NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-6000 Fax (505) 476-6030
www.env.nm.gov

ENTERED

Michelle Lujan Grisham
Governor

Howie C. Morales
Lt. Governor

James C. Kenney
Cabinet Secretary

Jennifer J. Pruett
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

JUL - 2 2020

Stacy Boultinghouse, PG
Environmental Manager
Transwestern Pipeline Company, LLC
1300 Main Street
Houston, TX 77002

RE: APPROVAL WITH MODIFICATIONS
REPORT OF 2019 GROUNDWATER REMEDIATION ACTIVITIES
FORMER SURFACE IMPOUNDMENTS
TRANSWESTERN COMPRESSOR STATION NO.9
ROSWELL, CHAVES COUNTY, NEW MEXICO
EPA ID NMD986676955
HWB-TWP-20-001

Dear Ms. Boultinghouse:

The New Mexico Environment Department (NMED) has reviewed the *Report of 2019 Groundwater Remediation Activities Former Surface Impoundments Transwestern Compressor Station No.9* (Report), dated May 2020, submitted by Transwestern Pipeline Company, LLC (the Respondent). NMED hereby issues this Approval with Modifications with the attached comments.

The Respondent must address all comments in the attachment and submit a response letter, replacement pages, tables and figures and redline-strikeout and clean electronic versions of the revised Report no later than **December 31, 2020**.

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document

does not constitute agreement with all information or every statement presented in the document.

If you have questions regarding this Approval with Modifications, please contact Michiya Suzuki of my staff at 505-476-6046.

Sincerely,

Kevin Pierard
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
M. Suzuki, NMED HWB
M. Bratcher, NMOCD
L. King, EPA Region 6 (6LCRRC)

File: TWP-20-001 and Reading, 2020
NMOCD Administration Record, AP-125

Attachment

Comment 1
Although the Respondent appropriately submitted two hard copies and an electronic copy in accordance with Order Section IX.A, the hard copies of the Report were not bound. The Report contains approximately 400 pages. Previously, the Respondent submitted bound copies of the annual reports for NMED's review. Submittals must be provided as bound copies in the future.

Comment 2
The Executive Summary, page vi, states, "1,1-DCE were detected in groundwater at concentrations exceeding the applicable cleanup levels during the sampling events." NMED's October 2, 2019 *Response to Comments regarding Response to Approval with Modifications with Comments 2018 Annual Report* states, "[p]ropose to analyze for 1,4-dioxane [in groundwater samples collected from the wells where chlorinated solvents have been detected within the past ten years] for two consecutive events in the upcoming revision of the sampling and analysis plan." This comment serves as a reminder. No revision required.

Comment 3
The Executive Summary, page vi, and Section 3.2.1.1, *Suspected Perched Aquifer*, page 7, state, "[b]ased on field observations [in well SVE-23], the physical properties of the PSH appear to have coated the optical lens of the probe causing groundwater not to be detected by the probe and PSH thickness measurement on March 25, 2020 to be skewed." Comment 1 in NMED's *Response to Comments TWP 2020-HWB-TWP-19-003,* dated May 26, 2020 states, "PSH thickness of 4.64 feet is not an outlier based on historical data; therefore, the measurement conducted on March 25, 2020 was unlikely skewed. Since PSH thickness significantly fluctuates over time, correlation between depth to water (DTW) and PSH thickness must be evaluated... Evaluate the correlation in future groundwater monitoring reports." The evaluation must be included in the 2020 Report. No revision required.

Comment 4
The Executive Summary, page vi, and Section 3.2.1.1, *Suspected Perched Aquifer*, page 7, state, "[f]urther PSH monitoring and manual bailing will continue for SVE-23 in 2020 to monitor and recover PSH, if present." Comment 2 in NMED's May 26, 2020 letter states, "[c]onduct PSH measurements in well SVE-23 without bailing at this time and evaluate correlation between DTW and PSH thickness. Once the depth where PSH is present is evaluated, NMED may require a separate work plan to mitigate PSH." This comment serves as a reminder. No revision required.

Comment 5
The Executive Summary, page vi, and Section 3.2.1.1, *Suspected Perched Aquifer*, page 7, state, "the detection of PSH [in well SVE-23] may be residual amounts that may have been collected in the well sand pack overtime." Comment 3 in NMED's May 26, 2020 letter states, "[s]oil investigation is more appropriate to determine if PSH is present in the annular space or trapped in the soil formation. Propose to submit a work plan to delineate the extent of PSH (e.g., using

laser-induced fluorescence) at the site, as necessary." This comment serves as a reminder. No revision required.

Comment 6

In Section 3.0, *Semi-Annual Groundwater Monitoring,* page 3, the Respondent states, "[i]n November the sampling event was postponed due to unforeseen circumstances." Explain the nature of the unforeseen circumstances that prevented the November sampling event to be conducted in a response letter.

