



Maryland

Department of the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

March 15, 2022

Mr. Ben Wood
Project Manager
ExxonMobil Environmental Services
1900 East Linden Street
Linden, NJ 07036

RE: RECOVERY WELL CYCLING WORK PLAN APPROVAL
Case No. 2006-0303-BA
Former Exxon R/S No. 2-8077
14258 Jarrettsville Pike, Phoenix
Baltimore County, Maryland

Dear Mr. Wood:

The Maryland Department of the Environment's (MDE) Oil Control Program (OCP) completed a review of the *Recovery Well Conversion Report of Results and Cycling Work Plan*, dated December 14, 2021, and the *3rd quarter 2021 Groundwater Monitoring and Remedial Status Report*, dated November 15, 2021. The report includes results of five recovery well conversions to monitoring wells that were initiated in June 2021 and a work plan proposal to cycle (turn off/ on/ off/ on) the remaining 14 recovery wells over an approximate 7-month period.

A total of eight sequential recovery well shutdowns were completed over the period of 2010 through 2021 with no significant sustained rebound of dissolved-phase petroleum concentrations observed. The last sequential shutdown of recovery wells occurred in June 2021. Similar to previous shutdown procedures, five recovery wells (MW-16, MW-27, MW-54B, MW-82D, and MW181A) were shut down and monitored (gauged and sampled) monthly for three consecutive months. In addition, six monitoring wells (MW-7, MW-27B, MW-32, MW-38B, MW-82B, and MW-121) were gauged and sampled monthly for three consecutive months. Following monitoring well gauging and sampling, these wells reverted to a quarterly monitoring frequency, with the exception of MW-38B, which was reverted to a semi-annual sampling frequency. The rebound data collected demonstrated no adverse effects. In addition, it was observed that these wells diluted the overall concentrations of dissolved petroleum concentrations recovered from the groundwater remediation system.

Kleinfelder, on behalf of ExxonMobil, proposes to cycle the 14 remaining active recovery wells (MW-3, MW-16R, MW-38C, MW-45, MW-45R, MW-73C, MW-138D, MW-178C, MW-183, MW-187A, MW-187B, MW-187C, SVE-1, and SVE-3) to determine the affect of the remediation system on reducing the remaining dissolved-phase petroleum concentrations and if natural attenuation is a factor in the reduction. To evaluate these processes, a proposal was submitted to remove groundwater pumps, redevelop the wells, gauge and sample groundwater two weeks after

well development was performed, conduct monthly monitoring (gauge and sampling) for three months, and then turn the system back on. The system will then remain on for two weeks, followed by another shut-down event. At the end of the second shut off event, the pumps will be placed back in all 14 recovery wells and the system will be turned on and remain active.

Seven proximal monitoring wells (MW-7, MW-54C, MW-82D, MW-91C, MW-121, MW-152, and PW-3501) are proposed to be gauged and sampled monthly, in addition to each of the 14 recovery wells. Groundwater samples collected will be analyzed for benzene, toluene, ethylbenzene, xylenes, and fuel oxygenates including methyl tert-butyl ether (MTBE). Geochemical and microbial data will be collected at the end of the monitoring period from a select group of monitoring wells. In addition, Kleinfelder proposed to discontinue the periodic pumping events being performed at the potable well located at 3627A Southside Avenue, as per the approved MDE work plan dated November 20, 2020.

The OCP reviewed the December 14, 2021, proposal and requested additional details regarding sampling methods, sampling frequency and depths of each of the proposed recovery wells and proximity monitoring wells, and an updated figure showing surrounding properties that are currently under the monitoring program. Additional details of the proposed sampling plan were provided via email on March 2, 2022 (copy enclosed).

Based on the current land use, the available information reviewed for this case, including a review of the monitoring well network construction details, historical and current dissolved phase hydrocarbon concentrations, locations of remaining recovery wells, locations of monitoring wells relative to recovery wells, a comprehensive monitoring well network for continued monitoring during the remainder of remediation activities and post-remedial monitoring, and after conducting a risk-based analysis, MDE approves the proposal to cycle the remaining 14 recovery contingent upon the following comments and requirements:

