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2006

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David Garrett, PG, PE
 Engineering and Geology



May 22, 2006

Ms. Toni Wyche, E.I.
 NC DENR Division of Waste Management
 Solid Waste Section
 401 Oberlin Road
 Raleigh, North Carolina, 27611

**RE: Construction Quality Assurance Report
 WCA Brownfield Road C&D Landfill Cell B
 Raleigh (Wake County), North Carolina
 Solid Waste Permit No. 92-31**

Dear Ms. Wyche:

On behalf of WCA, I am pleased to present this construction quality assurance (CQA) report pertaining to the referenced landfill construction. Cell B is located in Phase 1, within a previously approved footprint (see the Figure following this text). This report is based in part on first-hand inspection of subgrade conditions, my knowledge of site conditions described in the original permit documents, and construction "as-built" drawings prepared based on a field survey by Anthony DiBona, RLS. The construction is now substantially complete per the approved plans. Field conditions appear consistent with the mapping within the cell (see attached field survey map).

The subgrade inspection was made per North Carolina Solid Waste regulations, 15A NCAC 13B .0500 and/or subsequent regulatory protocols. Said inspection requires that the owner's geologist or engineer examine the cell excavation and note any pertinent geologic features exposed during the construction process. The Owner shall notify the NC DENR Solid Waste Section Hydrogeologist of these findings prior to placement of any waste material. In recent experience, a certification has been required stating that the subgrade soils and other conditions are consistent with the approved plans, or noting any differences. This letter completes said required notification and certification.

Subgrade soils consist of clayey and silty fine to medium sand, in general accordance with the findings of earlier test boring investigations performed by others for the permit application. There were scattered pockets of soil containing small rock fragments (angular, gravel-size quartz fragments); these were considered minor and not deleterious. The subgrade surface was generally dry with no cracking observed, although on the date of my inspection, some minor ponding of surface water was noted at the lowest elevations, caused by the accumulation of rain water in the cell (there is no outlet at these elevations). I have advised WCA that this water must be removed prior to waste placement, in accordance with NC DENR Division of Solid Waste regulations.

During construction, a small body of rock was encountered at depths corresponding to 20 feet above the permitted subgrade in the southeast corner of Cell B, which was brought to the immediate attention of NC DENR Solid Waste officials. The rock consisted of variably weathered granite, which could not be ripped by a D-9 pulling a single-tooth ripper. The rock was unanticipated based on earlier permit documents prepared by others. The rock was removed by blasting to subgrade minus four feet (minimum), then the grade was brought to the permitted subgrade elevations with compacted on-site soil. The work was conducted per a blasting plan prepared by me and approved in advance by NC DENR Solid Waste officials. Documentation of the blasting has already been submitted to the NC DENR Solid Waste Section.

None of the drill holes for the blasting described above encountered water. The blasting was carefully conducted with the objective of limiting subgrade damage. Monitoring of ground vibrations at three existing monitoring wells was performed. No wet soils requiring stabilization or undercutting were encountered. The conditions encountered are not anticipated to affect the ground water monitoring system, e.g., no obvious veins, dikes or distinct linear features were visible in the Cell B subgrade. Further evaluation of the rock body is anticipated for the future construction of Cell C. Long-term observation of water quality and quantity will be conducted during the routine monitoring program, but no changes in ground water monitoring program are presently warranted.

Overall, the conditions exposed in the subgrade were within expectations based on the earlier investigations. I recommend no modifications to the Ground Water Monitoring Plan or Operations Plan. Based on my inspection and the mapping, I conclude that Cell B has been constructed in accordance with the approved plans. No further subgrade evaluations are warranted, and I recommend that Cell B be approved for operations.

I look forward to meeting with representatives of the NC DENR Solid Waste Section, if needed, to review the work. Please contact me if I can provide any additional data.

Sincerely,

G. David Garrett, P.G., P.E.
Consulting Engineer



5/22/2006

- cc: Mr. Wilbert Carter – WCA Facility Manager
- Mr. Vernon Smith – WCA Regional Manager
- Ms. Ellen Lorscheider – NC DENR Solid Waste Section
- ec: Ms. Danielle Forget Shield, P.E. – WCA Director of Engineering
- Mr. Ed Mussler, P.E. – NC DENR Solid Waste Section

Attachment: Field Survey, by Anthony DiBona, RLS

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 23 MAY 06 BY TWYCHIE
92-31 PTO V3 ATTACH. 3 DOC. 17

SCALE

1" = 100'

