



MARYLAND DEPARTMENT OF THE ENVIRONMENT

Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD 21230-1719

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1-800-633-6101, ext. 3442

Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

October 25, 2012

Mr. James Ross
Chief Executive Officer
Chester River Hospital Center
100 Brown Street
Chestertown MD 21620

RE: REQUEST FOR CLARIFICATIONS

Case No. 1987-2534-KE
Chester River Hospital Center
100 Brown Street, Chestertown
Kent County, Maryland
Facility I.D. No. 3168

Dear Mr. Ross:

The Oil Control Program completed a preliminary review of the *CRHC – Work Plan for Proposed Well Abandonment and Replacement*, received September 26, 2012, and the *Post Corrective Action Quarterly Monitoring Report*, received October 1, 2012. Several deficiencies were noted in the *Monitoring Report* that must be corrected and resubmitted prior to the Department being able to properly review the well abandonment request. The deficiencies within the *Monitoring Report* are highlighted below. The Department also presents comments relating to the well abandonment request, which must also be addressed prior to the final review of the request. Please note that if post system shutdown conditions are not met as instructed, the Department may require the treatment system to be restarted.

Post Corrective Action Quarterly Monitoring Report

1. The data within this report was not presented in the tabulated time series manner consistent with the *Maryland Environmental Assessment Technology (MEAT) for Leaking Underground Storage Tanks* guidance document (http://bit.ly/MDEOCP_MEAT) and required by the Department's *September 5, 2012 Post Remedial Monitoring Modifications* letter (Item 6) (copy enclosed). Time series sampling data for the following wells was missing from data Table 1: MW-11, MW-12, MW-17, MW-18, MW-21, MW-23, MW-25, MW-28, MW-29, MW-31, MW-32, and MW-45.

It is critical that the Department be able to complete a timely and efficient review of data to continuously evaluate subsurface conditions at this high risk site during the trial shutdown monitoring period. The manner in which the data was presented does not allow for an efficient review of site conditions or trends in the data. The *Monitoring Report* must be resubmitted with the following requirements met:

- a. All groundwater gauging and liquid phase hydrocarbons (LPH) recovery data must be presented in a time series format as referenced in *Appendix I*, of the *MEAT* guidance document. This must be done for each well over the entire historic record of data.
 - b. All groundwater analytical results must be presented in a time series format as referenced in *Appendix H*, of the *MEAT* guidance document. This must be done for each well over the entire historic record of data.
2. Item 6 of the September 5, 2012 letter also required that the site maps include all current and previously abandoned wells. Revise and resubmit the maps to include the previously abandoned wells. Additionally, the dissolved phase concentration maps are overly busy and do not easily convey the concentration data for each well. As requested in Item 6 of the September 5, 2012 letter, limit the presented data to the following compounds: benzene, total BTEX, MTBE, TPH-DRO and TPH-GRO. You are also reminded to note LPH thicknesses on the maps.

Work Plan for Proposed Well Abandonment and Replacement

3. Continuous monitoring at this site is critical given the close proximity of the Town's municipal supply well field: Subsurface monitoring must not be interrupted; therefore, the Department requires the installation of replacement wells prior to abandonment of existing wells. Note that well abandonment may occur during the same mobilization once the replacement wells have been installed. Additionally, address the following:
- a. The map provided also locates MW-8 within the future construction foot print. However, the status of this well is not discussed. Indicate where the replacement well will be installed.
 - b. Recovery well RW-1B has consistently presented with LPH sheen and must be replaced. The Department suggests installing a monitoring well in the grassy area adjacent to Roberts Drive.

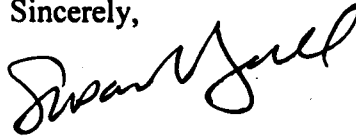
In addition to the above comments, CRHC is reminded of Items 2, 3, and 4 from the September 5, 2012 letter. Those requirements were:

- **Beginning October 1, 2012**, the entire network of 46 monitoring points must be gauged monthly for the presence of LPH. Following gauging, samples must be collected monthly from the following wells: MW-15, MW-16, MW-19, MW-20, MW-24, MW-33, MW-34, and MW-35.
- All samples collected (both quarterly and monthly) must be analyzed for full-suite volatile organic compounds (VOCs), including fuel oxygenates, using EPA Method 8260 and for total petroleum hydrocarbons/diesel and gasoline- range organics (TPH-DRO and TPH-GRO) using EPA Method 8015B.
- Submit **monthly** post-remedial progress reports that include gauging summary tables and the results of the targeted supplemental well samples collected.

Mr. James Ross
Case No. 1987-2534-KE
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If you have any questions, please contact me at 410-537-3499 (email: sbull@mde.state.md.us).

Sincerely,



Susan R. Bull, Eastern Region Section Head
Remediation and State-Lead Division
Oil Control Program

SRB/nln

Enclosure

cc: Mayor Margo G. Bailey (Town of Chestertown)
Mr. Bill Ingersoll (Manager-Town of Chestertown)
Mr. John Beskid (Kent County Health Dept.)
Mr. Andrew Bullen (Earth Data, Inc.)
Mr. John Grace (MDE-Water Supply Program)
Mr. Saeid Kasraei (MDE-Water Supply Program)
Mr. Andrew B. Miller
Mr. Christopher H. Ralston
Mr. Horacio Tablada



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Enclosure

September 5, 2012

Mr. James Ross
Chief Executive Officer
Chester River Hospital Center
100 Brown Street
Chestertown MD 21620

RE: POST-REMEDIAL MONITORING MODIFICATIONS

Case No. 1987-2534-KE
Chester River Hospital Center
100 Brown Street, Chestertown
Kent County, Maryland
Facility I.D. No. 3168

