Western Refining

WNR LISTED NYSE

August 10, 2018

Randy Bayliss
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Hand-Delivered August 10, 2018

RE: Request for Closure
Former Bloomfield Crude Station
NW/4 of NW/4 of S22 T29N R11W
Bloomfield, New Mexico

Dear Mr. Bayliss:

Western Refining Southwest, Inc. (Western) requested Site Closure and a determination of No Further Action for the Former Bloomfield Crude Station on August 15, 2014. The Oil Conservation Division (OCD) requested two rounds monitoring to confirm ground water conditions prior to closure. This letter discusses the 2017/2018 monitoring results, historical records search, conclusions and request for closure.

2017-2018 Ground Water Monitoring Events

Western performed groundwater monitoring events in November 2017 and May 2018.

Gauging Results

In May 2018, a Non-Aqueous Petroleum Liquid (NAPL) thickness of 0.31 ft. was observed in MW-7. The LNAPL had a distinctive crude oil odor. See Appendix A - Photographs. The gauging results are presented as Figure 6, Table 1 and groundwater elevation vs. time graphs. The area ground water dropped to the lowest level since the monitoring wells were installed. If the source was the former Giant Crude Station storage tank, the presence of NAPL would be expected in MW-2.

Analytical Results

The November 2017 analytical results were non-detect with the exception of a benzene concentration of 0.074 ug/L in MW-2. In May 2018, the analytical results were non-detect with the exception of MW-7. MW-7 was not sampled due to the presence of NAPL. The Analytical reports are presented in Appendix B.

Historical Records Review

Western has maintained that MW-7 was installed as a cross-gradient well and the presence of dissolved hydrocarbons did not fit the site conceptual model. Western requested that the Oil Conservation Division (OCD) investigate the oil and gas wells in the immediate area. Due the presence of NAPL, the OCD online well files were revisited to identify possible crude sources. In the photographs, there appear to be two abandoned oil and gas well markers. The markers are approximately 35 and 50 feet west-southwest of MW-7.

OCD File Review

The OCD files show that several crude wells were located in the immediate area. The files are presented in Appendix C. The most likely source is an abandoned oil well Bishop #3 completed in 1925 at a total depth of 700 ft. The well location generally corresponds to the closest well marker to MW-7. Records indicate that the well was abandoned in 1953. The abandonment consisted well plugs set the bottom of the well and the surface. The annulus from the top of the well plug to the surface plug remained possibly exposed to the subsurface soils until 1982. The well was re-entered and re-abandoned by an OCD contractor. The reason for the re-abandonment was found in the file.

Aerial Photographs

Western obtained historical aerial photographs for review. See Appendix D. In the 1935 and 1953 aerials, there appears to be an unpaved access road to the area of the well markers.

Conclusions

Western concludes that the NAPL occurrence in MW-7 is from a source other than the former Giant Bloomfield Crude Station storage tank.