SYMBOLS

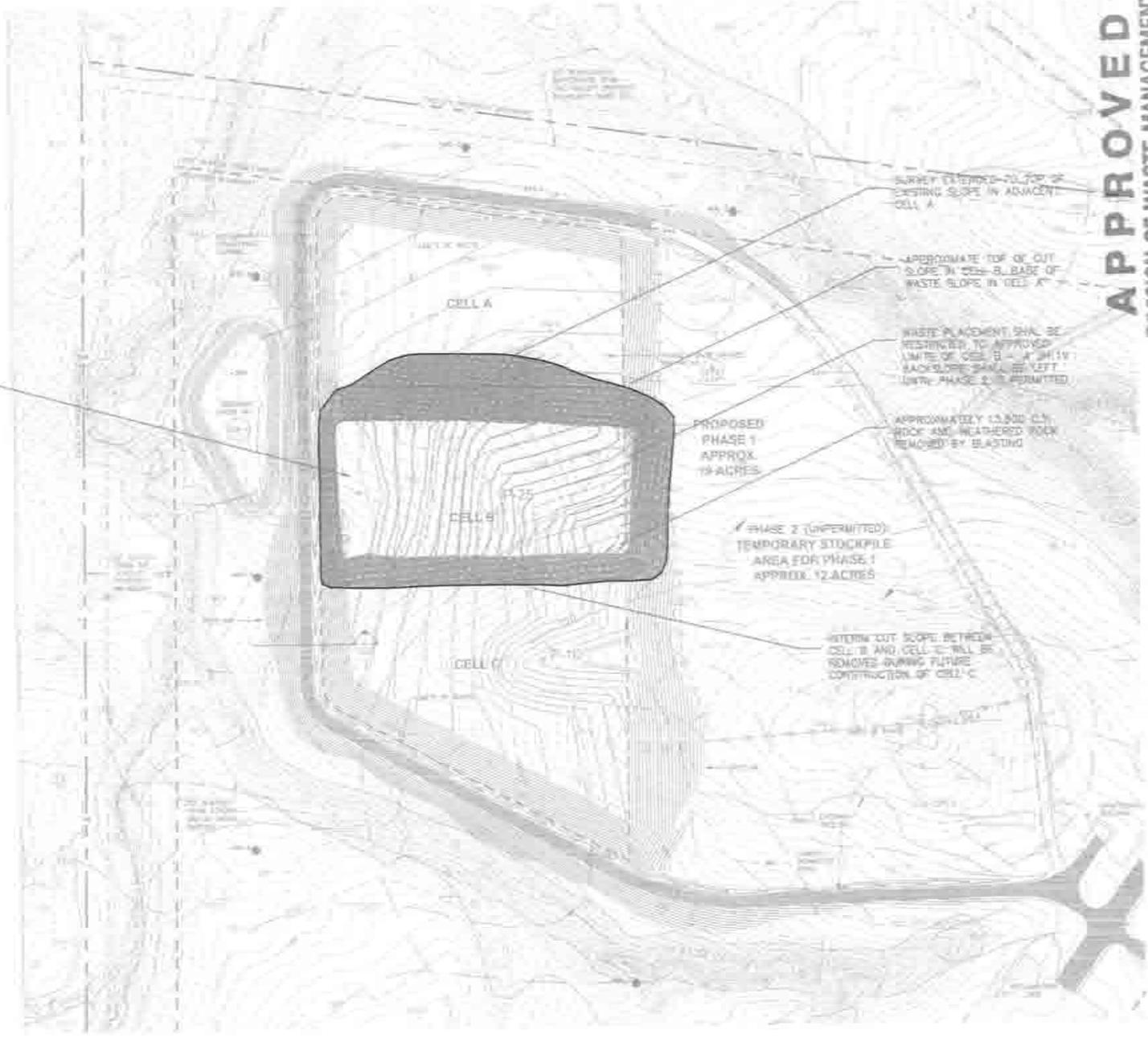
STANDING WATER REPRESENTS COLLECTED RAIN WATER, WHICH SHALL BE PUMPED PRIOR TO WASTE PLACEMENT

TOPOGRAPHIC CONTOURS FOR CELL B SURVEYED ON OR ABOUT MARCH 16, 2006 BY ANTHONY S. DRONKA, RLS.

SUPERPOSITION OF CELL B CONTOURS ON PROPOSED GRADES PERFORMED BY DAVID GARRETT, PE. ALIGNMENT WAS FIELD INSPECTED AND IS CONSIDERED REPRESENTATIVE OF AS-BUILT CONDITIONS UPON COMPLETION OF CELL B.

