NC 27611

RE: New Buncombe County Solid Waste Management Facility

Dear Mr. Howard:

Enclosed is a copy of the site permit application for the referenced new Municipal Solid Waste Landfill. Please respond with written comments within 30 days of receipt of this application in accordance with the memorandum of agreement.

Should you have any questions concerning this request, please contact this office at (919) 733-0692.

Respectfully,

Ellis Cayton

Ellis Cayton, P.E.
Solid Waste Section

cc: Jim Coffey
Julian Foscue
~~Bobby Lutfy~~
Bob Hunter, Director, Buncombe County Solid Waste Department
Joe Wiseman, P.E.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management



James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

February 1, 1994

Mr. Joe Wiseman, P.E.
Camp, Dresser & McKee
Carolina Corporate Center
5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

RE: Completeness Review - Site Plan Application for the proposed Buncombe County Solid Waste Management Facility

Dear Mr. Wiseman:

On January 28, 1994, the Solid Waste Section (the Section) received a complete site plan application for the referenced project submitted by Camp, Dresser & McKee in behalf of Buncombe County. With receipt of a complete site plan application, the Section will now initiate a technical evaluation of the referenced application to ensure that the plan complies with North Carolina Solid Waste Management Rules.

Please note that this letter in no way restricts the Section's right to request additional information during the technical review process. If you have any questions or would like to arrange a meeting to discuss this letter or the application, please do not hesitate to contact the Section at (919) 733-0692.

Respectfully,

Ellis Cayton

Ellis Cayton, P.E.
Solid Waste Section

cc: Bob Hunter, Director, Buncombe County Solid Waste Department
Jim Coffey
Julian Foscue
Al Hetzell
~~Bobby Lutfy~~

Bobby Lutfy



State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

SOLID WASTE MANAGEMENT DIVISION
TELEPHONE: (919) 733-0692

Jonathan B. Howes, Secretary

April 29, 1993

MEMORANDUM

TO: Jim Coffey
FROM: Dave Lown 
RE: Status Report on Site Plan Applications - Buncombe, Bertie, Anson, and Montgomery Counties

Completeness reviews have been done and letters or memos requesting additional information have been prepared for each county. Additional information is needed for Bertie, Montgomery, and Buncombe Counties before the technical review can be completed. Anson County has the most complete Site Plan Application. A technical review for the Anson site is underway. To expedite the technical review of the Bertie site, published data on the hydrogeology of the region is being researched.

Anson

While the data collected for this site is impressive, the hydrogeologic characterization of the site is inadequate. GZA, the consultants that prepared the report, conclude that "... no correlation can be made between bedrock hydraulic conductivity and rock type or ... fault zones ..."

I believe that Triassic faults and igneous dikes have a profound effect on the groundwater hydrology of the site. GZA's conclusions are based on a careless geologic analysis of the available data. For example, there are three major bedrock units at the site, Triassic sediments, Triassic igneous dikes, and Carolina Slate Belt argillite. In the first paragraph of the section on the Regional Geology (Vol. III, page 3, par. 1), Carolina Slate belt argillite is called the Uwharrie Formation. The closest rocks mapped as Uwharrie are 20 miles northeast of the site. This blunder was repeated in the text and on the figures.

Jim Coffey
April 29, 1993
Page 2

Bertie

Bill Hodges and representatives from Addington indicated that the information needed to expedite the technical review was available and would be forwarded to us as soon as possible. In the meantime, I am reviewing published literature on the hydrogeology of the Bertie County region.

Montgomery

The Site Plan Application did not provide sufficient information to characterize the hydrogeology of this site. Additional data was requested from Bill Hodges and Addington. Bill Hodges said that we would get the information as soon as possible.

Buncombe

This application does not contain adequate information to start a technical review. (For example, the potentiometric map for a 557 acre site is based on 6 data points).

In a memo to Ellis Cayton, I outlined the information needed to begin the technical review. The memo will be incorporated into a letter being prepared for Buncombe County.



State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

SOLID WASTE MANAGEMENT DIVISION
TELEPHONE: (919) 733-0692

Jonathan B. Howes, Secretary

April 29, 1993

Mr. Joe Wiseman, Jr., P.E.
Camp Dresser & McKee
Carolina Corporate Center
5400 Glenwood Avenue, Suite 300
Raleigh, NC 27612

RE: Completeness Review
Site Plan Application
Proposed New Buncombe County Solid Waste Facility

Dear Mr. Wiseman:

The Solid Waste Section has conducted a preliminary review of the above referenced project. In order to continue and expedite the review process, the following comments, and the attached comments from Dave Lown to Ellis Cayton concerning geologic and hydrogeological aspects of the site plan application, must be addressed:

1. Pursuant to 15A NCAC 13B Section 0.0504 (1)(a), the aerial blueprint must accurately and specifically identify, among several items, land use and zoning, wells, watercourses, dry runs and other applicable details regarding the general topography. Section 2.2 of the application indicates that "none of the property on or within one-quarter mile of the site is zoned." Please transfer this information to the aerial blueprint.