Closure Request

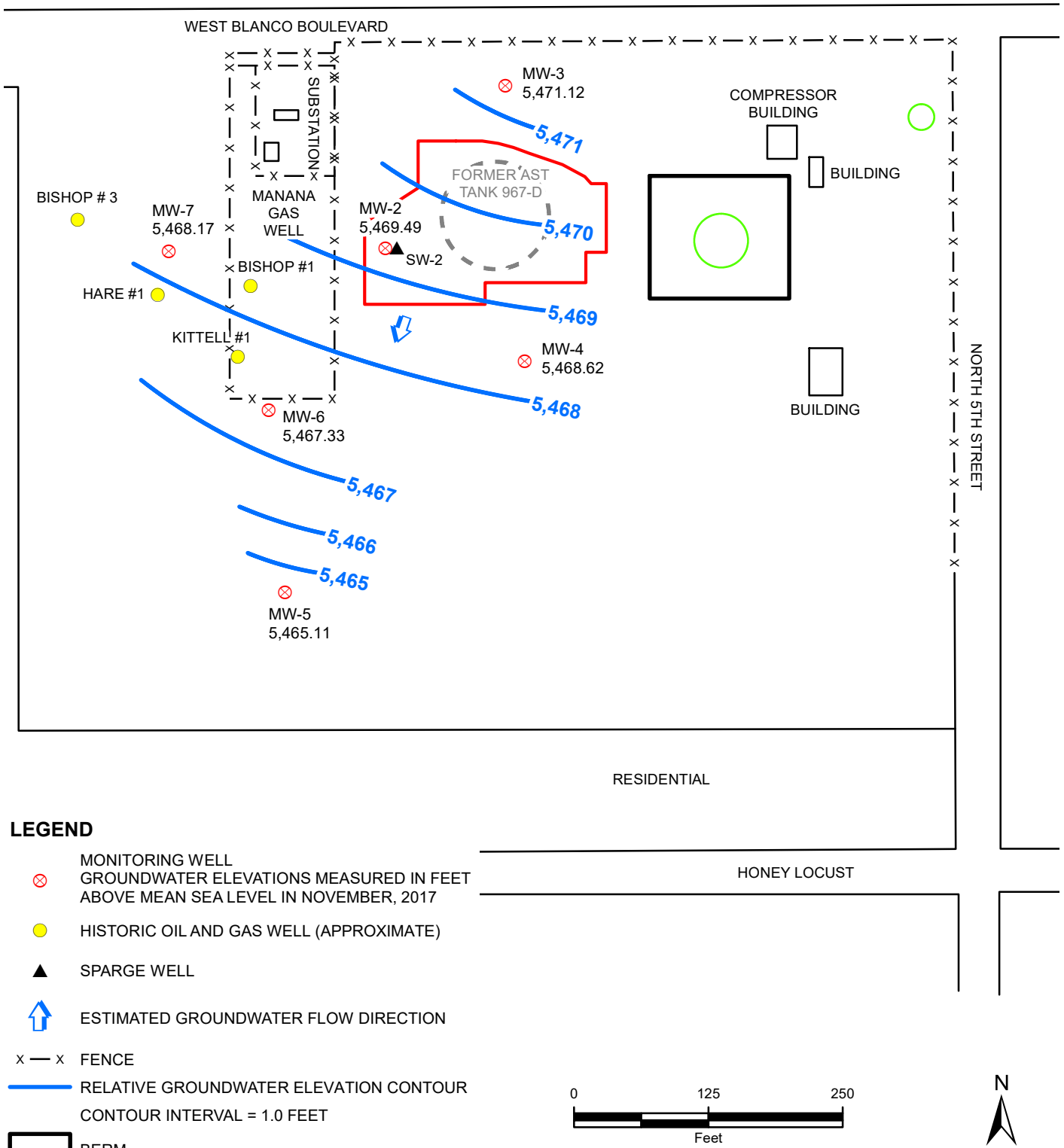
Respectfully, Western requests approval of the 2014 Closure Request and a determination of No Further Action.

If you should have any questions or require additional information, please contact me at 915-534-1483 or at Allen.S.Hains@andeavor.com.

Sincerely,

Allen S. Hains
Remediation Projects Manager
Western Refining Southwest, Inc.

Figures



LEGEND

- MONITORING WELL GROUNDWATER ELEVATIONS MEASURED IN FEET ABOVE MEAN SEA LEVEL IN NOVEMBER, 2017
- HISTORIC OIL AND GAS WELL (APPROXIMATE)
- SPARGE WELL
- ESTIMATED GROUNDWATER FLOW DIRECTION
- x — x FENCE
- RELATIVE GROUNDWATER ELEVATION CONTOUR
  CONTOUR INTERVAL = 1.0 FEET
- BERM
- FORMER EXCAVATION PERIMETER
- ABOVEGROUND STORAGE TANK (AST)
- FORMER AST

0 125 250
Feet

N

NOVEMBER 2017 GROUNDWATER ELEVATION MAP BLOOMFIELD CRUDE STATION NWNW SEC 22 T29N R11W SAN JUAN COUNTY, NEW MEXICO

WESTERN REFINING, SOUTHWEST, INC.

P:\Western Refining\GIS\MXD\WR1007 BLOOMFIELD CRUDE\WR1007_BLOOMFIELD_FIG06_2012_Q3.mxd