Comment 7

In Section 3.0, *Semi-Annual Groundwater Monitoring,* page 4, the Respondent states, "[p]rior to sampling, the selected monitoring wells were purged and monitored for stabilization of water quality parameters, including pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), and temperature using a calibrated YSI Meter. Purging was considered complete when the measured parameters of the purge water stabilized to within 10 percent for three consecutive measurements." According to Appendix A, *Copies of June 2019 and November 2019/January 2020, February 2020, March 2020 and April 2020 Field Notes,* groundwater samples were collected prior to meeting all stabilization criteria. For example, the last two dissolved oxygen (DO) readings of groundwater samples collected from well SVE-30 were recorded as 3.69 and 0.63 mg/L during the January 8, 2020 sampling event. Clarify whether purging is considered complete when one or all of these criteria is met in the response letter. If purging is considered complete when all stabilization criteria are met, sampling was not conducted in accordance with the sampling protocol. In this case, provide an explanation for why sampling was conducted without meeting all stabilization criteria.

Comment 8

In Section 3.2, *Groundwater Monitoring & Chemical Analytical Data Results,* page 5, the Respondent states, "[t]he water bearing unit at the Site has been reported as a perched aquifer within the area of the former surface impoundments, an uppermost aquifer within which most of the monitoring and remedial activities take place, and the deeper San Andres Formation Aquifer." Comment 3 in NMED's *Approval with Modifications Report of 2018 Groundwater Remediation Activities,* dated April 23, 2019 stated, "the designation of "uppermost aquifer" is misleading. Provide a different designation to reference the aquifer below the perched zone in future reports." Subsequently, the Respondent's response letter, dated May 30, 2019 stated, "[i]n future reports, the formerly designated "uppermost aquifer" will be referred to as the "upper aquifer", while the water entrained above the discontinuous clay will continue to be referred to as the "perched zone"." Revise the Report to designate the aquifer below the perched zone as upper aquifer throughout the Report and provide replacement pages.

Comment 9

In Section 3.2.2, *Groundwater Analytical Results,* page 8, the Respondent states, "the laboratory analytical reports are included in Appendix B." A hard copy of the laboratory analytical reports is not required in the future reports. Provide an electronic copy only in the future reports.

Comment 10

In Section 3.2.2, *Groundwater Analytical Results,* page 8, the Respondent states, "[a]nalytical data indicates that other VOCs were detected in MW-20, MW-22, MW-26, MW-39, MW-41, MW-42, SVE-29, SVE-30, and RW-1." Table 3-5a, *Summary of Groundwater Analytical Results – Other Constituents Detected*, lists detected volatile organic constituents other than benzene, toluene, ethylbenzene, total xylenes, 1,1-dichloroethane, 1,1-dichloroethene and vinyl chloride for wells MW-42, SVE-30, and RW-1. However, the table does not list the VOCs for wells MW-20, MW-22, MW-26, MW-39, MW-41, and SVE-29. Resolve the discrepancy and provide replacement pages or table. In addition, well SVE-29 is not listed in Table 3-1, *Sampling and Analysis Plan*. Explain the basis for collecting samples from well SVE-29 in the response letter.

Comment 11

In Section 3.3, *Perch Aquifer Evaluation,* page 8, the Respondent states, "[a]djacent shallow wells SVE-27 and SVE-28 were used to observe drawdown influences [from well RW-1]. SVE-27 was determined to be dry prior to extraction and remained dry through the evaluation." Well SVE-27 would not provide any useful information because the well was dry. Well RW-1 is screened from 36.8 to 41.7 feet below ground surface (bgs) while wells SVE-27 and SVE-28 are screened from 20 to 35 feet bgs and from 25 to 35 feet bgs, respectively. The depths of the screened intervals between the extraction and observation well SVE-27 do not overlap. Well SVE-27 Is not appropriate to be used as an observation well for RW-1. The depths of the screened intervals between the extraction and observation well SVE-28 appear to overlap; however, the distance from the extraction well exceeds 50 feet. In order to better observe drawdown influences from well RW-1, an installation of piezometers in close vicinity of well RW-1 is likely more appropriate. Propose to submit a work plan to install piezometers for the evaluation in the response letter, as appropriate.

Comment 12

In Section 3.3, *Perch Aquifer Evaluation,* pages 8 and 9, the Respondent states, "[a] 4-inch diameter pump with 1-inch outside diameter tubing was inserted into RW-1 and groundwater was extracted at an average rate of approximately 32 gallons per minute (gpm). The average groundwater extraction rate was maintained for approximately two hours, but the extraction process was shortly deactivated after groundwater volumes unexpectedly reached the storage tank capacity, and the evaluation was suspended. The evaluation of the perch[ed] aquifer will resume and continue in 2020 and recommendations for future action of the perch[ed] aquifer will be provided in the 2020 Annual Monitoring Report." The sustainable groundwater production from well RW-1 indicates that a separate aquifer is likely present above the upper

aquifer. Because the Respondent proposes to provide recommendations in the 2020 report, submittal of an investigation work plan for the separate aquifer may be deferred at this time.

