TRANSWESTERN PIPELINE
An ENERGY TRANSFER Company

July 26, 2018

Mr. John Kieling
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505

RE: Response to Approval Letter Comments
2017 Annual Report
Roswell Compressor Station No. 9
Transwestern Pipeline Company
Roswell, Chaves County, New Mexico
NMOCD Case #GW-052
EPA ID No. NMD986676955
HWB-TWP-17-002

Dear Mr. Kieling;

Transwestern Pipeline, LLC (Transwestern) is pleased to submit this *Response to Comments* (RTC) pertaining to the May 1, 2018 *Approval with Modifications Letter* issued by the New Mexico Environment Department (NMED). These comments were developed by NMED and the New Mexico Oil Control Division (NMOCD) pertaining to a *Report on 2017 Groundwater Remediation Activities, Former Surface Impoundments, Transwestern Compressor Station No. 9* (Report) submitted by Transwestern in March 2018.

To respond specifically to each of the Agencies comments, the original comment included within the NMED letter is in **bold**, with the Transwestern response included in plain text immediately following the item requiring a response. Replacement pages to the Report are included as Attachments to this RTC.

<u>**Comment 1**</u>

The Respondent submitted two paper copies of the Report on March 21, 2018; however, the Respondent is required to submit two paper copies and one electronic copy of the Report in accordance with Section IX.A of the *Stipulated Final Order* (Order). The Respondent must submit an electronic copy of the Report by May 18, 2018.

Transwestern, through EarthCon, submitted both a PDF version of the report to NMED and NMOCD personnel on March 14, 2018. However, in response to this comment, EarthCon also mailed a CD to NMED on May 7 that was delivered to NMED on May 8, 2018.

Comment 2

In Section 1.0, *Introduction,* page 2, the Respondent states, "wastes generated by current pipeline maintenance activities are temporarily stored in aboveground storage tanks at the Facility prior to off-site recycling." Provide information regarding the storage tanks (e.g., locations, sizes) in relation to the surface impoundment location and explain how the wastes are transported to the storage tanks in a response letter.

The aboveground storage tanks are not subject to the Stipulated Final Order (SFO) issued by NMED in March 2013. These tanks serve to store natural gas condensate produced by pipeline maintenance activities which is delivered by piping from other operating equipment at the Facility. The condensate is transported offsite via vacuum trucks for recycling.

This information will be removed from future *Annual Reports* for the Site.

Comment 3

In Section 1.0, *Introduction,* page 2, the Respondent states, "the recovered fluids are conveyed to a 90-barrel aboveground storage tank that serves as a surge tank and separation unit for PSH and groundwater." Figure 5 in the *Response to Comments Revised Operation, Maintenance & Monitoring Plan,* dated October 19, 2017 depicts the tank as a 210-barrel surge tank. Correct the discrepancy in future reports and work plans. No revision to the Report is necessary.

Comment noted.

Comment 4

In Section 4.1, *Soil Vapor Extraction System Monitoring Results,* page 8, the Respondent states, "analytical data results summarizing in Table 4-1 indicate that the SVE system recovered approximately 3,050 pounds (or about 480 gallons) of TVOCs in 2017, which is greater than the approximately 2,000 pounds (or about 320 gallons) removed in 2016." According to Table 4-1, *SVE System Mass Removal Calculations for Total Volatile Organic Compounds,* the efficiency of contaminant mass removal rate has been improved approximately three times after August 2017 compared to the data collected in June 2017. The increased mass removal may be due to the result of system optimization. In the response letter, provide more detail regarding the increased mass recovery in terms of system optimization.

The Transwestern consultant for this project, EarthCon Consultants, Inc. (EarthCon), is of the opinion that the additional mass removal is the result of system optimization due to:

- Repairs to the thermal oxidizer systems that resulted in higher vacuum;
- Higher vacuum pressures obtained when the circuits were isolated;

- Concentrating vacuum extraction on wells with higher vapor concentrations; and,
- Circuits C & D are located in the source area for the constituents-of-concern.

The data obtained from the Site in 2017, and during the first quarter of 2018, appear to indicate that significant hydrocarbon mass can be removed from the site by operating the existing system and continuing to focus on system optimization rather than expanding the current system or developing a new system.

<u>Comment 5</u>

In Section 4.2, *Groundwater Treatment System Monitoring Results,* page 8, the Respondent states, "in addition, approximately 1,550 gallons of PSH accumulated in the surge tank in 2017, which is more than four times the amount of PSH accumulated in the surge tank in 2016 (350 gallons)." The volume of recovered groundwater was approximately 90,550 gallons in 2017 while 137,650 gallons of groundwater was recovered in 2016. Although the volume of recovered groundwater decreased, the volume of recovered PSH increased more than four times from 2016 to 2017. The cause of increased PSH recovery volume may be due to the result of system optimization. In the response letter, discuss additional detail regarding the increased PSH recovery in terms of system optimization.

It is also EarthCon's opinion that the increased PSH recovery volume is due to the result of system optimization. The higher vacuums applied by the blowers and along with the isolated circuits resulted in greater head differential at individual wellheads. This greater head differential induced across the formation increased total fluids and LNAPL recovery from the recovery wells.