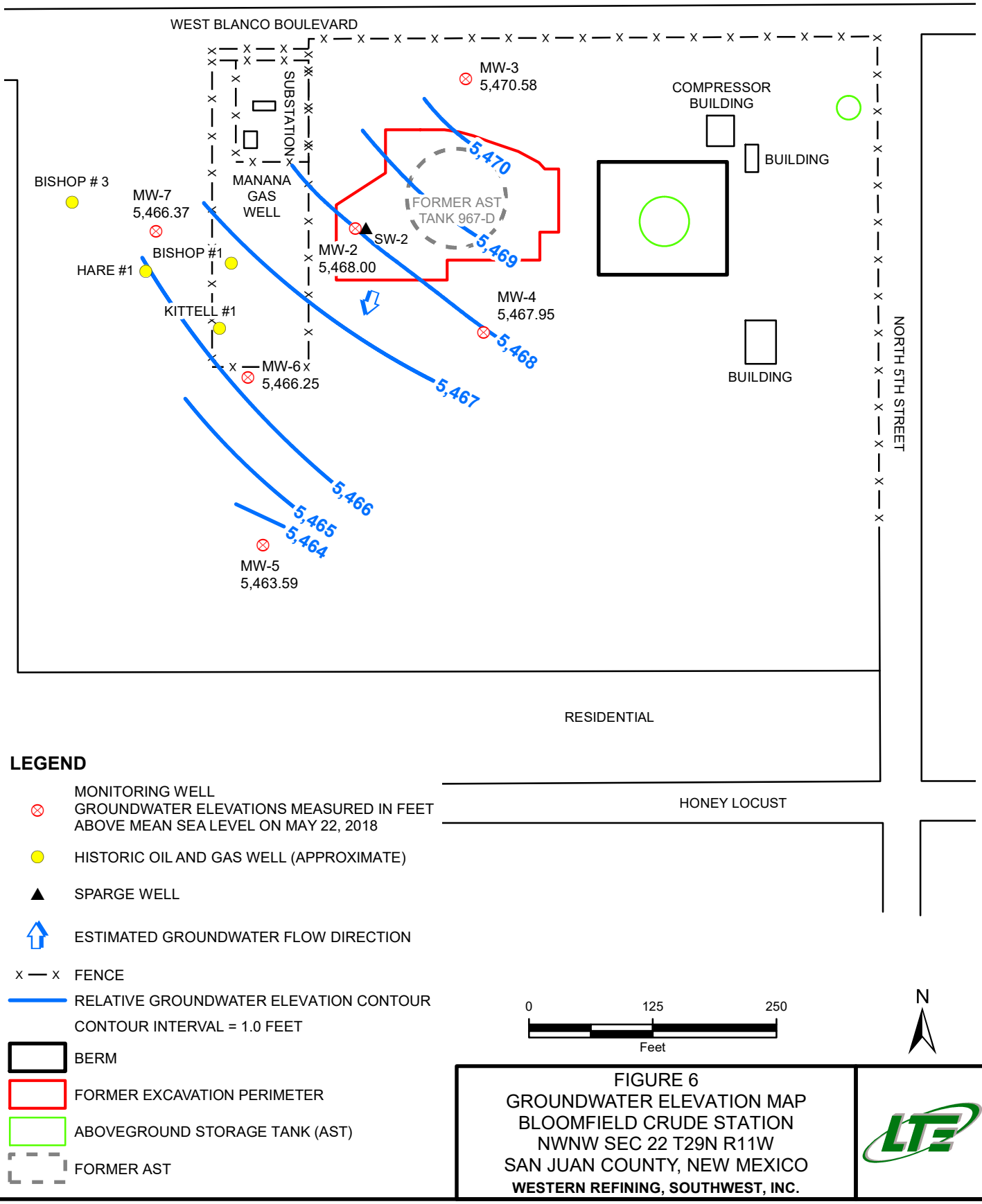


FIGURE 6
GROUNDWATER ELEVATION MAP
BLOOMFIELD CRUDE STATION
NWNW SEC 22 T29N R11W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING, SOUTHWEST, INC.

P:\Western Refining\GIS\MXD\WR1007 BLOOMFIELD CRUDE\WR1007_BLOOMFIELD_FIG06_2012_Q3.mxd

Tables

(and Graphs)

Table 1
Groundwater Elevation Data

Bloomfield Crude Station
Bloomfield, New Mexico
Western Refining Southwest, Inc.

Well Number	Date	Wellhead Elevation (feet)	Potentiometric Elevation	Total Depth (feet)	Depth to Water (feet BTOC)	Product Thickness (feet)
MW-2	5/2001	5485.33	*5470.07	18.68	15.26	0.56
	7/2001	5485.33	*5469.52	18.68	15.81	0.84
	5/2002	5485.33	*5470.39	18.68	15.51	0.81
	1/2003	5485.33	5472.80	18.68	12.53	
	1/2004	5485.33	*5471.12	18.68	14.24	0.04
	1/2005	5485.33	5470.81	18.68	14.52	
	1/2006	5485.33	5470.66	18.68	14.67	
	1/2007	5485.33	5472.70	18.68	12.63	
	1/2008	5485.33	5473.52	18.68	11.81	
	1/2009	5485.33	5473.58	18.68	11.75	
	1/2010	5485.33	5473.13	18.68	12.20	
	1/2011	5485.33	5472.71	18.68	12.62	
	1/2012	5485.33	5472.92	18.68	12.41	
	11/2017	5485.33	5469.49	18.68	15.84	
	1/2018	5485.33	5468.00	18.68	17.33	
MW-3	5/2001	5488.61	5473.01	18.69	15.60	
	7/2001	5488.61	5472.67	18.69	15.94	
	5/2002	5488.61	5473.48	18.69	15.13	
	1/2003	5488.61	5475.72	18.69	12.89	
	1/2004	5488.61	5473.99	18.69	14.62	
	1/2005	5488.61	5472.63	18.69	15.98	
	1/2006	5488.61	5474.54	18.69	14.07	
	1/2007	5488.61	5474.69	18.69	13.92	
	1/2008	5488.61	5476.53	18.69	12.08	
	1/2009	5488.61	5476.44	18.69	12.17	
	1/2010	5488.61	5475.82	18.69	12.79	
	1/2011	5488.61	5475.56	18.69	13.05	
	1/2012	5488.61	5475.36	18.69	13.25	
	11/2017	5488.61	5471.12	18.69	17.49	
	1/2018	5488.61	5470.58	18.69	18.03	

Table 1
Groundwater Elevation Data

Bloomfield Crude Station
Bloomfield, New Mexico
Western Refining Southwest, Inc.