Dear Mr. Ross:

The Oil Control Program recently completed a review of the *Pre-Shutdown Sampling Report - July 2012*, the *Monitoring Well Gauging Data - July 27, 2012*, and the *Select Monitoring Well Sampling Results - August 3, 2012*. On May 8, 2012, the Department approved a trial shut-down of the on-site remediation system. Per the approved *Post Remedial Monitoring Plan*, the entire monitoring well network (a total of 46 available points) was gauged May 31, 2012. Measurable liquid phase hydrocarbons (LPH) were detected in six points ranging from 0.01 to 0.23 foot in thickness and "sheen" was noted within ten additional wells. Pre-shutdown samples were collected June 5 and 6, 2012 from 40 monitoring points. Samples collected revealed the presence of benzene up to 1.1 parts per billion (ppb); naphthalene up to 210 ppb; and total petroleum hydrocarbons - diesel range organics (TPH-DRO) up to 130 parts per million (ppm). A total of nine monitoring points, located between the most down-gradient detection of TPH-DRO (0.14 ppm) and the Chestertown well field, were non-detect for petroleum constituents. On July 12, 2012, the system entered trial shut-down. Although the remedial pumps have been removed from the wells, the pumps and the system remain on-site in the event system restart is required by the Department.

Supplemental gauging events were conducted July 13, July 16, and July 27, 2012. These events confirmed that groundwater flow is southwesterly, toward the Chester River. These events also confirmed that the area water table returned to static, non-pumping conditions by July 16, 2012. During the July 27, 2012 gauging event, groundwater samples were collected from two monitoring wells (MW-20 and MW-34). The only constituent of concern detected was TPH-DRO at 1.9 ppm within MW-20. The Department understands that the next network gauging event is scheduled for the end of August 2012, and the third quarter 2012 sampling event is scheduled for the first week in September 2012.

Based on our review, the Department has the following additional post-remedial monitoring requirements:

- 1) If measurable amounts of LPH are detected within any monitoring point at a thickness greater than 0.01 foot (e.g., "sheen" or "film"), the Department requires the following:
 - a. Notify the Department within two hours;
 - b. Immediately complete corrective action in the form of LPH recovery via absorbent wicks or other appropriate method(s);
 - c. Complete LPH recovery to the maximum extent practicable during the gauging event; and
 - d. Re-gauge the well following recovery.

Absorbent wicks are not to be left in monitoring points. The Department reserves the right to require more aggressive recovery efforts based on either the amount of LPH rebound following corrective action or the initial amount of LPH detected.

- 2) **Beginning October 1, 2012**, the entire network of 46 monitoring points must be gauged monthly for the presence of LPH. Following gauging, samples must be collected monthly from the following wells: MW-15, MW-16, MW-19, MW-20, MW-24, MW-33, MW-34, and MW-35.
- 3) All samples collected must be analyzed for full-suite volatile organic compounds (VOCs), including fuel oxygenates, using EPA Method 8260 and for total petroleum hydrocarbons/diesel and gasoline-range organics (TPH-DRO and TPH-GRO) using EPA Method 8015B.
- 4) Submit **monthly** post-remedial progress reports that include gauging summary tables and the results of the targeted supplemental well samples collected.
- 5) Continue **quarterly (every three months)** sampling of all wells not exhibiting LPH thicknesses greater than 0.01 foot. Samples collected must be analyzed for full-suite VOCs, including fuel oxygenates, using EPA Method 8260 and for TPH-DRO and TPH-GRO using EPA Method 8015B.
- 6) Continue to submit **quarterly** reports detailing the results of the gauging and sampling events. At a minimum, the reports must include:
 - a. Discussion of supplemental sampling events and details on sampling procedures;
 - b. Data summary tables for most recent sampling event and description of analytical results in terms of media sampled;
 - c. Scaled site map denoting all current wells and previously abandoned wells, groundwater surface contour map, dissolved-phase concentration map (including benzene, total BTEX, MTBE, TPH-DRO and TPH-GRO concentrations), and LPH thickness map; and
 - d. Tabulated **time series** groundwater gauging, groundwater analytical results, and LPH recovery data in a format consistent with the *Maryland Environmental Assessment Technology for Leaking Underground Storage Tanks* guidance document.

- 7) Given the location of the subject property and municipal supply wells, a strict reporting schedule is required. Monitoring events must be completed as prescribed and the report must be submitted to the Oil Control Program **no later than 45 days after completion of sample collection.**
- 8) The Department concurs with the recommendation of your consultant that additional monitoring wells, down-gradient from MW-34, are necessary to fill in spatial gaps between MW-34 and MW-23. In addition, the Department understands that Hospital redevelopment activities are planned to commence during fall 2012, which will result in the loss of monitoring points adjacent to the hospital. **No later than September 30, 2012,** submit a *Work Plan* detailing proposed locations for supplemental monitoring well installations between MW-34 and MW-23; identification of wells that will be lost to redevelopment activities; and proposed locations for replacement monitoring wells to permit the continued monitoring of post-shutdown groundwater conditions.
- 9) **No later than September 30, 2012,** submit a clarification to the following statement from the *Pre-Shutdown Sampling Report - July 2012* (Pages 7 and 8), which cites: "Prior to the discovery of the fuel oil release at the CRHC in 1991, the Town of Chestertown operated their well No. 2, which is located at the intersection of Campus Avenue and Philosopher's Terrace..." The Department's records indicate that Town well No. 2 was located in the main well field off of Kent Street.

If you have any questions, please contact me at 410-537-3499 (email: sbull@mde.state.md.us).

Sincerely,



Susan R. Bull, Eastern Region Section Head
Remediation and State-Lead Division
Oil Control Program

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