Also the one-quarter mile radius map, as submitted, indicates that several residences as well as other structures are located within one-quarter mile of the proposed landfill boundaries. Section 2.4.1 of the application's written report states that "all residences within one-quarter mile of the proposed site are currently served by individual, private wells." Please indicate this information on the one-quarter mile radius map and also note if any drinking water wells serve commercial establishments in the one-quarter mile zone.

Mr. Joe Wiseman, Jr.
April 29, 1993
Page 2

In addition, Section 4 of the written report discusses intermittent streams and spring fed streams which drain the central portion of the site. Please identify these stream and spring areas on the site.

2. The two mile radius map submitted as part of the application and in accordance with 15A NCAC 13B 0.0504 (1)(b)(i) indicates that only one public water supply exists within two miles of the proposed site's boundaries. However, Appendix E of the application contains correspondence from the Public Water Supply Section which indicates that another potential public water supply exists in the same general area as another public water supply identified earlier in the letter (approximately two miles north-northeast of the proposed site). While Section 3.1 of the application's written report states that "significant groundwater users ... include public or private water distribution utilities ...", the Water Supply Section's comments, coupled with the concentration of subdivisions in the region, leads the Section to believe that additional information regarding potable water resource information is necessary for all of the subdivisions and trailer parks within two miles of the proposed landfill's boundaries. For these areas, please provide more specific information regarding potable waste resources and the total number of residences or customers using a particular well. Also determine the source and status of the water supply used by Red Oak School.
3. Page 3-2 of Buncombe County's Site Plan Application suggests that Figure 3-2, in accordance with 15A NCAC 13B Section 0.0504 (1)(b)(ii), will show several sources of potential surface and ground water pollution within two miles of the proposed site. However, the figure appears to be missing from Section 3. Could CDM provide assistance in locating the figure?
4. The North Carolina Natural Heritage Program, in correspondence dated 21 October 1992 to Camp Dresser & McKee, indicated that Robert J. Goldstein & Associates failed to include the Branching draba (*Draba ramosissima*) and the Carolina Saxifrage (*Saxifraga caroliniana*) in the Protected Species Survey submitted to the Natural Heritage Program. While the Natural Heritage Program conceded that neither of these rare plant species is legally protected, they indicated that "the Candidate species may in the future be added to protected lists, either by the N.C. Plant Conservation Program or by the U.S. Fish and Wildlife Service." Will future protection

of these rare plant species coupled with North Carolina Solid Waste Management Rules concerning endangered species and associated habitat (15A NCAC 13B (1)(b)(i & ii) affect the suitability of this site for landfilling activities?

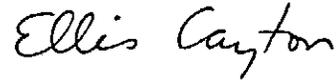
5. Section 7.4 of the application states that Appendix D contains a copy of the archaeological or historical site correspondence generated to date (18 November 1992). Correspondence from the Division of Cultural Resources appears in Appendix E. Please clarify and also forward any updated correspondence from the Division of Cultural Resources.
6. There are several statements throughout the application which state "that there are sufficient and suitable soils for cover material". Please submit further data to support this concern.
7. Section 8.2.2 of the application estimates that the proposed landfill will need to provide lined landfill capacity for 132,750 tons of solid waste in the initial year of operation and 151,500 tons in the year 2013. Since the Solid Waste Section recently approved plans for a private waste hauler to construct a large capacity transfer station in the Asheville area, the Section questions these estimates. Please address the possible diversion of large quantities of waste out of the Buncombe Service area when projecting disposal capacity needs for the first five years of operation.
8. Section 5.2 of the application's conceptual design describes proposed buffers for the site. Please incorporate into the proposed buffer plan precautions which may be taken to avoid and minimize impacts to the two priority natural areas (the Panther Cliffs and Flat Creek Serpentine Dike areas) identified in the correspondence from the Natural Heritage Program.

Should the Section approve areas on the proposed site for use as a disposal area, the Section will encourage Buncombe County to incorporate Robert Goldstein's suggestion into any subsequent construction plan application to not manage these areas for timbering. The Section will also encourage Buncombe County to include into any future construction plan application measures to minimize visual impacts caused by the proposed landfill on the French Broad River including a vegetative screening plan.

Mr. Joe Wiseman, Jr.
April 29, 1993
Page 4

9. In order to continue the site plan application review process, please forward the following information to the Section office:
 - i. an approved wetlands delineation from the Army Corps of Engineers and the associated Water Quality Certification from the N.C. Division of Environmental Management; and
 - ii. a completed Archaeological and Historical Survey as discussed in Section 7.4 of the application.

Sincerely,



Ellis Cayton, P.E.
Solid Waste Section

EC/mju

Attachment

cc: Julian Foscue
Bill McElrath
Bobby Lutfy



State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604

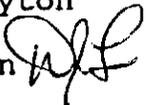
James B. Hunt, Jr., Governor

SOLID WASTE MANAGEMENT DIVISION
TELEPHONE: (919) 733-0692

Jonathan B. Howes, Secretary

April 23, 1993

MEMORANDUM

TO: Ellis Cayton
FROM: Dave Lown 
RE: Completeness Review Site Plan Application - Proposed
Buncombe County Solid Waste Management Facility

A completeness review of the geologic and hydrogeologic report for the Site Plan has been completed. The following comments, request, and questions on the geology and hydrogeology are addressed to CDM:

To evaluate the geologic and hydrogeology suitability of the proposed site for a landfill, additional data are required.

