



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

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

March 29, 2011

Stephen J. Cowie, P.E.
Joyce Engineering, Inc.
2211 West Meadowview Road, Suite 101
Greensboro, NC 27407

RE: Permit Amendment Application – by Joyce Engineering
Wilkes County MSWLF at Roaring River – Phase – IV- Vertical Expansion
Volume 3 Hydrogeology, Section VII – WQ Monitoring Plan – January 2011
Volume 2, Section V- Operations Plan - Env. Monitoring – January 2011
Volume 1, Section II – Facility Plan Drawings – January 2011
Additional Information Request
Permit No. 97-04
Document No. 13408

Dear Mr. Kerly:

The above referenced Permit Amendment Application for the vertical expansion of Phase IV, Wilkes County MSWLF is being reviewed by Mr. Allen Gaither, P.E. of the Solid Waste Section (SWS) pertaining to engineering criteria. I am reviewing the referenced Water Quality Monitoring Plan located in Volume 3 (January 2011), the Landfill Gas Monitoring Plan located in Volume 2 (January 2011) - included in the Operations Plan, and specific site drawings associated with the Facility Plan located in Volume 1 (January 2011). There are several items the Water Quality Monitoring Plan and the Landfill Gas Monitoring Plan that require clarification and/or revision before the review of this portion of the application can be completed. Please respond to the following questions and comments:

Phase IV Expansion – Volume 3 – Hydrogeology – January 2011

-Section VII – Water Quality Monitoring Plan

-Section 2.0 – Groundwater Monitoring

-Section 3.0 – Installation and Maintenance of the GW Monitoring Network

-Section 3.1 – Groundwater Sampling Methodology

-Section 3.4 – Well Abandonment

-Drawing No. WQMP-01 – Groundwater Surface Contour Map – June 22, 2010

Phase IV Expansion – Volume 1, Section II – Facility Plan

-Section 2.0 – Facility Drawings

-Drawing No. FP-01 – Existing Conditions

-Drawing No. FP-02 – Site Development Plan

-Drawing No. FP-04 – Site Development Plan: Final Grading Plan

Volume 3, Section VII, Water Quality Monitoring Plan, Section 2, Page 3, first paragraph states in-part: “*Monitoring well MW-13 is the upgradient monitoring well for this facility. This well replaced former background monitoring well MW-2R which was abandoned on September 13, 2010*”.

Solid Waste Section’s Response: Existing groundwater monitoring well MW-13 could not be located on the submitted drawing (Drawing no. WQMP-01). The well is most likely beyond the left margin of the drawing. Also, this drawing depicts the location of groundwater monitoring well MW-2R and according to the drawing legend, this well appears active. Drawings included in the Facility Plan (i.e. FP-01, FP-02, FP-04) depict groundwater monitoring wells, MW-2 and MW-2R as abandoned. Also, the location of groundwater monitoring well, MW-13 depicted on the referenced facility drawings (FP-01, FP-02, & FP-04) appears to be an upgradient/side-gradient monitoring well in a different watershed. An additional upgradient groundwater monitoring well is most likely required instead of using MW-13, possibly between abandoned groundwater monitoring well, MW-2R and the waste boundary of existing Phase 3. Provide a possible location of an additional upgradient groundwater monitoring well, by revising Drawing No. WQMP-01. Also, if possible depict the location of existing groundwater monitoring well, MW-13 on the drawing.

Drawing No.’s FP-01, FP-02, and FP-03 included in the Facility Plan also depict the location of groundwater monitoring wells, MW-14, MW-15R, and MW-16 at the western portion of the facility. Explain the role these groundwater monitoring wells have at the facility (i.e. monitoring closed landfills, etc.?).

In addition to revising the referenced drawing WQMP-01, please also revise the narrative portions of the Water Quality Monitoring Plan accordingly.

Volume 3, Section VII, Water Quality Monitoring Plan, Page 3, third sentence, under Section 3.0 states: “*Further guidance is provided in the Draft North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities; Solid Waste Section, Division of Solid Waste Management; Department of Environment, Health and Natural Resources (March 1995).*”

Solid Waste Section’s Response: This guidance is no longer in use. Please omit this reference.

