AP - 111

Interim GW Recovery System WP

2019

Marathon Petroleum Company LP

June 24, 2019

Mr. John E. Kieling, Chief
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Re: Response to Disapproval
(Response to Approval with Modifications May 1, 2019)
Interim Groundwater Recovery System Work Plan
Marathon Petroleum Company LP, Gallup Refinery
(dba Western Refining Southwest, Inc.)
EPA ID# NMD000333211
HWB-WRG-19-006

Dear Mr. Kieling:

Attached please find the response to comments contained in the New Mexico Environmental Department (NMED) Disapproval letter dated May 29. 2019.

If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. Brian Moore at 505-726-9745.

Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Marathon Petroleum Company – Gallup Refinery

Robert S. Hanks
Refinery General Manager

Cc: C. Chavez (OCD)

92 Giant Crossing Road
Jamestown, NM 87347

NMED Comment 1:
On the cover letter, the task number is incorrectly referenced as HWB-WRG-18-006. The correct task number for this correspondence is HWB-WRG-19-006. Correct the task number in future correspondence.

MPC Response 1:
The task number has been corrected on this response.

NMED Comment 2:
The Permittee's response to NMED Comment 1 states, "[w]hile it is true that the primary purpose of the groundwater recovery system is to mitigate the migration of both dissolved phase and non-aqueous phase contaminants, a secondary and serendipitous benefit of the system will be to address the rising groundwater levels in the area immediately surrounding the groundwater recovery pumps." The Permittee must also address the issue of leaking systems at the facility to counter the rise in groundwater. The Permittee reported in the 2019 *First Quarter Hydrocarbon Seep Status Report* that the Reverse Osmosis (RO) Reject water system was leaking and is now offline and rerouted. This may affect groundwater levels and affect the pumping rates for the recovery wells. No response required.

MPC Response 2:
No response.

NMED Comment 3:
The Permittee's response to NMED's Comment 2 states, "MPC requests that the pumps be allowed to extract water from bottom of the screened interval which will have a greater impact on both dissolved phase and free product." Well RW-1 is screened from 25 to 40 feet below ground surface (bgs). The depths to separate phase hydrocarbon (SPH) were approximately 26 feet bgs and SPH column thickness ranged from one to 3.5 feet in well RW-1 in 2017 according to the *2017 Annual Groundwater Report.* For wells such as RW-1 that contain measurable free product, the Permittee must not install a pump at the bottom of the screen. Pumps must be installed so that the pump intakes should be located within four feet of the groundwater-free product interface to increase the potential for free product recovery. For the proposed recovery wells (e.g., OW-55) that do not contain free product, extraction from the bottom of the screen is acceptable. Provide a table with a list of proposed extraction wells, well-screened intervals, depths to water, depths to free product, and the proposed pump intake depths in a response letter.

MPC Response 3:
Pumps are proposed to be placed at the bottom of all interim recovery wells. If the pump is placed within the upper four feet of the water column in the proposed recovery wells, dissolved phase contaminants (i.e., benzene at over 30 ppm in recovery wells 1 and 2) will be allowed to migrate unabated toward the property line. Additionally, if the concern is that free product would impact intervals where it has not previously been reported, it is worth

noting that the free product is only present at the current depths because of the water the facility is losing from leaks and potentially from water well PW-3. As the leaks have caused water levels to rise, free product has been liberated and has migrated upward through sediments and into the water column. So, dissolved contaminants and LNAPLs have already impacted the deeper sediments in the area prior to rising water levels and limiting the recovery of only skimming product from the upper four feet of the water column will not change that.

A table summarizing proposed extraction wells, well-screened intervals, depths to water, depths to free product, and the proposed pump intake depths have not been provided in this response. MPC has previously submitted all monitoring well construction diagrams to the NMED. These logs contain information on well depth and screened intervals. Additionally, the Annual Groundwater Reports contain information on depth to water and depth to LNAPL (where present).

