

**PILOT POST-REMEDIAL MONITORING REQUEST
WORK PLAN
FEBRUARY 13, 2020
UPDATED JUNE 17, 2020**

A. PUMP AND TREAT SYSTEM SUSPENSION:

The Pump & Treat (P&T) System will be suspended during the pilot post-remedial monitoring period. All equipment will remain onsite and will be exercised as needed to ensure the system remains in working order.

- Brightfields anticipates initiating the remediation system shutdown process on July 6, 2020 with completion by July 10, 2020.
- Brightfields anticipates a system reactivation will take between five (5) to ten (10) days once a triggering event occurs or MDE requires the system be restarted.

B. MONITORING AND REPORTING DURING PILOT PHASE:

Upon commencement of the pilot pump and treat system shutdown, the Hospital will initiate the following monthly monitoring activities:

1. Gauging of all monitoring, recovery, and sentinel wells.
 2. Collect samples for Total Petroleum Hydrocarbons - Diesel Range Organics (TPH-DRO) analysis using EPA Method 8015B from the following targeted wells: MW-15, MW-16, MW-19, MW-20, MW-24, MW-33, MW-34, MW-35, MW-48, MW-49, MW-50, and MW-56.
 3. Submit monthly progress reports that include gauging summary tables and the results of the targeted well samples no later than forty-five (45) days after completion of sample collection.
- Brightfields anticipates initiating the gauging, monitoring, and reporting associated with the Pilot the week of July 13, 2020 in addition to the normal quarterly monitoring in accordance with the Consent Order.
 - Sampling the following wells for TPH-DRO – EPA Method 8015: MW-9, MW-10R, MW-11, MW-13, MW-14, MW-15, MW-16, MW-19, MW-20, MW-24, MW-33, MW-34, MW-35, MW-37, MW-48, MW-50, MW-51, MW-54, and MW-56. (Total of 19 wells)
 - Sampling of MW-9, MW-10R, MW-11, MW-13, MW-14, MW-20, MW-37, MW-41, MW-43, MW-45, MW-46, MW-47, MW-51, MW-53, and MW-54 for the presence of TPH DRO with Silica Gel Analysis. (Total of 15 wells)

MDE COMMENTS

- I. MDE's *System Shut-Down and Post-Remedial Monitoring Approval Letter* dated April 24, 2020 (Approval Letter) specifies that **all wells must be gauged prior to system shut-down, and all wells must be gauged daily until the water table returns to static pre-pumping levels.**
- II. A total of 12 monitoring wells were initially proposed for sampling monthly for TPH-DRO. MDE's Approval Letter concurred with the initial list and required 8 additional monitoring wells to be sampled monthly for TPH-DRO (20 total). MW-49 was left off the list in the Updated June 17 Work Plan. Ensure that **MW-49 is included on the list of monitoring wells that will be sampled monthly for TPH-DRO**, for a total of 20 monitoring wells, not 19.
- III. Silica gel sampling was not part of the initial proposed Work Plan, however it is included in the June 17 updates. MDE approves the use of silica gel cleanup as long as the monitoring wells samples are **analyzed for both TPH-DRO using EPA Method 8015 and the modified silica gel cleanup procedure**, in order to compare data.

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C. TWENTY-FOUR (24) MONTH MONITORING AND REPORTING:

The Hospital will continue the quarterly monitoring in accordance with the Consent Order and the Department's "Site Status Letter" dated December 20, 2016 with the exception of sampling recovery wells. This includes:

1. Monthly gauging of all monitoring, recovery, and sentinel wells.
 2. Quarterly sampling of all monitoring and sentinel wells for the presence of TPH-DRO using EPA Method 8015B.
 3. Quarterly sampling of all monitoring and sentinel wells for the presence of Volatile Organic Compounds (VOCs), including oxygenates, using EPA Method 8260.
 4. Submit quarterly monitoring reports.
 5. Upon approval by the Department, the monthly testing and progress reports associated with the Pilot Phase will be discontinued.
- Monitoring/Reporting schedule for the Pilot includes July – quarterly, August/September – monthly, October – quarterly, November/December – monthly.
 - January 2021 – provide MDE with a summary report of observations and findings associated with the Pilot.
 - Sampling all monitoring, recovery, and sentinel wells for the presence of TPH-DRO via EPA Method 8015B and VOCs, including fuel oxygenates and naphthalene, using EPA Method 8260. (Total of 55 wells)
 - Sampling of MW-9, MW-10R, MW-11, MW-13, MW-14, MW-20, MW-37, MW-41, MW-43, MW-45, MW-46, MW-47, MW-51, MW-53, and MW-54 for the presence of TPH DRO with Silica Gel Analysis. (Total of 15 wells)

D. EVENTS THAT WILL TRIGGER REACTIVATION OF THE P&T SYSTEM

Events that will trigger the reactivation of the P&T system include the following:

1. Measurable thickness (>0.01') of liquid phase hydrocarbons (LPH) in any wells located south of Brown Street; or
2. Greater than 0.05' of LPH in any wells located north of Brown Street for three (3) consecutive gauging events. The presence of any measurable thickness (>0.01') of LPH in the monitoring wells north of Brown Street will require a follow-up gauging event within seven to ten (7-10) calendar days; or
3. If directed by the Department.

E. ACTIONS REQUIRED UPON THE DISCOVERY OF LPH

Actions required upon the discovery of measurable amounts of LPH (>0.01') include the following:

1. Notification to the Department within two (2) hours;
 2. Immediately complete corrective action in the form of LPH recovery via absorbent wicks or other appropriate method(s);
 3. Complete LPH recovery to the maximum extent practicable during the gauging event; and
 4. Re-gauge the well following recovery.
- Brightfields field staff will notify MDE within two (2) hours by calling 410.537.3442 or 1.866.633.4686.