<u>Comment 6</u>

In Section 5.0, *Soil Vapor Extraction Optimization Pilot Study,* page 10, the Respondent states, "in Circuit B, eleven recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in seven of the eleven recovery wells (MPE-12, MPE-13, MPE-14, MPE-16, MPE-17, MPE-19, and MPE-20), while PID readings of less than 150 ppmV were observed in MPE-15, MPE-18, and MPE-38." According to Figure 1-3, *Remediation System Layout,* MPE-21 is included in Circuit B; however, the PID reading from MPE-21 was not discussed. Similarly, the Respondent states, "in Circuit C, eleven recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in six of the eleven recovery wells (MPE-30, PME-31, MPE-32, MPE-35, MPE-39, and MPE-40), while PID readings of less than 150 ppmV were observed in MPE-34, MPE-36, and MPE-37." According to Figure 1-3, MPE-39 and MPE-40 are not included in Circuit C while MPE-41 is included

in Circuit C. The total number of recovery wells depicted in Circuit C is nine rather than eleven. Further, the Respondent states, "in Circuit D, nine recovery wells were used during the study. PID readings of greater than 200 ppmV were observed in each of the nine recovery wells (MPE- 22, MPE-23, MPE-24, MPE-25, MPE-26, MPE-27, MPE-28, MPE-29, and MPE-41)." According to Figure 1-3, MPE-41 is not included in Circuit D while MPE-39 and MPE-40 are included in Circuit D. The total number of recovery wells depicted in Circuit D is ten rather than nine. Clarify the discrepancies in the response letter and provide replacement pages and a revised figure that corrects the discrepancies.

Attachment A contains the replacement pages regarding Comment 6. To clarify these comments, MPE-21 was not included in the test, but the well exhibited less than 150 parts per million vapor (ppmv) during initial testing. Additionally, MPE-39 and MPE-40 are in Circuit D.

<u>Comment 7</u>

In Section 5.0, *Soil Vapor Extraction Optimization Pilot Study,* page 11, the Respondent states, "the lower applied vacuums of Circuits A and B may be attributed to the number of operating wells and the soil bedding material used for the underground main natural gas pipe line, which may be short-circuiting air for the SVE blowers." There are several recovery wells (e.g., MPE-12) in Circuits A and B, where elevated vacuum must be maintained so that contaminants can be effectively extracted. The recovery wells that exhibited elevated PID readings in Circuits A and B may be connected to Circuit C, where short-circuiting of air is unlikely, to provide higher vacuum. Concurrently, the recovery wells that exhibited lower PID readings in Circuit C (MPE- 34, MPE-36 and MPE-37) may be disconnected from Circuit C and reconnected to Circuit A or B. In the response letter, propose to submit a work plan to maximize mass recovery from the wells in Circuits A and B, where elevated PID readings were observed.

Transwestern does not believe that a work plan is necessary to maximize mass recovery in Circuits A and B. The available evidence from the Site indicates the potential for short-circuiting in these wells due to the length of the well screens compared to the depth of the nearby pipelines. Both Circuits A and B are located away from the former pit locations that represent the primary source area. In these areas, both soil and PSH impacts would be expected to be deeper and of less magnitude in the water-bearing unit. Transwestern has instructed EarthCon to evaluate methods to shorten the screen length in these areas, such as installing packers within the wells, as well as to concentrate on wells with higher ppmv concentrations and larger apparent PSH thicknesses. The existing plans for the Site and the SO foresee this operational flexibility. Transwestern and EarthCon will evaluate the results of these adaptations and report to NMED and NMOCD in the next *Annual Report*.

Comment 8

In Section 5.0, *Soil Vapor Extraction Optimization Pilot Study,* page 12, duration of operation in each Circuit is recorded in Table B, *Approximate Vapor-phase Mass Removal.* The duration of operation in each Circuit varies from 552 to 2016 hours. Some Circuits appeared to be operated longer while others appeared to be operated intermittently during the study. There are two blowers in the extraction system and each blower is reportedly capable of providing vacuum pressure of 10 inches of mercury. It is not clear which Circuits are operated by which blower or if the two blowers were concurrently operated on the isolated Circuits during the study. The recovery efficiency cannot be compared between Circuits if operating conditions are different.

For example, when one Circuit was operated using two blowers and the recovery efficiency was studied, the other Circuits must be operated under the same operating conditions to be able to compare the efficiency. Circuit D exhibited the highest PID readings while Circuit A exhibited the lowest. The Respondent must ensure that the data was collected under the same operating conditions. Provide a more detailed discussion describing the operating conditions of the study in the response letter.

System operation across the various circuits varied in terms of the number of wells both inter- and intra-Circuit due to a focus on wells with higher initial PID concentrations and interest in studying the effects of vacuum pressures and flow rates under various conditions. However, except for a brief period of time when one thermal oxidizer was down for repairs, both blowers were utilized during testing of each of the individual Circuits.

Comment 9

In Section 5.0, *Soil Vapor Extraction Optimization Pilot Study,* page 13, the Respondent states, "if recovery efforts were isolated on Circuit D for one year and the vapor concentrations remain consistent, mass removal amounts could potentially range between approximately 10,000 pounds and 20,000 pounds per year." While Circuits A, B and C are not operating, it is possible that the contaminant plumes could expand downgradient from the source areas. The current plume extents may have been maintained due to the current configuration of the extraction network. The system must not be isolated to operate only Circuit D. Rather, evaluate the possibility of upgrading the system to provide sufficient vacuum pressure. Propose to submit a work plan to upgrade the system (e.g., adding another blower dedicated to Circuit D, rather than limiting the current coverage of blowers for the extraction network, in the response letter.

Transwestern does not concur that another blower is required to be proposed for Circuit D. The scientific evidence regarding the plume is clear that its magnitude and extent has been reduced by the current system. Data collected in 2017 indicated the potential for flexible operation of the system to increase the removal of contaminants while retaining control of the plume. The soil vapor extraction and groundwater extraction technologies at the site can operate independently. Therefore, the groundwater plume is still controlled by pumping activities while vacuum extraction is isolated between Circuits to optimize mass removal rates.