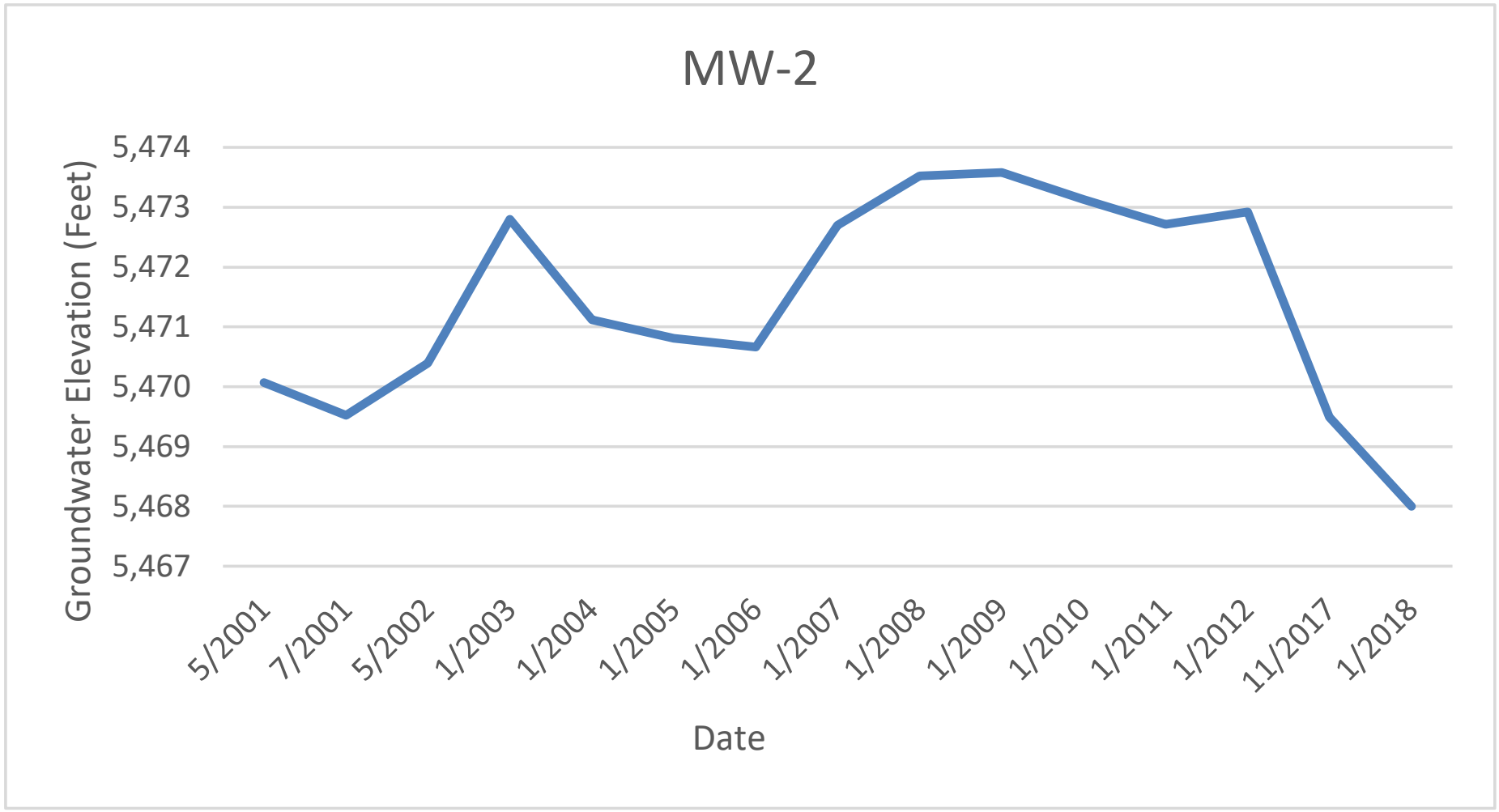
Well Number	Date	Wellhead Elevation (feet)	Potentiometric Elevation	Total Depth (feet)	Depth to Water (feet BTOC)	Product Thickness (feet)
MW-4	5/2001	5486.18	5470.05	26.15	16.13	
	7/2001	5486.18	5469.75	26.15	16.43	
	5/2002	5486.18	5470.64	26.15	15.54	
	1/2003	5486.18	5472.29	26.15	13.89	
	1/2004	5486.18	5471.10	26.15	15.08	
	1/2005	5486.18	5470.56	26.15	15.62	
	1/2006	5486.18	5471.39	26.15	14.79	
	1/2007	5486.18	5472.03	26.15	14.15	
	1/2008	5486.18	5472.89	26.15	13.29	
	1/2009	5486.18	5472.72	26.15	13.46	
	1/2010	5486.18	5472.07	26.15	14.11	
	1/2011	5486.18	5471.08	26.15	15.10	
	1/2012	5486.18	5471.60	26.15	14.58	
	11/2017	5486.18	5468.62	26.15	17.56	
	1/2018	5486.18	5467.95	26.15	18.23	
MW-5	5/2001	5481.61	5465.25	24.50	16.36	
	7/2001	5481.61	5465.25	24.50	16.36	
	5/2002	5481.61	5465.87	24.50	15.74	
	1/2003	5481.61	5467.64	24.50	13.97	
	1/2004	5481.61	5466.44	24.50	15.17	
	1/2005	5481.61	5465.70	24.50	15.91	
	1/2006	5481.61	5466.40	24.50	15.21	
	1/2007	5481.61	5467.39	24.50	14.22	
	1/2008	5481.61	5468.30	24.50	13.31	
	1/2009	5481.61	5468.23	24.50	13.38	
	1/2010	5481.61	5467.98	24.50	13.63	
	1/2011	5481.61	5468.21	24.50	13.40	
	1/2012	5481.61	5468.09	24.50	13.52	
	11/2017	5481.61	5465.11	24.50	16.50	
	1/2018	5481.61	5463.59	24.50	18.02	

