



June 29, 2020

Mr. Joseph Ogren
Project Manager
ExxonMobil Environmental Services
38 Varick Street
Brooklyn, NY 11222

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

Dear Mr. Ogren:

The Maryland Department of the Environment's (MDE) Oil Control Program (OCP) completed a review of the *Recovery Well Conversion Report of Results and Work Plan*, dated January 22, 2020, and the revised charts, tables, and figures requested by OCP on March 13, 2020 and received on April 3, 2020 (collectively the *Work Plan*), data from the 1st quarter 2020 report received May 20, 2020, and data collected in 2nd quarter 2020 received by email on June 23, 2020. The *Work Plan* includes the results of the last sequential shutdown and conversion of select recovery wells to monitoring wells pursuant to the *Sequential Conversion of Select Wells Report of Results and Proposed Work Plan*, dated March 25, 2019, and MDE approval letter dated May 24, 2019. The proposed *Work Plan* includes the following activities:

- Dual-Phase Extraction (DPE) system shutdown;
- Sequential recovery well conversion of 16 additional recovery wells; and
- A reduction in groundwater monitoring (i.e. groundwater sampling and/or gauging), select monitoring well abandonment, and the cessation of monitoring at certain wells with retention for post-remedial monitoring (i.e. inactive status).

The MDE approved the DPE system shutdown in separate correspondence dated April 21, 2020. This letter specifically responds to the work plan request for the sequential recovery well conversion of 16 recovery wells. The MDE will submit a separate response letter regarding the reduction of groundwater monitoring and well abandonment proposal.

A total of six sequential recovery well shutdowns were completed over the period of 2010 through 2019 with no significant sustained rebound of petroleum concentrations observed. The last sequential shutdown of recovery wells occurred between June and October 2019. Although 17 recovery wells were proposed for conversion to monitoring wells, recovery well MW-183 was not

converted and currently remains a recovery well due to MTBE concentrations detected above the state action level observed after MDE approval. Therefore, a total of 16 recovery wells were converted to monitoring wells. No sustained rebound conditions occurred at any of the recovery wells after recovery pumping was terminated. All groundwater concentrations of petroleum constituents have remained below MDE groundwater standards and/or action levels.

A *Work Plan* to conduct a sequential recovery well shutdown of 16 additional recovery wells was proposed. Like previous shutdown procedures, the recovery wells are broken into three groups that will be sequentially shut down and monitored on a monthly basis for three months. If no adverse conditions are observed, the wells will remain as monitoring wells and future sampling will revert to the pre-shutdown monitoring schedule. The following groups of recovery wells are proposed:

- Group 1: MW-4, MW-27R, MW-37, MW-82R, MW-89, MW-121;
- Group 2: MW-7, MW-13, MW-176, MW-184, SVE-2; and
- Group 3: MW-59B, MW-82B, MW-151, MW-183, SVE-3.

In addition, 10 monitoring wells (MW-24, MW-77A, MW-80B, MW-84, MW-91C MW-137, MW-168, MW-180A, MW-181A, and MW-187A) will be gauged and sampled monthly, starting with the first group shut down, and continue for three months following shutdown of the third group. Monitoring (gauging and groundwater sampling) will then revert to the approved sampling frequency. After completion of shutdown and the post-shutdown monitoring event, provided no adverse conditions are observed, the converted recovery wells will remain as monitoring wells. Gauging and groundwater sampling will revert to the pre-shutdown monitoring schedule.

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, and a comprehensive monitoring well network for continued monitoring during the remainder of cleanup activities and post-remedial monitoring, and after conducting a risk-based analysis, MDE approves the proposal to convert all but two recovery wells (MW-183 and SVE-3) to monitoring wells. Therefore, conversion of the approved recovery wells may be initiated as described in the *Work Plan*. Please note that the pump in MW-183 must be raised to 150 feet below ground surface (bgs) and sampling shall continue under the current frequency. This well previously contained elevated petroleum levels prior to lowering the pump to 200 feet bgs in October 2017. SVE-3 has had an erratic detection frequency over the last several years with at least two occasions in the past two years where methyl tertiary-butyl ether detections were above 100 parts per billion. Therefore, it must continue to be used for active recovery and monitored under the current monitoring frequency.

Regarding the proposed monitoring plan for the recovery well conversions, MDE has identified additional wells that are required to be monitored and has determined that changes to the frequency of a select number of the proposed monitoring wells is warranted. The MDE approves the monitoring wells proposed to monitor rebound conditions contingent upon the following modifications:

- Include wells MW-9, MW-77B, and MW-106 for monthly sampling after recovery well shutdown. Sampling of these wells must continue to be performed on a quarterly basis.
- Include wells MW-101A and MW-15 to be sampled on a quarterly basis. They are currently in “gauge only” status.
- Well MW-36 must be sampled on a quarterly basis and included in the monitoring (do not need to perform monthly sampling). This well is currently sampled on a semi-annual basis.
- Monitoring well MW-180A must be sampled quarterly after the three monthly sampling events are completed.

For those wells proposed to be monitored during the conversion process that were completed as open boreholes (i.e., MW-176, MW-184, and MW-82B), discrete zone sampling must be completed after redevelopment is completed. Discrete zone sampling, per the identified zones for each well in the attached table, must be conducted monthly for at least the first two months so that current conditions can be evaluated relative to sampling data obtained prior to the initiation of recovery pumping. After the first two months, alternate sampling methods and/or sampling depths for the subsequent sampling events may be submitted with justification for consideration and approval. Discrete zone sampling of the identified wells must continue until written approval for an alternative method is received.

A final *Report of Results* with all data must be submitted to the OCP within 45 days upon completion of field activities, including all recovery well shutdown and post-shutdown monitoring activities associated with the *Work Plan*. 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

cc: Joseph P. Perez, Esquire, ExxonMobil Corporation
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

**Recovery Well Conversions
MDE Comments and Approval**

Recovery Well	Group	RW to MW Conversion – MDE Approved	MDE Sampling Requirements	Rationale
MW-4	1	Yes		
MW-27R	1	Yes		
MW-37	1	Yes		
MW-82R	1	Yes		
MW-89	1	Yes		
MW-121	1	Yes		
MW-7	2	Yes		
MW-13	2	Yes		
MW-176	2	Yes	Perform discrete zone sampling as specified from: 125-135', 150-160', 164-174', 182-192', 209-219', and 233-243'	Duplicate original discrete zone sampling to evaluate current data vs. initial data.
MW-184	2	Yes	Perform discrete zone sampling as specified from: 116-117', 143-147', 187', 240', 275', and 300'	Duplicate original discrete zone sampling to evaluate current data vs. initial data
SVE-2	2	Yes		
MW-59B	3	Yes		
MW-82B	3	Yes	Collect discrete zone samples from 55', 74', and 125'.	Open borehole 50-125', fracture identified at 73.81'. Samples to be collected at top of open BH, at the fracture and bottom of BH.
MW-151	3	Yes		
MW-183	3	No	Raise pump to 150' and continue monitoring.	Well contained elevated petroleum levels prior to lowering pump to 200' in Oct. 2017.
SVE-3	3	No	Continue with current monitoring.	+100 ppb MTBE detection within last year and erratic trend