The SFO (Section V.O) indicates that work completed prior to issuance of the order regarding investigation and remediation could be used to comply with the order. While NMED certainly has the right to request additional work under SFO (Section V.M), the existing remediation system and activities still comply with the SFO. Therefore, upgrades or additions to the existing system other than operation optimization is not warranted at this time

Comment 10

In Section 6.1, *Methodology,* page 16, the Respondent states, "to evaluate the stability of each constituent plume, temporal trends of the metrics for each plume were evaluated statistically. The area, average concentration (average apparent thickness for PSH), and mass indicator for each year were initially plotted to observe changes in each parameter from event to event." Since both the multi-phase extraction (MPE) and soil vapor extraction (SVE) systems have been operating at the site most of the time, the stability of each plume was evaluated under the influence of the remediation system. The plume stability may change based on the operation of the remediation system. For example, the more the system is optimized, the plume size may become temporarily smaller. The thickness of PSH in well MPE-41 was recorded as 4.99 feet in May 2017 while the thickness of PSH in the same well was recorded as "non-detect" in November 2017 according to Figure 3-4, *Distribution of PSH in the Uppermost Aquifer May 2017* and Figure 3-5, *Distribution of PSH in the Uppermost Aquifer November 2017.* The sudden decrease in the PSH thickness may be due to system optimization. It is not likely that PSH in well MPE-41 was abated permanently. The evaluation of plume stability will not provide useful information at this time; the analysis will only provide a snap shot of how the remediation system is performing. Once the system appears to have achieved the remedial objectives in the future, the stability analysis for each plume may be resumed and evaluated. The plume stability analysis is not warranted at this time. Remove the discussion of plume stability analysis from future reports and work plans. No revisions to this Report are necessary.

Transwestern does not concur with NMED's assessment of the plume stability analysis including both Mann-Kendall and Ricker Method analysis. Plume analytics are not only used to determine stability at the end of a project but are often conducted during active remediation to monitor the progress of remedial efforts. However, in response to NMED's request, this analysis will not be included in future reports until the remedial objectives or recovery to the extent practical are achieved.

Comment 11

In Section 8.0 *Recommendations,* page 22, "isolate vacuum extraction efforts on each recovery well circuit, focusing mainly on Circuits C and D, and pulsing with Circuits A and B." Instead of limiting current spatial and temporal coverage of the extraction network, propose to upgrade the remediation system to accommodate sufficient vacuum pressures to allow the optimization in the response letter. Refer to Comment 9.

Comment noted and has addressed its response in Comment 9.

Comment 12

Figure 3-1, *Well Locations* does not depict the locations of the SVE wells. Provide a replacement page of a revised Figure 3-1 or a separate figure showing the locations of SVE wells. In addition, wells SVE-1A, SVE-2A and SVE-3 appear to be active according to Table 3- 4, *Summary of Well Completion Details.* However, these SVE wells are not listed in Table 3-2, *Summary of Groundwater Surface Elevations.* Include these SVE wells in Table 3-2 and provide a replacement page. If these SVE wells have not been gauged previously, resume the measurements starting in 2018. The data must be presented in future reports.

Attachment B contains the revised Figure 3-1. Water levels were not collected from wells SVE-1A, SVE-2A and SVE-3 and were therefore not included in Table 3-2. These wells will be added to the Fall 2018 well gauging.

Comment 13

According to Table 3-2, the depth to groundwater in well RW-1 is recorded as 32.96 feet below ground surface (bgs) while the depths to groundwater in surrounding wells MPE-27, MPE-28 and MPE-40 are recorded as 68.27, 58.33 and 70.58 feet bgs, respectively in November 2017. The total depth of well RW-1 is reportedly 42.5 feet bgs where the well depth is more than 15 feet above the depths to groundwater in surrounding MPE wells. Provide an explanation for the measured depth to groundwater in RW-1 compared to the depths to groundwater in surrounding wells in the response letter. In addition, the well construction details for RW-1 are not included in Table 3-4. Include well construction details for RW-1 in Table 3-4. Provide a replacement page that includes well construction details for RW-1.

RW-1 is a sentinel well reportedly installed to the top of a finer-grained unit within the subsurface materials that allows for perched groundwater above the more regional water table. The boring log and well construction details for RW-1 are not available in the project file.

Comment 14

In Figure 3-3, *Groundwater Surface Elevation in the Uppermost Aquifer November 13, 2017,* seven data points are excluded from groundwater contour elevation. These exclusions are noted as anomalous. In Figure 3-2, *Groundwater Surface Elevation in the Uppermost Aquifer May* 22, *2017,* two data points that are used as valid data points for contouring the November 2017 groundwater elevation are noted as anomalous and excluded. The anomalies in the groundwater elevation measurements appear to occur sporadically at the site. Provide an explanation for why the anomalies occur and propose a measure to eliminate or reduce the occurrences in the response letter.

Anomalies in groundwater elevations not used for contouring considers well construction (deep well versus shallow well), potential field data collection errors, or potential top of casing elevation surveying errors. Further evaluation will be performed to identify proposed measures to eliminate, reduce or explain future occurrences in future *Annual Reports*.

Comment 15

Figures 3-4 and 3-5 use color scale to depict a thickness contour for measured phase separated hydrocarbons (PSH). The thickness of PSH and the color that represents its thickness do not match in the figures. For example, the thickness of PSH in well MPE-10 is recorded as 0.90 feet in Figure 3-4; however, the color representing its thickness depicts more than one foot. The thickness of PSH in well MPE-10 is recorded as 1.01 feet in Figure 3-5; however, the color representing its thickness depicts less than one foot. Revise Figure 3-4 and Figure 3-5 to present accurate PSH thickness. Provide replacement pages for the figures in the response letter.