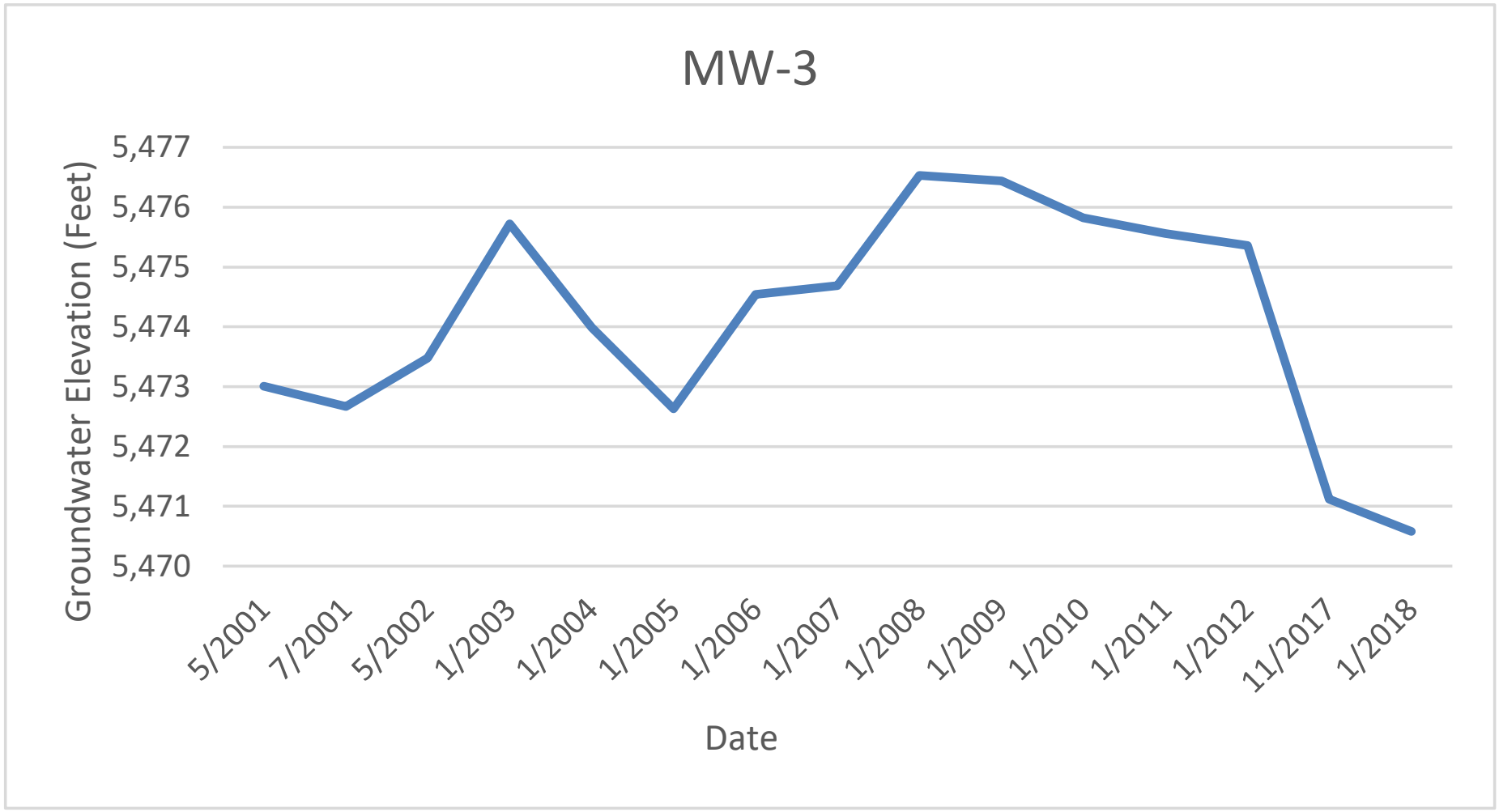
Table 1
Groundwater Elevation Data

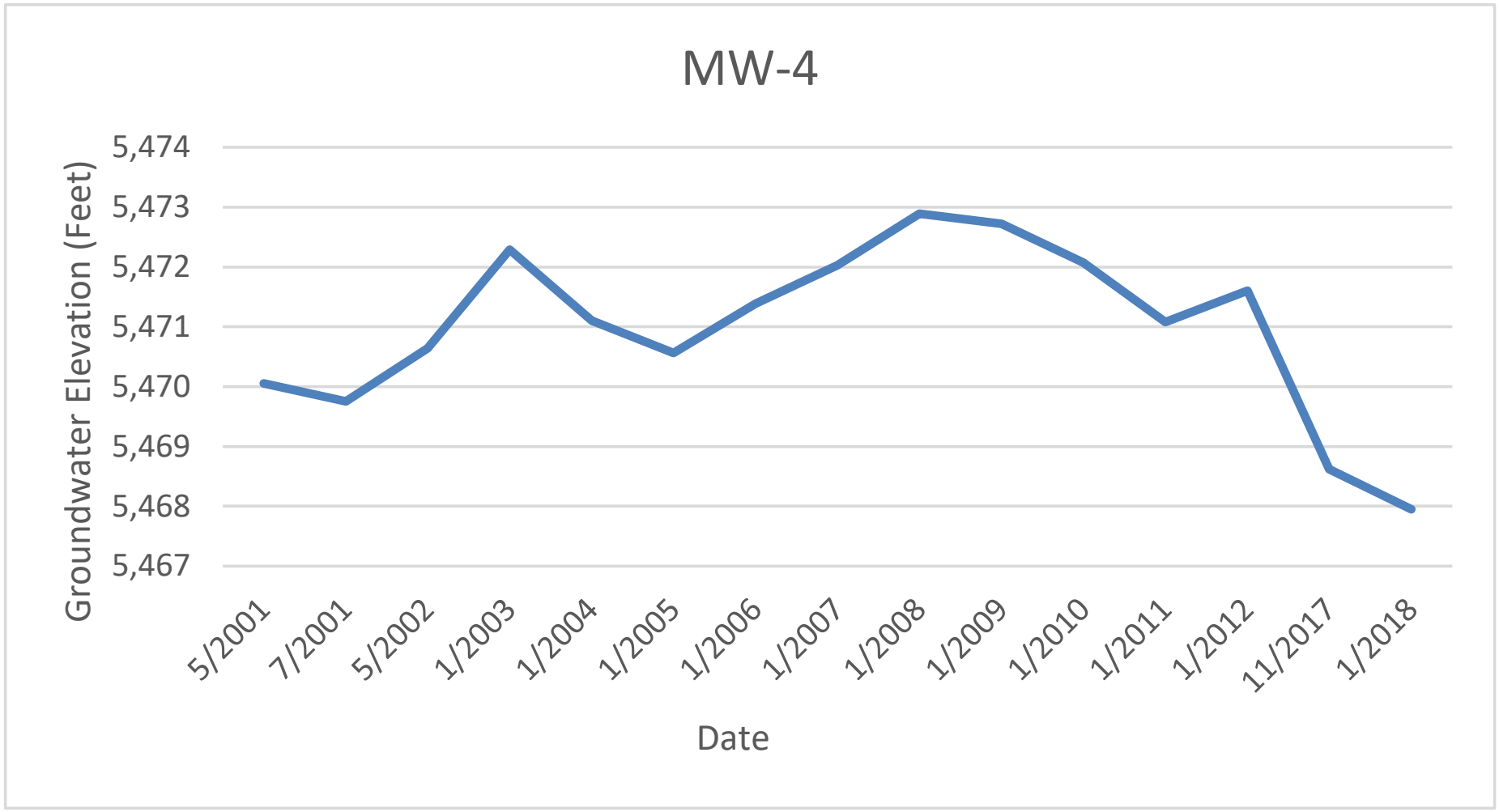
Bloomfield Crude Station
Bloomfield, New Mexico
Western Refining Southwest, Inc.