NMED Comment 4:
The Permittee's response to NMED's Comment 2 states, "[i]t is also noted that the previous pumps that were installed in the recovery wells were also set at the bottom of the existing recovery wells." This practice must be discontinued (see comments). Identify the recovery wells where groundwater was extracted from bottom of the screen and state whether SPH was present in the wells in the response letter.

MPC Response 4:
See the response to comment 3 above.

NMED Comment 5:
The Permittee's response to NMED Comment 2 states, "[w]hile it is true that not all wells have free product in them, the dissolved phase extends to areas far beyond that occupied by free product. To limit the pumping interval of a recovery system is to continue to allow dissolved phase constituents to migrate unabated." NMED's concern regarding the placement of pumps at the bottom of the screened interval in wells that contain free product (e.g., OW-58) is that the free product recovery will be limited. See Comment 3, above.

MPC Response 5:
See response to Comment 3.

NMED Comment 6:
The Permittee's response to NMED's Comment 4 states, "[w]ells OW-14, OW-58, OW-30 and OW-55 are situated in a more easterly location that is closer to the property boundary of the refinery to minimize the opportunity for offsite migration. Additionally, the concentration[s] of constituents are lower in OW-57 than in the proposed wells. The overriding factor in well selection for these wells was boundary control." OW-55 is not close to the eastern boundary of the facility. There are other wells (e.g., OW-29) that are

closer to the eastern boundary. Well OW-29 must also be considered as an extraction well; well OW-29 contains increasing MTBE concentrations.

MPC Response 6:

Well OW-55 has higher concentrations of benzene and naphthalene than OW-29 and is, therefore, a higher priority pumping location for initial recovery efforts. MPC will evaluate the addition of other wells once the proposed system has been in operation for a period of time such that drawdown/recovery observations can be made.

Marathon Petroleum Company LP

May 8, 2019

Mr. John E. Kieling, Chief
New Mexico Environmental Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Re: Response to Approval With Modifications
Interim Groundwater Recovery System Work Plan
Marathon Petroleum Company LP, Gallup Refinery
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EPA ID# NMD000333211
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Dear Mr. Kieling:

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If you have any questions or comments regarding the information contained herein, please do not hesitate to contact Mr. Brian Moore at 505-726-9745.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,
Marathon Petroleum Company – Gallup Refinery

Robert S. Hanks

Robert S. Hanks
Refinery General Manager

Cc: C. Chavez (OCD)

92 Giant Crossing Road
Jamestown, NM 87347

NMED Comment 1:
In the first paragraph of the Work Plan, the Permittee states, "[t]his system will be operated on an interim, seasonal basis to address groundwater impacts at the site until such time as an engineered system can be presented to the NMED for review and approval." In the March 20, 2019 meeting between the Permittee and NMED, the Permittee stated that the recovery system will also address the increasing groundwater elevation in the area. The Work Plan does not discuss this. In the response letter, state the secondary purpose of the groundwater recovery system.

MPC Response 1:
While it is true that the primary purpose of the groundwater recovery system is to mitigate the migration of both dissolved phase and non-aqueous phase contaminants, a secondary and serendipitous benefit of the system will be to address the rising groundwater levels in the area immediately surrounding the groundwater recovery pumps. As discussed in the March 20, 2019 meeting, Marathon presented data to the NMED documenting rising water levels in monitoring wells at the site. The data presented at the meeting was extracted from annual groundwater monitoring reports that were previously submitted to the NMED. This interim groundwater recovery system will most certainly have an effect in reducing local water levels while MPC addresses potential sources of water contributing to the rising water levels.

NMED Comment 2:
In the section titled "Proposed Location of initial Recovery Wells", the Permittee states, "[t]he initial proposed recovery system will consist of recovery wells RW-1, RW-2, RW-5, RW-6, and monitoring wells OW-14, OW-58, OW-30, and OW-55." The screened intervals of some wells are submerged below the water table (RW-2, OW-14, OW-30 and OW-58); therefore, these wells are not suitable to address groundwater impacts. However, the Permittee may extract groundwater from all proposed wells for the purpose of lowering the water level and controlling contaminant migration. During the extraction of groundwater, the inlet of the pneumatic pumps must not be set more than two feet lower than the lowest groundwater level historically recorded. This measure will prevent separate phase hydrocarbon (SPH) from contaminating soils it has not previously impacted. Include the provision in the response letter.