Attachment C contains the revised Figures 3-4 and 3-5.

Comment 16

In Table 4-4, *Summary of Water Treatment System Analyses,* page 4 of 4, there is a typographical error on the date (11/27/18). Correct the error in future reports and work plans. No revision to this Report is necessary.

Comment noted.

Comment 17

In Appendix A, *Historical Submittal Summary,* a historical summary of submittals to NMED since the issuance of the Order is provided. However, some submittals (e.g., Extension Request dated October 3, 2017) are not listed in the summary. Revise Appendix A to include all submittals. Provide a replacement page for Appendix A or remove the Appendix altogether.

Attachment D includes a revised Appendix A, *Historical Submittal Summary*. This appendix will continue to be revised and submitted with future reports.

Transwestern continues to follow and uphold the purpose of the SFO by continuing to ensure ongoing remediation and prevent/mitigate environmental impacts. Transwestern appreciates the opportunity to continue to work with NMED and NMOCD to continue to bring this site to closure. If you have any further questions or comments regarding these responses, please do not hesitate to contact me at (210) 870-2725 or JD Haines of EarthCon Consultants, Inc. at (317) 450-6126.

Sincerely,

SBoultinghouse

Ms. Stacy Boultinghouse, PG
Environmental Manager
Transwestern Pipeline Company, LLC
Stacy.Boultinghouse@energytransfer.com

Cc: D. Cobain, NMED HWB
M. Suzuki, NMED HWB
K. Van Horn, NMED HWB
J. Griswold, NMOCD
B. Billings, NMOCD
L. King, USEPA Region 6
L. Campbell, Transwestern
J. Haines, EarthCon
J. Wilson, EarthCon

Attachment A

Pilot Study Data Evaluation

During the pilot study, vapor concentrations were measured from each recovery well line at the manifold of the selected Circuit. Vapor concentrations were measured by collecting an air sample in a tedlar bag and using a photoionization detector (PID). A summary of PID readings is provided in the table below.

Table A: PID Readings Summary of Wells at the Manifold

Circuit	Minimum PID Reading	Maximum PID Reading	Average PID Reading
	ppmv	ppmv	ppmv
A	2.2	406	156
B	32.3	1,226	397
C	22.8	717	318
D	211	1980	794

Notes: ppmv- parts per million per volume

In Circuit A, five recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in MPE-10 and MPE-11, while PID readings of less than 150 ppmV were observed in MPE-7, MPE-8, and MPE-9. The maximum PID reading of 406 ppmV was observed in MPE-10. A composite air sample was also collected from the Circuit A effluent main header line of the piping manifold. The average and maximum composite PID readings were measured to be 155 ppmV and 189 ppmV, respectively. The PID readings from the recovery wells appear to increase as the applied vacuum by the blower increases. The maximum applied wellhead vacuum achieved for Circuit A recovery wells was approximately 67.6 inches of water ("H_2O) or 5 inches of mercury ("Hg) in MPE-8.

In Circuit B, eleven recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in seven of the eleven recovery wells (MPE-12, MPE-13, MPE-14, MPE-16, MPE-17, MPE-19, and MPE-20), while PID readings of less than 150 ppmV were observed in MPE-15, MPE-18, and MPE-38. The maximum PID reading was observed in MPE-17. The average and maximum Circuit B composite PID readings were measured to be 235 ppmV and 387 ppmV, respectively. The maximum applied vacuum achieved for Circuit B recovery wells was 81.57"H_2O (6"Hg). MPE-21 was not included in the test, but the well exhibited less than 150 ppmv during initial testing.

In Circuit C, eleven recovery wells were used during the study. PID readings of greater than 150 ppmV were observed in six of the eleven recovery wells (MPE-30, MPE-31, MPE-32, MPE-35, MPE-39, and MPE-40), while PID readings of less than 150 ppmV were observed in MPE-34, MPE-36, and MPE-37. The maximum PID reading of 717.5 ppmV was observed in MPE-31. A composite air sample was also collected from effluent main header line from Circuit C. The average and maximum composite PID readings were measured to be 338 ppmV and 363 ppmV, respectively. The maximum applied vacuum achieved for Circuit C recovery wells was 155.8“H_2O (11.4“Hg).

In Circuit D, nine recovery wells were used during the study. PID readings of greater than 200 ppmV were observed in each of the nine recovery wells (MPE-22, MPE-23, MPE-24, MPE-25, MPE-26, MPE-27, MPE-28, MPE-29, and MPE-41). The maximum PID reading of 1,980 ppmV was observed in MPE-24. A composite air sample was also collected from effluent main header line from Circuit D. The average and maximum composite PID readings were measured to be 235 ppmV and 387 ppmV, respectively. The maximum applied vacuum achieved for Circuit D recovery wells was 81.57“H_2O (6.0”Hg) in 2017. However, further field evaluation in 2018 determined that applied vacuum of 122“H_2O (9”Hg) can be achieved for Circuit D.

The applied vacuum that can be achieved appears to vary between Circuits. In January of 2018, further evaluation was performed to assess the blower vacuum and the applied vacuum. According to field evaluation, a maximum applied vacuum of approximately 4.5” Hg was maintained for Circuits A and B while an applied vacuum of greater than 9” Hg was maintained for Circuits C and D. The lower applied vacuums of Circuits A and B may be attributed to the number of operating wells and the soil bedding material used for the underground main natural gas pipe line, which may be short-circuiting air for the SVE blowers.

