



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

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John Moynihan, Facilities Director  
Wayland Wastewater District Commission  
41 Cochituate Road  
Wayland, MA 01778

June 15, 2012

RE: Request for Additional Information  
BRP WP 83/Hydrogeologic Evaluation Report  
Transmittal Number X250635

Dear Mr. Moynihan:

The Northeast Regional Office of MassDEP has received the hydrogeologic evaluation report and application submitted on your behalf by Tighe & Bond, Incorporated (T&B). The report is entitled "Hydrogeologic Report" and is dated March 2012. Upon review of this document, MassDEP has determined that additional information is needed before a decision can be made regarding the suitability of the Wayland Town Office Ball Field as a future groundwater discharge location. Processing of your application will continue once the following comments have been addressed and/or the requested information has been received by MassDEP:

1. The number of witnessed test pits excavated within the footprint of the proposed soil absorption system (SAS) is insufficient to fully characterize the upper soil profile. MassDEP typically requires a minimum of two test pits within each primary and/or reserve disposal area. Only one witnessed test pit, however, has been excavated in the proposed area to date. Since the proposed reserve area lies within the footprint of the primary area, MassDEP requires a minimum of two additional test pits be excavated and the soils characterized by a certified soil evaluator.
2. MassDEP requires that, for all new construction, infiltration testing be performed in the most restrictive soil horizon that will be receiving discharged sanitary effluent. Typically for discharges  $\leq 20,000$  gallons per day (gpd), this requirement is met by percolation testing of the soil horizon. Alternative methods for evaluating infiltration include; a double ring infiltration test, a permeameter test, or a basin loading test.

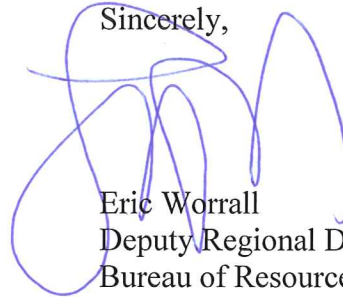
3. The SAS proposed by T&B consists of a 200' by 100' drip dispersal field. The field was sized using a loading rate of 0.85 gpd/ft<sup>2</sup>. The maximum loading rate permitted by MassDEP for drip dispersal is 0.74 gpd/ft<sup>2</sup>. T&B shall revise its report to reflect the use of the correct drip dispersal loading rate, or propose the use of a different infiltration technology and support the final loading rate used to size the SAS.
4. T&B's estimate of groundwater mounding at the proposed SAS location is based on an anticipated design flow of 17,000 gpd. MassDEP policy allows mounding potential to be evaluated at 80% of design flow. The SAS, however, must still be sized for 100% of design flow.
5. T&B's mounding analysis was performed using the Hantush Method for estimating mound height development. MassDEP concurs that Hantush is an acceptable method for groundwater discharges of this magnitude and in this type of setting. Furthermore, MassDEP finds that the aquifer input parameters selected by T&B appear reasonable. MassDEP is, however, unfamiliar with the final step of T&B's analysis wherein the initial value of saturated thickness is subtracted from calculated mound height. Prior to this step MassDEP's analysis corresponded well with the T&B analysis. Please provide MassDEP with justification for this approach.
6. T&B shall construct a post-disposal groundwater contour plan showing the effects of groundwater mounding on estimated seasonal high groundwater and include it in the hydrogeologic report.
7. MassDEP requires an evaluation of potential groundwater mounding impacts to the basements and septic systems of properties that abut the proposed discharge location.
8. The submitted hydrogeologic report shall be expanded to include a groundwater monitoring plan capable of identifying and assessing any impacts to groundwater flow and quality resulting from a discharge of effluent at the proposed location. A minimum of three monitoring wells (one upgradient and two downgradient) are required. Monitoring wells installed as part of the site investigation may be utilized provided they are appropriately located and constructed in accordance with MassDEP's *Standard References for Monitoring Wells*. Additional well locations may be needed to monitor impacts to abutting properties and downgradient sensitive receptors.
9. A conclusion section must be added to the submitted report. This section should summarize the findings of the hydrogeologic investigation and discuss the suitability of the site for the disposal of treated sanitary effluent at the proposed volume and rate.
10. A surveyed site plan, prepared and stamped by a Massachusetts Professional Engineer, must accompany the hydrogeologic report. At a minimum the plan must identify and document the following;
  - The locations/footprints of the primary and reserve disposal areas,

- The locations of all test pits and percolation tests conducted as part of the hydrogeological investigation,
- The locations and top-of-casing/top-of-PVC elevations of all borings/monitoring wells installed as part of the investigation, and
- The proposed locations of monitoring wells to be installed as part of the approved groundwater monitoring plan.

The surveyed site plan, along with an approved maximum daily discharge volume will be referenced in MassDEP's Site Approval Letter. Any SAS installed at the site shall be constructed within the footprint indicated on the plan and the discharge limited to that contained within the site approval letter.

The information listed above must be submitted to MassDEP's Northeast Regional Office on or before September 15, 2012. If you have questions or comments regarding the above, please contact Criss Stephens of my staff at 978-694-3241.

Sincerely,



Eric Worrall  
Deputy Regional Director  
Bureau of Resource Protection

EW/HS/hs

Cc: Fred Turkington/Town of Wayland  
Ian Catlow/Tighe & Bond  
Karla King/Tighe & Bond  
Marybeth Chubb/MassDEP/Boston  
Greg Tomaszewski/MassDEP/NERO