Volume 3, Section VII, Water Quality Monitoring Plan, Page 4, first paragraph, under Section 3.1 states in-part: “*Groundwater samples will be collected in accordance with Solid Waste Management Rules 15A NCAC 13B .1632 and guidance provided in the Draft North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities; Solid Waste Section, Division of Solid Waste Management; Department of Environment, Health and Natural Resources (March 1995).*”

Solid Waste Section’s Response: As stated above, this guidance is no longer in use. Please omit this reference and revise the Water Quality Monitoring Plan with recent Solid Waste Section guidelines and memorandums and include printouts of these into the Water Quality Monitoring Plan. These guidelines and memorandums are located at the Solid Waste Section’s web site, under the subcategory “Environmental Monitoring”. The web link address to this portion of the Solid Waste Section’s main page is:
<http://portal.ncdenr.org/web/wm/sw/envmonitoring>

Pertinent guidelines / memorandums to include in the Water Quality Monitoring Plan are:

- “Groundwater, Surface Water, and Soil Sampling for Landfills”
- “Leachate Sampling and Analysis”
- “Solid Waste Environmental Monitoring Data Form”
- “Electronic Data Deliverable (EDD) Template”
- “October 2007 Memo”
- “October 2006 Memo”
- “Addendum to the October 2006 Memo”

Volume 3, Section VII, Water Quality Monitoring Plan, Page 8, Section 3.4 states: “*Any monitoring wells at the site which need to be abandoned due to damage, construction activities, or approved changes in the monitoring network will be properly abandoned in accordance with the procedures for permanent abandonment, as described in 15A NCAC 2C Rule .0113(a)(2) and the NC Water Quality Monitoring Guidance Document for Solid Waste Facilities. No wells will be abandoned without prior approval from the SWS*”.

Solid Waste Section’s Response: This guidance is no longer in use. Please omit this reference. The North Carolina Well Construction Standards (2C Rules) were revised September 2009. Revise reference rule 15A NCAC 2C Rule .0113(a)(2) to read 15A NCAC 2C Rule .0113(d). Also, add a statement to this section to read: “any wells to be abandoned shall have prior approval from the SWS and also be certified by a licensed geologist”.

*Volume 2 – PTC Application (Joyce Engineering) – January 2011
Operation Plan
Section 6 – Environmental Monitoring Programs
6.2 through 6.2.3 – Landfill Gas*

Solid Waste Section’s Response: The Section 6.2 - “Landfill Gas” of the Operations Plan (January 2011) is similar to the Landfill Gas Criteria stated Section 6.1 of the May 2004 Operations Plan. Some modifications to Section 6.2 of the Operations Plan are necessary. Please revise / address the following:

1. Please confirm / provide the following construction information for each of the existing landfill gas monitoring wells and in table format.
 - Construction record for each well if available.
 - Total depth for each well.
 - Well screen interval in feet for each well.
 - Diameter for each well.
 - Type of and condition of well identification tag (i.e. weather proof, legible, etc.) for each well.
 - Is the upper portion of each gas well grouted?
 - Does the well have a water /rust proof cap?
 - Does the well have a stop-cock valve?
 - Name/number for each well.

2. Provide a narrative statement pertaining to the total number of landfill gas monitoring wells, the names of the landfill gas monitoring wells, associated with the MSWLF and other portions of the facility (i.e. closed cells, etc) and facility structures sampled. Also, provide a drawing/map depicting the surveyed location of the existing landfill gas monitoring wells and possible location of additional new landfill gas monitoring wells. Further discussion pertaining to landfill gas monitoring well locations, construction criteria, sampling, etc. maybe necessary once this information is received. Also, revise Section 6.2 of the Operations Plan to include a copy of the Solid Waste Section’s “Landfill Gas Monitoring Guidance Document” – revised November 2010. These guidelines are located at the Solid Section’s web site: <http://portal.ncdenr.org/web/wm/sw/envmonitoring> Once a Landfill Gas Monitoring Plan for this facility is finalized it is to be signed by a professional engineer or licensed geologist.

If you have any questions or wish to schedule a meeting to discuss the items referenced in this letter, please call me at 919-508-8524.

Sincerely,



Brian Wootton
Hydrogeologist
Solid Waste Section

cc: Jeremy J. Kerly, P.G.
Kent Brandon
Ed Mussler, P.E.
Allen Gaither, P.E.

Joyce Engineering Inc.
Wilkes Co. Dept of Solid Waste
Solid Waste Section
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