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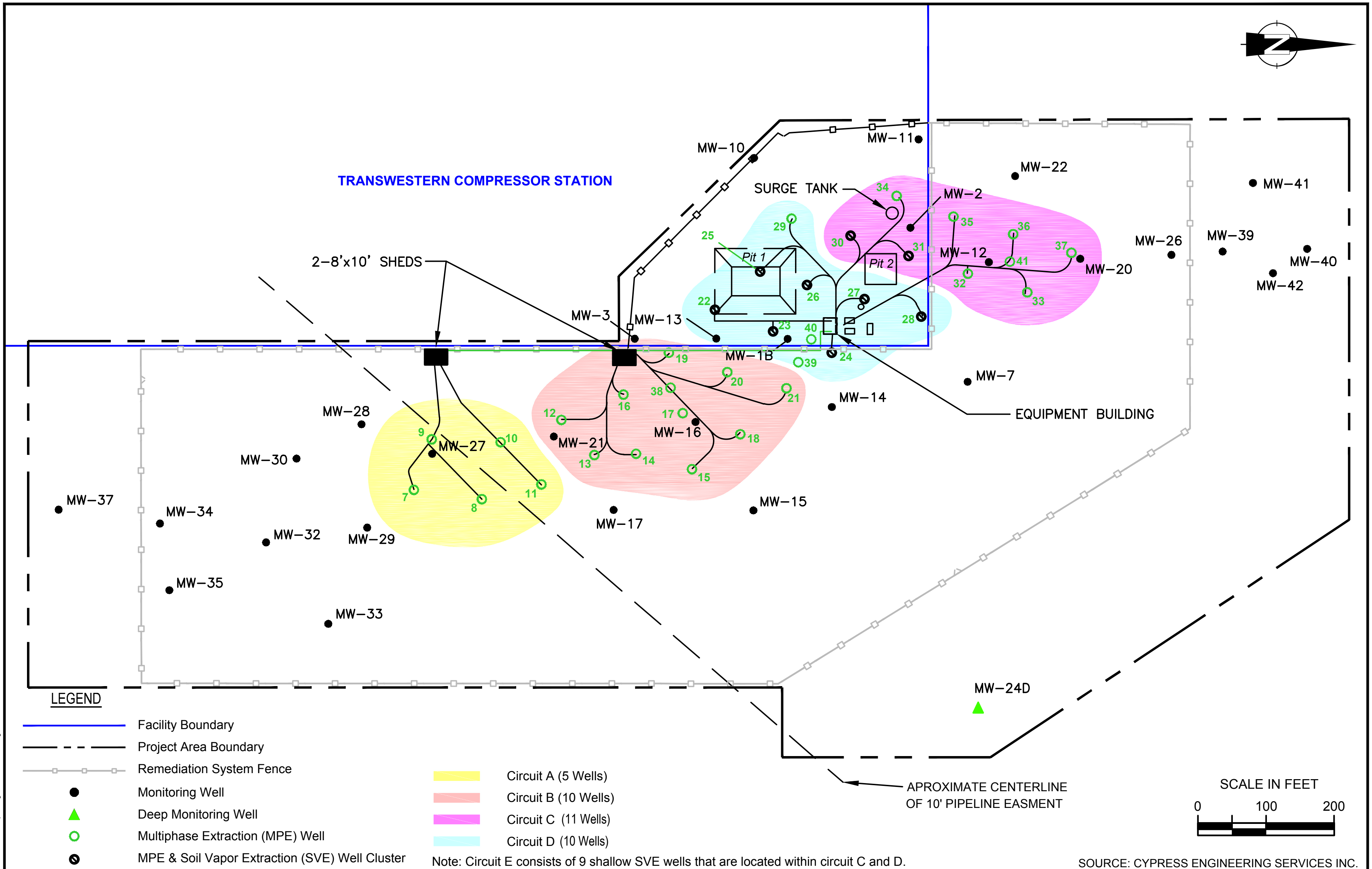

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REPORT OF 2017 GROUNDWATER REMEDIATION ACTIVITIES
TRANSWESTERN PIPELINE COMPANY, LLC
TRANSWESTERN COMPRESSOR STATION No. 9
(ROSWELL COMPRESSOR STATION)
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20180005.00