1. Topography

A good topography map that includes the immediate region surrounding the site is needed. The Two-Mile Radius Map (Figure No. 3-1) is confusing. The eastern boundary lies along the join between 7.5-minute topographic sheets. The sheets match poorly.

Can the topographic base map used for Figure 4-3 be expanded to show Flat Creek and Lower Flat Creek, which are located just outside the eastern boundary of the proposed site?

A 5-foot contour interval is sufficient for this map. Please give the contour interval on all contour maps.

2. Site Geology

- a. Please review relevant literature on the regional and local geology to ascertain the types of geologic features that might be expected at the proposed site. Consider, for example, should faulting be expected? Are there any lithologic units or lithology contrasts that may influence the flow of groundwater?

Provide a discussion of the expected geologic features, the possible effect on ground-water flow and an annotated bibliography of the literature reviewed.

- b. Is there a map of the outcrops in this area? Figure 7-5 shows Potential Rock Fall Areas; do these areas contain outcrops?

Are there outcrops in the beds of the French Broad River, Blevin Branch, Panther Branch or Flat Creek?

- c. The geology of the site is not homogeneous and isotropic. What are the rock units underlying the site and what are the map patterns? For example, an outcrop of marble is reported (page 4-3, Par. 2); what is the location of this outcrop and can the map pattern of this unit be determined? Also, what is the mappable extent of the Flat Creek Serpentine on the proposed site?

Outcrop maps should be at a scale that is easily examined and interpreted. (1" = 200' might be appropriate.)

- d. Are there sufficient outcrops in the area to prepare a fracture - trace analysis and Rose Diagram?

3. Cross-sections

- a. No information on bedrock lithologies is shown on the cross-sections as required by Section .0504 (c)(i)(G). What are the bedrock lithologies?

- b. The units shown on the cross-sections (overburden soils, partially weathered rock, and bedrock) are extremely general. Can these units be further subdivided and stratigraphically correlated?

4. Boring Logs

Section .0504 (c)(i)(D) requires that the logs provide "geologic considerations." Are all the soils residual soils formed in place or is there evidence that soils were deposited by fluvial, alluvial, or colluvial processes?

The terms "partially weathered rock" and "rock fragments" are used extensively on the logs. What is the mineral composition or lithologic determination of this material? Please show this information on the logs.

5. Potentiometric Map

Only 6 groundwater elevations were determined to construct the Potentiometric Contour Map (Figure No. 4-5) for a site of over 550 acres.

More groundwater elevations are needed. The exact number of borings necessary to produce this map is not specified, but the Section recommended a minimum of one boring per ten acres.

Information is needed on the flow of groundwater in all directions; however, it is particularly important to determine the flow direction to the north and east of the proposed site. Data are necessary to determine the relationship of the disposal unit to groundwater receptors especially drinking-water wells in those directions.

6. The Law Environmental, Inc. Report

Figures 2 and 3 were omitted from the Law report in Appendix 4-A. Please provide us with copies of these missing illustrations.



State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604

James B. Hunt, Jr., Governor

SOLID WASTE MANAGEMENT DIVISION
TELEPHONE: (919) 733-0692

Jonathan R. Howes, Secretary

April 15, 1993

MEMORANDUM

TO: Ellis Cayton
FROM: Dave Lown
RE: Completeness Review Site Plan Application - Proposed
Buncombe County Solid Waste Management Facility

A completeness review of the geologic and hydrogeologic report for the Site Plan has been completed. A cursory review of the engineering portions of the Site Plan was also done. The following comments address the geology and hydrogeology. Brief comments on other portions of the application are included at the end of this memo.

The following comments, requests, and questions are addressed to CDM:

To evaluate the geologic and hydrogeology suitability of the proposed site for a landfill, additional data are required.

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6. The Law Environmental, Inc. Report

Figures 2 and 3 were omitted from the Law report in Appendix 4-A. Please provide us with copies of these missing illustrations.

Comments on other portions of the application are listed below:

1. One-quarter-mile radius aerial photograph

- a. The airphoto does not have a scale or north arrow.
- b. Land use is not labeled on the air photo.
- c. Public or private utilities are not shown.
- d. Locations of wells are not shown.

2. Two-mile radius map

All required information appears to be shown on the map.

3. According to section .0503 (2)(f)(ii), a 500-foot minimum buffer is to be between private dwellings and wells and the disposal area. On the conceptual design plan (Figure 5-1) there is not a 500-foot buffer between some of the residences to the north and to the east and the disposal area. The locations of wells are not given, so this criteria cannot be assessed.
4. On the Conceptual Design Plan (Figure 5-1) there is no sedimentation control indicated for the borrow area on the western half of the site.