Comment 13

In Section 4.0, *Remediation System Operation, Maintenance, and Monitoring,* page 9, the Respondent states, "the groundwater/PSH recovery portion of the remediation system was deactivated in January, February, March, April and early November and December 2019 due to freezing temperatures, and in April, May and June 2019 for system repairs and in preparation of sampling events." The system was only operational for four months of the year. Although preparation of a sampling event requires 72 hours of deactivation, the operation could have resumed once samples were collected. In addition, the system was deactivated for three months due to system repairs. Maintenance activities during this reporting period are discussed in the Report; however, they do not appear to be out of the ordinary. Explain the nature of the repairs that required three months of deactivation in the response letter. Furthermore, the system was deactivated for five months of the year due to freezing temperatures. Such long period of deactivation may adversely affect outcome of the remediation. Resolve the issue and minimize deactivation period due to freezing temperatures as it is expected to be a recurring issue, or provide a justification for such long deactivation period in the response letter.

Comment 14

In Section 4.2, *Groundwater Treatment System Monitoring Results*, page 10, the Respondent states, "[t]he groundwater extraction flowrate averaged 0.012 gallons per minute (gpm) in 2019." Section 3.3, *Perch Aquifer Evaluation,* pages 8 and 9, states, "groundwater [from well RW-1] was extracted at an average rate of approximately 32 gallons per minute (gpm)." MPE wells were screened in the upper aquifer and extraction flowrate only averaged 0.012 gpm. Well RW-1 was screened in the perched aquifer and extraction flowrate was sustained at 32 gpm. The upper aquifer is presumably more productive than the perched aquifer. The extraction flowrate of MPE wells may potentially be increased for better contaminant recovery. Evaluate whether the MPE wells are capable of extracting groundwater at a higher flowrate and provide a discussion in the 2020 Report.

Comment 15

In Section 5.0, *Summary of Findings and Conclusions*, page 12, the Respondent states, "[a]nalytical data from the 2019 semi-annual groundwater monitoring events indicates that BTEX and 1,1-DCE were detected at dissolved concentrations exceeding the GCLs in six monitoring wells. These exceedances are within the existing monitoring network. Benzene exceeding the GCLs is closely associated with observable PSH. 1,1-DCE concentrations are generally consistent with previous results." According to Table 3-5, *Summary of Groundwater Analytical Results*, page 45 of 63, the 1,1-dichloroethane (1,1-DCA) concentrations in the groundwater samples collected from well SVE-30 exceeded the applicable screening level. The exceedance of 1,1-DCA must also be noted in the section. Revise the Report and provide replacement pages.

Comment 16

In Section 5.0, *Summary of Findings and Conclusions*, page 13, the Respondent states, "[t]wo semiannual sampling events were completed for the recovery well RW-1, several SVE wells, and monitoring wells MW-10, MW-11, and MW-17 as requested by NMED." Groundwater sampling was conducted in February 2020 at wells MW-10, MW-11, and MW-17. Accordingly, the analytical results from these wells are not included in Figure 3-7, *Distribution of Dissolved Benzene Uppermost Aquifer January 2020,* and Figure 3-9, *Distribution of Dissolved BTEX Uppermost Aquifer January 2020.* However, the results collected from these wells must be included in these figures in order to demonstrate that the plumes are delineated at the site. Revise the figures and provide replacement figures.

Comment 17

Figures 3-4 and 3-5 depict distribution of phase separated hydrocarbon (PSH) in the upper aquifer. However, the thickness of PSH and the color that represents its thickness do not match in the figures. Revise Figure 3-4 and Figure 3-5 to present accurate PSH thickness. Provide replacement figures.

Comment 18

Figures 3-6 through 3-9 present analytical results collected from the perched aquifer (e.g., RW-1). Since the titles of these figures indicate that the data presentation is exclusive to the upper aquifer, the analytical results collected from the perched aquifer must be removed from the figures. Prepare separate figures that present analytical results collected from the perched aquifer and provide these figures. Also, the designation of the "uppermost aquifer" must be corrected to "upper aquifer" in the figures (see Comment 8).

Comment 19

Figures 3-10 and 3-11 depict distribution of 1,1-DCE in the upper aquifer. However, analytical results were also collected from the wells screened in the perched aquifer (e.g., RW-1). Prepare separate figures that present analytical results collected from the perched aquifer and provide these figures. Also, the designation of the "uppermost aquifer" must be corrected to "upper aquifer" in the figures (see Comment 8).

Comment 20

In Table 3-5, *Summary of Groundwater Analytical Results,* page 45 of 63, the 1,1-DCA concentrations in the groundwater samples collected from well SVE-30 exceeded the applicable screening level. However, the exceedance is not presented with bold font in the table. Correct the table and provide a replacement table.