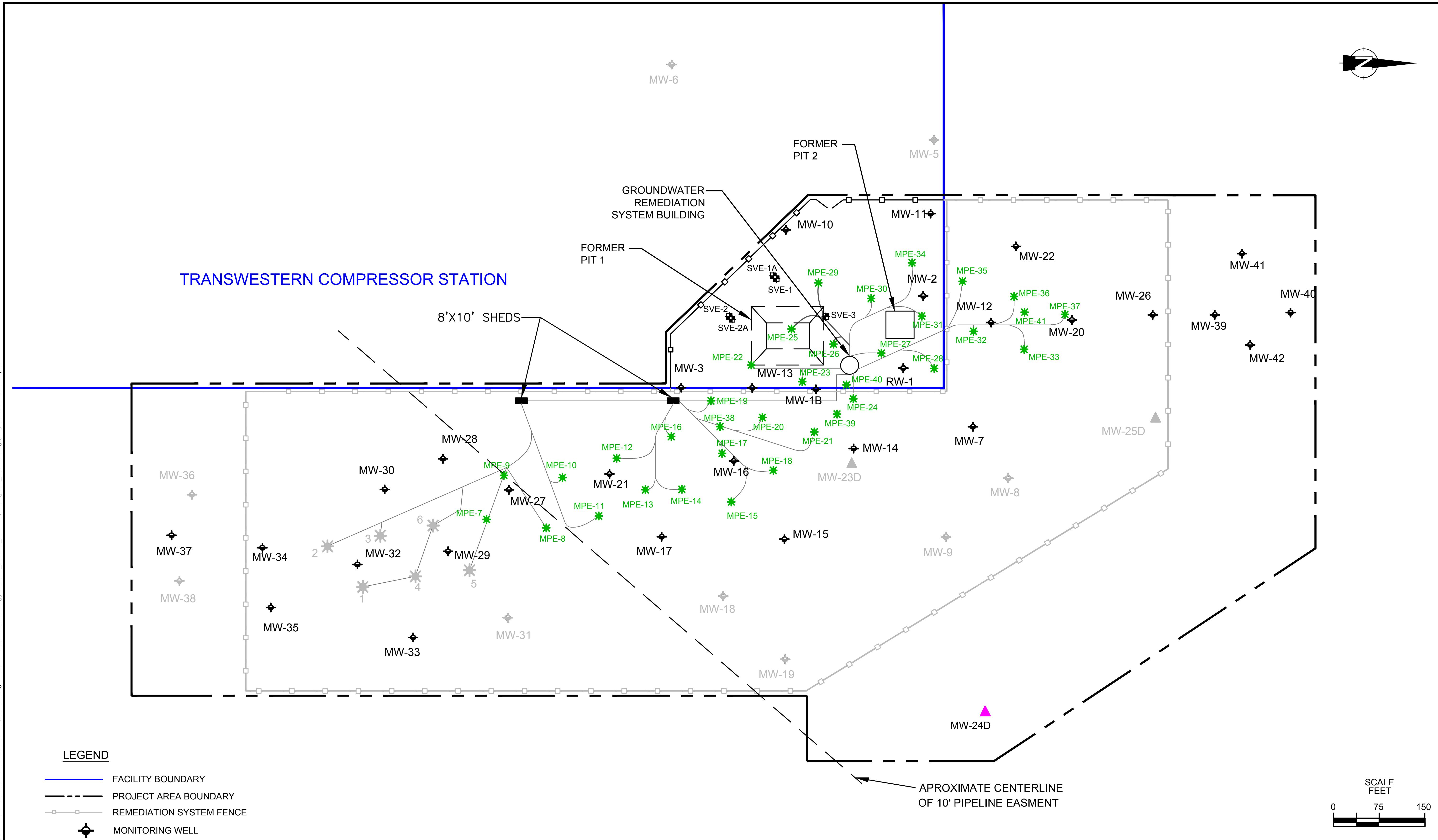
EARTHCON®

EarthCon Consultants, Inc.
1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

REMEDIATION SYSTEM LAYOUT

DRAWN:	CHECKED:	DATE:	FIGURE:
HVP	SD	7/25/18	1-3

Attachment B



SOURCE: CYPRESS ENGINEERING SERVICES INC.

REPORT OF 2017 GROUNDWATER REMEDIATION ACTIVITIES
TRANSWESTERN PIPELINE COMPANY, LLC
TRANSWESTERN COMPRESSOR STATION No. 9
(ROSWELL COMPRESSOR STATION)
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NO. 02.20180005.00

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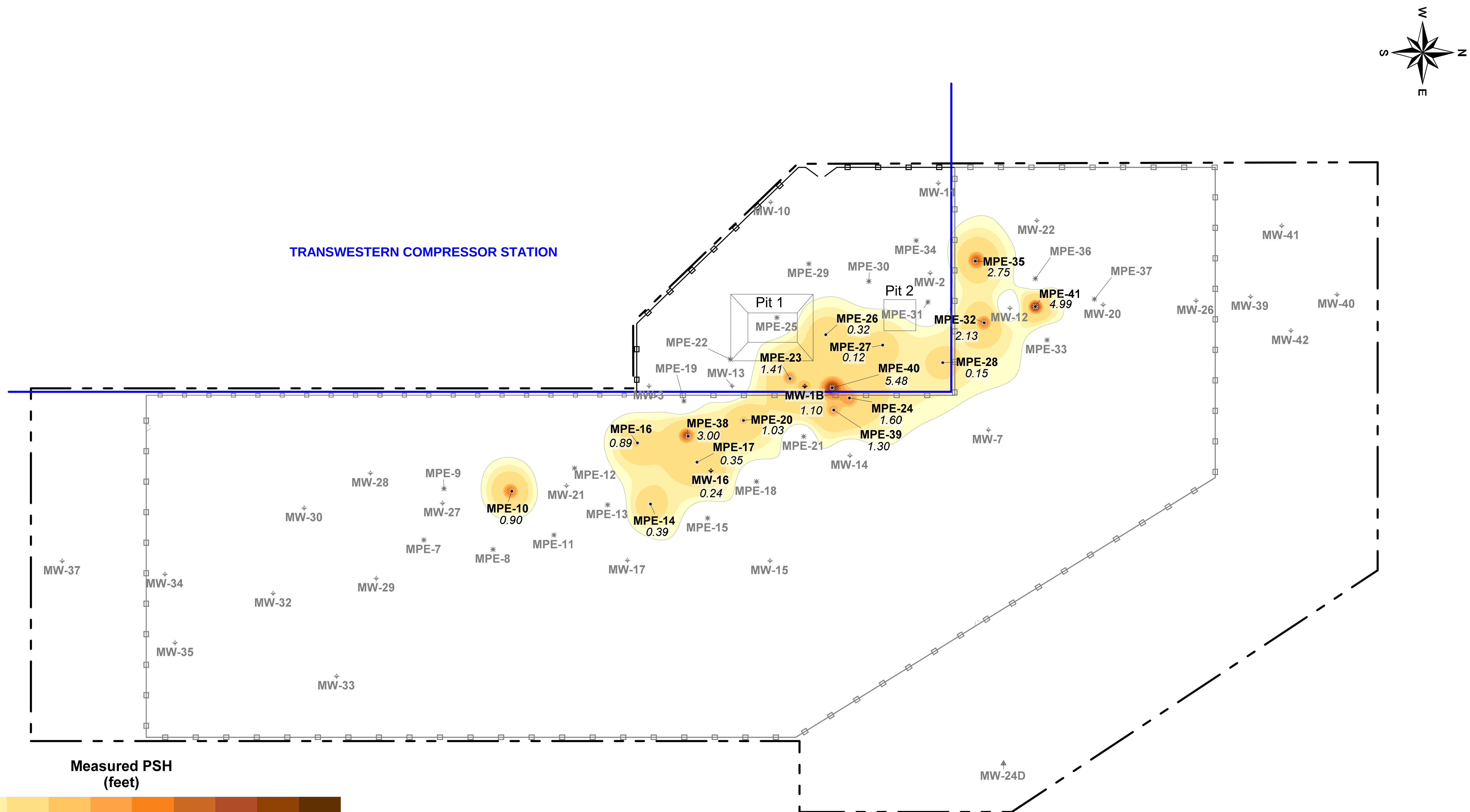
1880 WEST OAK PKWY, BLDG 100, STE 106, MARIETTA, GA, 30062