MPC Response 2:
The purpose of this interim system is to simply take advantage of wells that already exist at the site in order to have an impact on both dissolved phase and non-aqueous phase liquids in the area without the need for lengthy review and comment periods regarding the design of new recovery well depth, screened intervals, spacing, etc.. While it is true that not all wells have free product in them, the dissolved phase extends to areas far beyond that occupied by the free product. To limit the pumping interval of a recovery system is to continue to allow dissolved phase constituents to migrate unabated. Additionally, even though the screened interval in some of the proposed wells are "submerged" at this time, once we start removing water from them, the screened intervals will no longer be submerged as the cone of depression caused by the pump will gradually move well below the top of the screened interval.

Additionally, when the source(s) of excess water in the subsurface at the site have been removed, the water level will naturally decrease which will allow dissolved phase to migrate downward at

whatever location it is currently in as the water level subsides. As the water level continues to subside, dissolved phase constituents will adhere to the soil horizon particulate matter. For this reason, it would make sense to stop the migration of dissolved phase constituents sooner, rather than later, when it will potentially occupy much more area. Therefore, MPC requests that the pumps be allowed to extract water from bottom of the screened interval which will have a greater impact on both dissolved phase and free product. It is also noted that the previous pumps that were installed in the recovery wells were also set at the bottom of the existing recovery wells.

Additionally, if MPC does nothing to mitigate the migration of dissolved phase contaminants, it will eventually cross into adjacent properties that are currently not impacted. It is in everyone's best interest to address the non-aqueous and dissolved phase impacts at the same time.

NMED Comment 3:
Twin well OW-58, with a screen that crosses the water table, was previously proposed to be installed. Once the twin well is complete, the Permittee must use the well to extract groundwater. Switch extraction from the original well to the new well. Include the provision in the response letter.

MPC Response 3:
See the response to Comment 2 above.

NMED Comment 4:
Well OW-55 is located further north of the source area. Presumably, well OW-55 is included to address the increasing water levels and to prevent acceleration of further contaminant migration in that direction. Well OW-57 is located closer to production well PW-3 and the water level in the well is increasing. Groundwater extraction from well OW-57 may more effectively reduce contaminant migration. Groundwater must also be extracted from well OW-57 or provide justification for not extracting groundwater from well OW-57 in the response letter.

MPC Response 4:
Wells OW-14, OW-58, OW-30 and OW-55 are situated in a more easterly location that is closer to the property boundary of the refinery to minimize the opportunity for offsite migration. Additionally, the concentration of constituents are lower in OW-57 than in the proposed wells. The overriding factor in well selection for these wells was boundary control.

Additionally, the groundwater sampling forms for well OW-57 indicate that it purges dry after developing approximately 1.75 gallons of fluid. The forms indicate that the recovery rate is so slow that it must be sampled the next day. It is probable that the effects of pumping this well would be minimal.

NMED Comment 5:
In the section titled "Proposed Recovery Well Design", the Permittee states, "[each recovery well will be operated as an independent, closed system." The proposed remediation is limited to the northeast quadrant of the refinery. However, the same recovery system may be proposed in other areas of the refinery where SPH is persistently present (e.g., GWM-1, NAPIS-1 and

MKTF wells) since each recovery system is independently operated and appears portable. In the future, evaluate the applicability of the proposed remedial approach in other areas of the refinery.

MPC Response 5:
At such time as MPC is able to install and stabilize the operation of the interim system proposed herein, consideration could be given to operating similar systems in other areas. The urgency of the Group C Area is that it is near a property boundary.

NMED Comment 6:
The inlet of the pneumatic pump must not be set more than two feet lower than the lowest groundwater level recorded in each well (see Comment 2). Provide a table showing all proposed recovery wells with the depths to pump inlet, screened intervals, and the most current and the lowest recorded SPH/groundwater levels in the response letter.

MPC Response 6:
See response to Comment 2.