1. Include the following additional monitoring wells for gauging and sampling during the system shutdown period and at the frequencies listed:
 - a. MW-109 – Quarterly (not currently being sampled);
 - b. MW-52 – Quarterly (currently sampled semi-annually);
 - c. MW-181B – Quarterly (currently sampled semi-annually);
 - d. MW-85 – Quarterly (currently sampled semi-annually);
 - e. MW-87 – Quarterly (currently sampled semi-annually);
 - f. MW-36, MW-36 C, and MW-36R – Quarterly (currently sampled semi-annually);
 - g. MW-180A and MW-180C – Quarterly (not currently being sampled);
 - h. MW-168 – Discrete HydraSleeve™ at the following depths below the top of casing – 67’, 75’, 87’, 115’, 148’, and 235’ – Quarterly (currently sampled semi-annually);
 - i. MW-47C – Discrete HydraSleeve™ at the following depths below the top of casing – 126’, 138.5’, 190’, 212’, and 287’ – Quarterly (currently sampled semi-annually);
 - j. MW-171 and MW-171 C – Quarterly (currently sampled semi-annually); and
 - k. MW-176C – Quarterly (currently sampled semi-annually).

2. Include the following private supply well sampling frequencies:
 - a. Increase sampling frequency from semi-annual to quarterly for 3504 Hampshire Glen Court; and
 - b. Continue monthly sampling at 3627A Southside Avenue and 3635 Southside Avenue.
3. Sampling result summary tables are to be provided to OCP via email within 5 days of receipt of all sampling results for each event. At a minimum, the summary data table for the recovery wells and the proximal monitoring wells must include the following: Well ID, pump depth (recovery wells), sample method, sample depth, and all sampling data from January 2019 to present. The summary data table is to include all wells proposed by ExxonMobil and the additional wells required by OCP in this letter. A summary table for the results of potable wells sampled with 2 years of historical data must also be provided.
4. If adverse conditions occur during implementation of the approved *Work Plan* (e.g., rebound of dissolved-phase petroleum concentrations in monitoring wells or private supply wells, petroleum constituents detected at or above groundwater standards in monitoring wells, other unanticipated results), ExxonMobil must notify OCP immediately. The proposed trigger of a 50 part per billion (ppb) increase of MTBE relative to the 2-year average for each well is an acceptable standard for required notification to OCP and consideration of reactivating the remediation system. MDE reserves the right to require system reactivation at levels less than the 50 ppb increase trigger.
5. Because the pumping at the 3527A Southside Avenue property is being discontinued, a stand-alone summary report, with all the data as specified in the MDE approval letter dated November 20, 2020, must be submitted no later than April 30, 2022.
6. A final *Report of Results* must be submitted to OCP within 45 days following completion of field activities that documents all recovery well shutdown and post-shutdown monitoring activities and data associated with the approved *Work Plan*. The *Report of Results* must be a stand-alone comprehensive report that includes, at a minimum, the following: comprehensive data summary tables with the data noted above and submitted via monthly emails; well gauging data collected during the cycling period; a site figure noting the recovery wells, proximal monitoring wells, and properties currently being monitored; and any additional appropriate discussions and/or additional data tables or trend graphs. If any aspect of the *Work Plan* was not implemented or there were deviations to the *Work Plan*, they must be documented in the *Report of Results*. In addition, include a table summarizing the sampling frequency for each of the proximal and recovery wells after completion of the cycling events. Any work proposal for additional activities should be submitted as a separate stand-alone document.

Mr. Ben Wood
Case No. 2006-0303-BA
Page 4

If you have any questions, please contact Ms. Ellen Jackson at 410-537-3482 (ellen.jackson@maryland.gov) or me at 410-537-3389 (andrew.miller@maryland.gov).

Sincerely,



Andrew B. Miller, Chief
Remediation Division
Oil Control Program

Enclosure: Email March 2, 2022, regarding Sampling Plan

cc: Alicyn Craig, Esquire, ExxonMobil Corporation
Mr. and Mrs. Roberts (3504 Hampshire Glen Ct.)
Mr. and Mrs. Craig (3627A Southside Avenue)
Mr. and Mrs. Lucas (3635 Southside Avenue)
Mr. Mark Schaaf, Kleinfelder East, Inc.
Mr. Kevin Koepenick, Manager, Groundwater Management Section, Baltimore County
DEPS
Ms. Ellen Jackson, Case Manager, Remediation Division, Oil Control Program
Ms. Julie Kuspa, Office of Attorney General
Mr. Christopher H. Ralston, Program Manager, Oil Control Program