WELL LOCATIONS

DRAWN:	CHECKED:	DATE:	FIGURE:
HVP	RLA	03/02/2018	3-1

FILE NAME: S:\Premier\Projects\Energy Transfer\Transwestern-Roswell\2017 Report Files\Figures\CAD\Transwestern Energy Transfer_Roswell_2017 Report Figures_recover.dwg (3-1) 06/25/18 15:45 - hpham

Attachment C



Measured PSH
(feet)

0.01 0.02 0.05 0.75 1 1.5 2 2.5 3.5 5

MW-1B ✦ Monitoring Well

1.03 PSH Thickness (feet)

MPE-20 ✱ Multi-Phase Extraction Well

MW-37 ✦ Monitoring Well (No PSH Measured)

MPE-31 ✱ Multi-Phase Extraction Well (No PSH Measured)

LEGEND

Facility Boundary

Project Area Boundary

Remediation System Fence

Notes:

PSH - Phase Separated Hydrocarbons.
Plugged and abandoned monitoring/multi-phase extraction wells not shown.

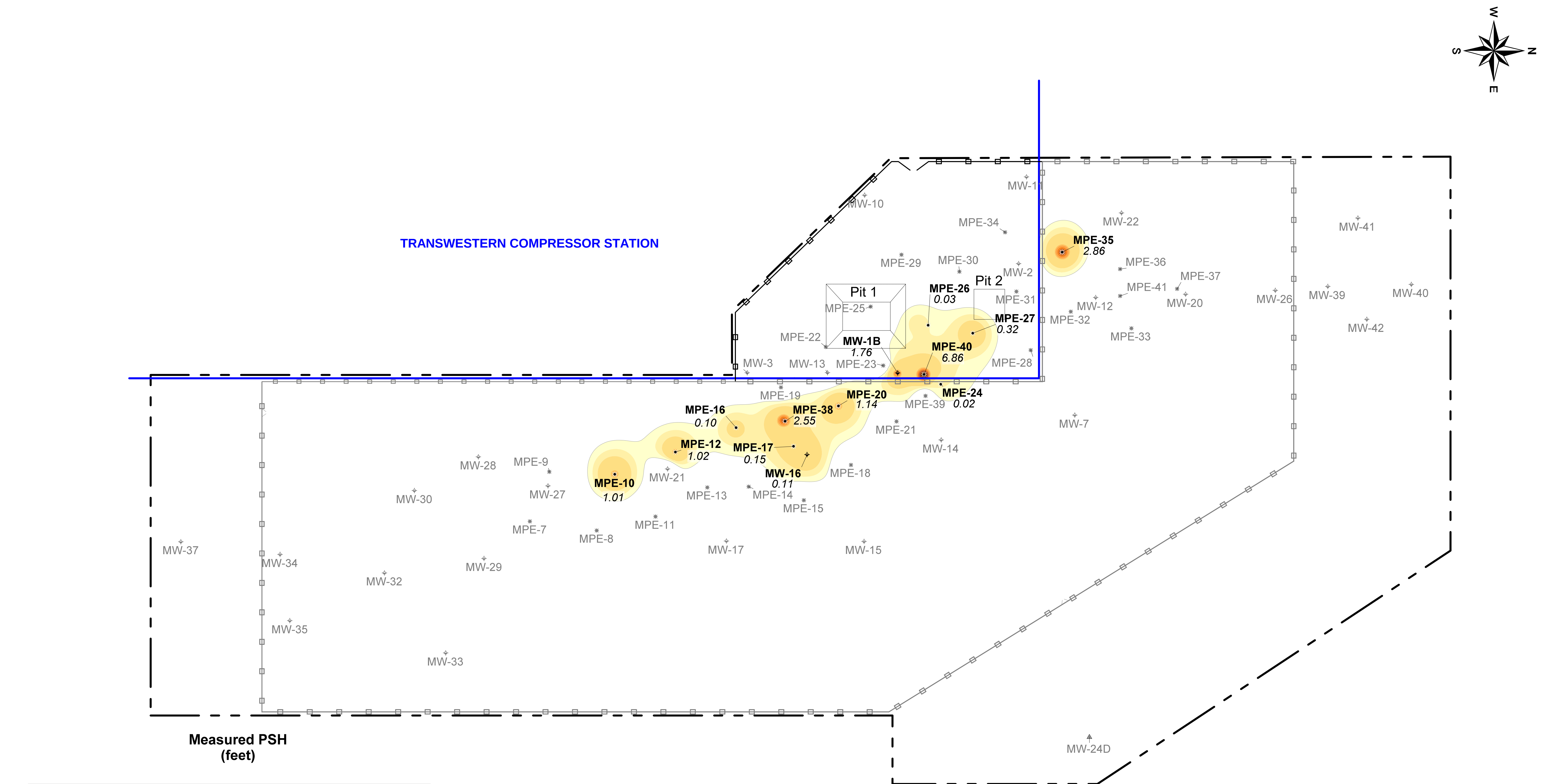
SCALE

0 FT 75 FT 150 FT

TRANSWESTERN PIPELINE COMPANY COMPRESSOR STATION NO. 9 ROSWELL, CHAVES COUNTY, NEW MEXICO PROJ. NO: 02.20180005.00	EARTHCON® EarthCon Consultants Inc. 1880 West Oak Parkway Building 100, Suite 106 Marietta, Georgia 30062	DISTRIBUTION OF PSH IN THE UPPERMOST AQUIFER MAY 2017

DRAWN:	CHECKED:	DATE:	FIGURE:
HVP	RLA	03/18	3-4

FILENAME: PSH thickness May-June 2017_RV1.srf



Measured PSH
(feet)

0.01 0.02 0.05 0.75 1 1.5 2 2.5 3.5 5

LEGEND

Facility Boundary	
Project Area Boundary	
Remediation System Fence	
MW-1B	Monitoring Well
MPE-20	Multi-Phase Extraction Well
MW-37	Monitoring Well (No PSH Measured)
MPE-31	Multi-Phase Extraction Well (No PSH Measured)
1.03	PSH Thickness (feet)

Notes:

PSH - Phase Separated Hydrocarbons.
Plugged and abandoned monitoring/multi-phase extraction wells not shown.

SCALE

0 FT 75 FT 150 FT

TRANSWESTERN PIPELINE COMPANY
COMPRESSOR STATION NO. 9

ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJ. NO: 02.2018005.00

EARTHCON®
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1880 West Oak Parkway
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DISTRIBUTION OF PSH
IN THE UPPERMOST AQUIFER
NOVEMBER 2017

DRAWN:	CHECKED:	DATE:	FIGURE:
HVP	RLA	03/18	3-5

FILENAME: PSH thickness Nov 2017_Rv1.srf

Attachment D

APPENDIX A: Historical Submittal Summary
Transwestern Compressor Station No. 9 - Roswell, NM

Document	Date	Agency
Report of 2012 Groundwater Remediation Activities	March 15, 2013	NMOCD/NMED
Amended Investigation Work Plan and Groundwater Monitoring Plan	March 27, 2013	NMOCD/NMED
Amended Remediation Work Plan and Amended Final Design	May 22, 2013	NMED