THE CONTOUR INTERVAL WITHIN CELL B IS ONE FOOT; ELSEWHERE, THE CONTOUR INTERVAL IS TWO FEET.

ORIGINAL PERMIT DRAWINGS WERE PREPARED ON DECEMBER 2001 BY JOYCE ENGINEERING.



APPROVED
 DIVISION OF WASTE MANAGEMENT
 SOLID WASTE SECTION

DATE 23 MAY 06 BY TWYCHE
 12-31 PTO J.B. ATTACH. 3 DEC. 18











Correspondence

Subject: Re: WCA Landfill
From: jcoughlin@co.wake.nc.us
Date: Wed, 12 Apr 2006 09:10:49 -0400
To: Ed Mussler <Ed.Mussler@ncmail.net>
CC: david@davidgarrettpe.com, wcarter@wcamerica.com

Ed - I was informed by Johnny Beal w/ Wake County Solid Waste that this project was mine as regards Erosion and Sedimentation Control shortly after my voice mail message to you. I therefore set up an appointment to meet w/ the compliance engineer for Waste Corporation America or WCA (Mr. David Garrett, P.G., P.E.) and the Site Superintendent for the Grading Contractor (Mr. Craig L. Bean of Morgan Corporation out of Charlotte, N.C.), on Friday March 31st. The Landfill Manager for WCA (Mr. Wilbert Carter) was not able to attend the site meeting. I am pleased to report that this site is in compliance with Wake County's Erosion and Sedimentation Control Ordinance as well as their Approved Erosion and Sedimentation Control Plan. A riser was omitted from the newly constructed Custom Sediment Basin that had been installed, but this was rectified early Monday April 3rd. Given the rain which fell shortly after installation of the riser, I was unable to see it in place. Since then I have been out of Town. I hope to see it in the field either tomorrow. or sometime next week (I am playing catch up on office work today).

Thank you for your response to my phone call. I will go on record as saying that I wish that more of my jobsites were being run by as capable a group of people. I look forward to meeting Mr. Carter in the near future, and working with him, David Garrett and Craig Bean as time goes by. - Mike

Mike Coughlin, CFM, CPESC,
Environmental Engineer/Consultant
Wake County Environmental Services
PO Box 550, 6th Floor WCOB
Raleigh, NC 27602
Phone (919) 856-7548
Fax (919) 856-7407

Ed Mussler

<Ed.Mussler@ncmai
l.net>

To: jcoughlin@co.wake.nc.us

cc:

Subject: WCA Landfill

04/11/2006 10:53

AM

Mike,
you called me on March 27 asking about the WCA Brownfield Road Landfill. I

don't know if you are ok, let me know if you have further questions. Basically, since they are disturbing land and constructing they need to get the appropriate Sedimentation and Erosion Control Permit from the appropriate authority. You don't need to do anything for Solid Waste. We get our copy from the owner.

Hoep this clears things up

Regards

Ed

--

Sig for emailEd Mussler, P.E., Permitting Branch Supervisor

Solid Waste Section

Division of Waste Management

1646 Mail Service Center

Raleigh, NC 27699-1646

401 Oberlin Road, Suite 150, 27605

tel: 919.508.8495, fax 919.733.4810

ed.mussler@ncmail.net

<http://wastenotnc.org>

Subject: Permit #92-31

From: "David Garrett, P.G., P.E." <david_garrett_pg@mindspring.com>

Date: Mon, 27 Feb 2006 14:08:43 -0500

To: toni.wyche@ncmail.net, Ed Mussler <Ed.Mussler@ncmail.net>, ellen.lorscheider@ncmail.net

Per our conversation this morning, relative to the captioned CDLF in Wake County, I will be certifying the construction for Cell "B" within the approved 5-year footprint on behalf of WCA. This work will include a hydrogeological reconnaissance (which I will coordinate with Ellen Lorscheider) and preparation of "as-builts" for the cell with input from a licensed surveyor. We will implement pertinent stages of the approved Sedimentation and Erosion Control plan, delegated to Wake County for permitting (I also will coordinate with their inspections department). All necessary monitoring wells are in and have been sampled. At present, the site operator is negotiating with loggers and contractors. I will inform you of a pre-construction meeting schedule once it is set. I look forward to meeting you in person and working with you. Please call my cell phone (number listed below) if you have any questions.
Cordially yours, David

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"When you can think of yesterday without regrets and tomorrow without fear, you're on the pathway to happiness." -- Anonymous

David Garrett, P.G., P.E.
Mobile Tel. 919-418-4375