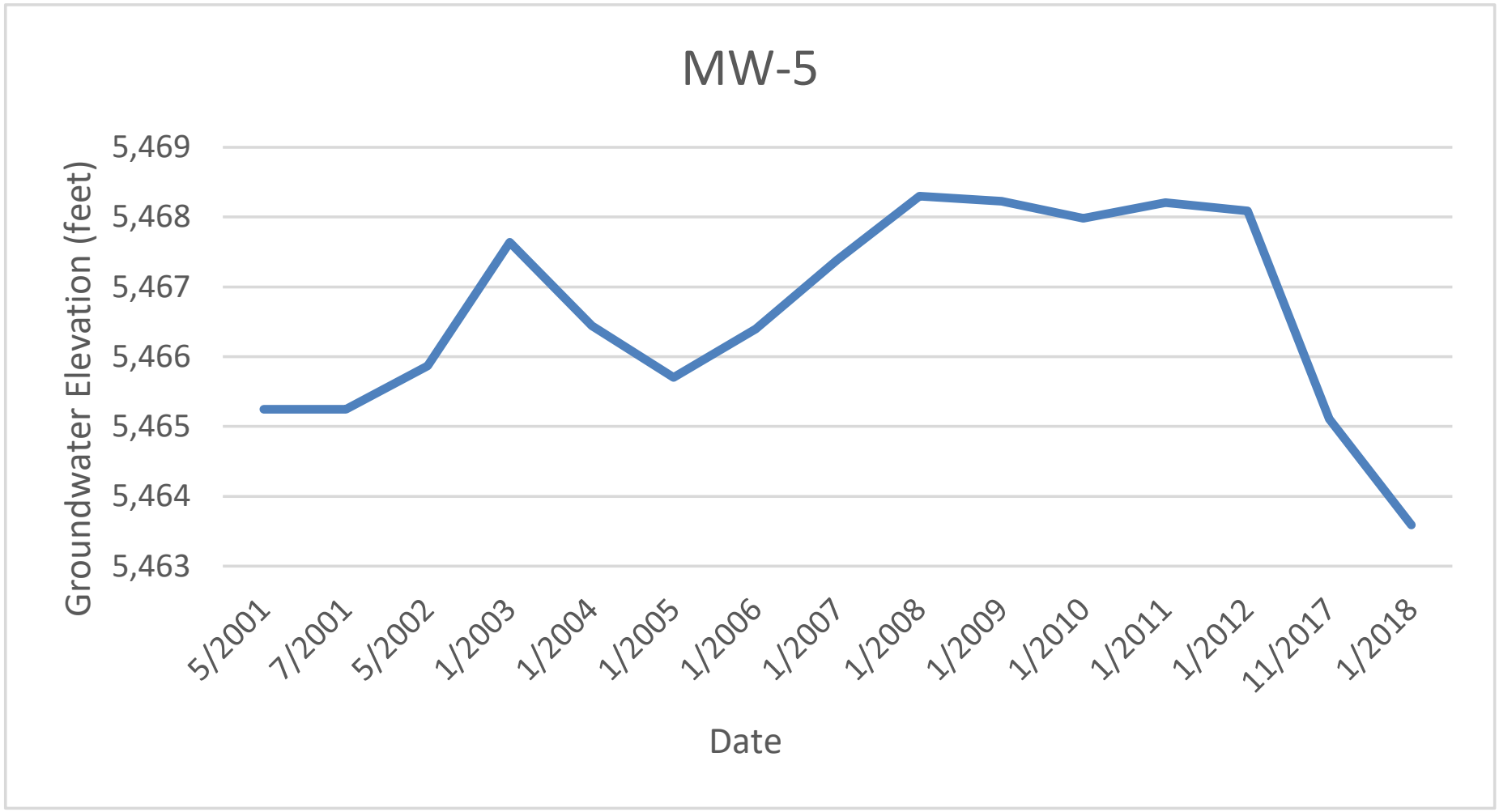
Well Number	Date	Wellhead Elevation (feet)	Potentiometric Elevation	Total Depth (feet)	Depth to Water (feet BTOC)	Product Thickness (feet)
MW-6	5/2001	5486.18	5468.00	29.37	18.18	
	7/2001	5486.18	5467.88	29.37	18.30	
	5/2002	5486.18	5468.13	29.37	18.05	
	1/2003	5486.18	5470.60	29.37	15.58	
	1/2004	5486.18	5469.20	29.37	16.98	
	1/2005	5486.18	5468.51	29.37	17.67	
	1/2006	5486.18	5469.30	29.37	16.88	
	1/2007	5486.18	5470.26	29.37	15.92	
	1/2008	5486.18	5471.15	29.37	15.03	
	1/2009	5486.18	5471.29	29.37	14.89	
	1/2010	5486.18	5470.97	29.37	15.21	
	1/2011	5486.18	5471.22	29.37	14.96	
	1/2012	5486.18	5471.96	29.37	14.22	
	11/2017	5486.18	5467.33	29.37	18.85	
	1/2018	5486.18	5466.25	29.37	19.93	
MW-7	5/2001	5491.86	5468.09	32.79	23.77	
	7/2001	5491.86	5468.31	32.79	23.55	
	6/2002	5491.86	5469.48	32.79	22.38	
	1/2003	5491.86	5471.68	32.79	20.18	
	1/2004	5491.86	5469.40	32.79	22.46	
	1/2005	5491.86	5469.36	32.79	22.50	
	1/2006	5491.86	5469.91	32.79	21.95	
	1/2007	5491.86	5471.42	32.79	20.44	
	1/2008	5491.86	5472.17	32.79	19.69	
	1/2009	5491.86	5472.33	32.79	19.53	
	1/2010	5491.86	5472.20	32.79	19.66	
	1/2011	5491.86	5472.56	32.79	19.30	
	1/2012	5491.86	5472.26	32.79	19.60	
	11/2017	5491.86	5468.17	32.79	23.69	
	1/2018	5491.86	*5466.37	32.79	25.74	0.31