Estimated Cost of Work for Corrective Action Financial Assurance	August 30, 2013	NMED
Investigation Report	December 19, 2013	NMOCD/NMED
Soil Vapor Extraction System Shutdown	February 11, 2014	NMOCD
Report of 2013 Groundwater Remediation Activities	March 11, 2014	NMOCD/NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	March 26, 2014	NMED
Comments to March 7, 2014 Letter - Approval of Investigation Report	May 12, 2014	NMED
Notice of No Changes to the Operation and Maintenance (O&M) and Monitoring Plan	May 22, 2014	NMED
Notice of Construction Activities	May 29, 2014	NMED
Revised Groundwater/PSH Recovery System Operation and 2014 System Re-Start	June 20, 2014	NMED
Response to June 24, 2014 Letter	October 7, 2014	NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	October 7, 2014	NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	March 11, 2015	NMED
Report of 2014 Groundwater Remediation Activities	March 23, 2015	NMOCD/NMED
Estimated Cost of Work for Corrective Action Financial Assurance	March 26, 2015	NMED
Notice of Revisions to the Operation and Maintenance (O&M) and Monitoring Plan	May 27, 2015	NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	October 6, 2015	NMED
Stage 2 Abatement Plan	December 3, 2015	NMOCD
Report of 2015 Groundwater Remediation Activities	February 29, 2016	NMOCD/NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	March 14, 2016	MNED
Notice of No Changes to the Operation and Maintenance (O&M) and Monitoring Plan	March 22, 2016	NMOCD/NMED
Report of 2016 Groundwater Remediaion Activities	March 13, 2017	NMOCD/NMED
Notice of Revisions to the Operation and Maintenance (O&M) and Monitoring Plan	March 17, 2017	NMOCD/NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	April 13, 2017	NMED
Notice of SVE System Deactivation	April 21, 2017	NMED
Submittal of Revised Operation and Maintenance and Monitoring (O&MM Plan)	May 26, 2017	NMED
Response to Comments on 2016 Groundwater Remediation Activities Report	June 5, 2017	NMED
Extension Request	October 3, 2017	NMED
Notice of Scheduled Semi-Annual Groundwater Sampling Event	October 10, 2017	NMED
Response to Comments Revised Operation, Maintenance, and Monitoring Plan	October 18, 2017	NMED
Response to Approval with Modifications Comments	December 11, 2017	NMED
Report of 2017 Groundwater Remediation Activities	March 13, 2018	NMOCD/NMED/EPA

Prepared by: DME 7/25/18
Checked by: JKW 7/26/18