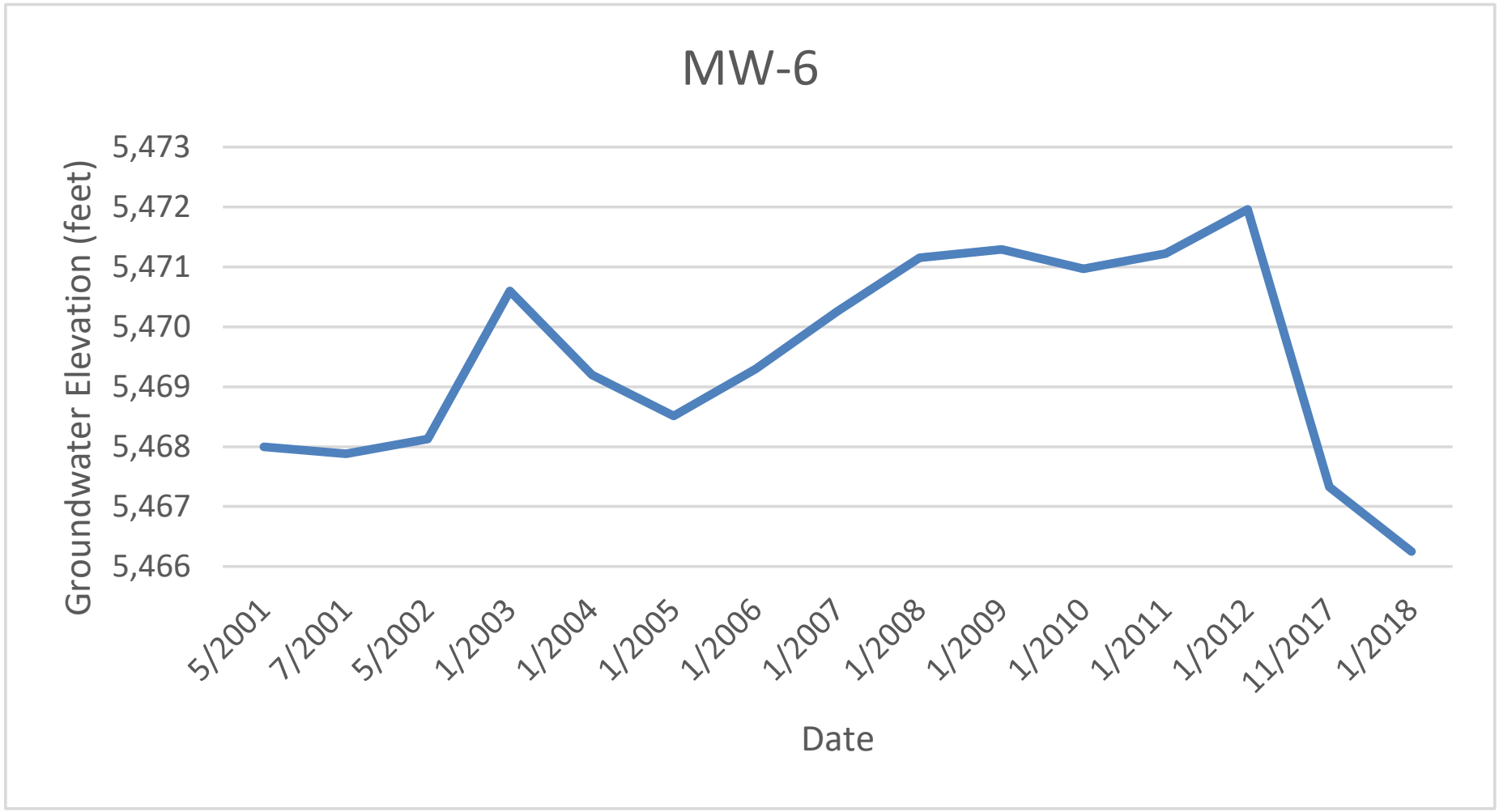
NOTES
*GWEL - Groundwater Surface Elevation adusted for product depth using
0.8 g/mL unless noted otherwise
BTOC - Below top of casing

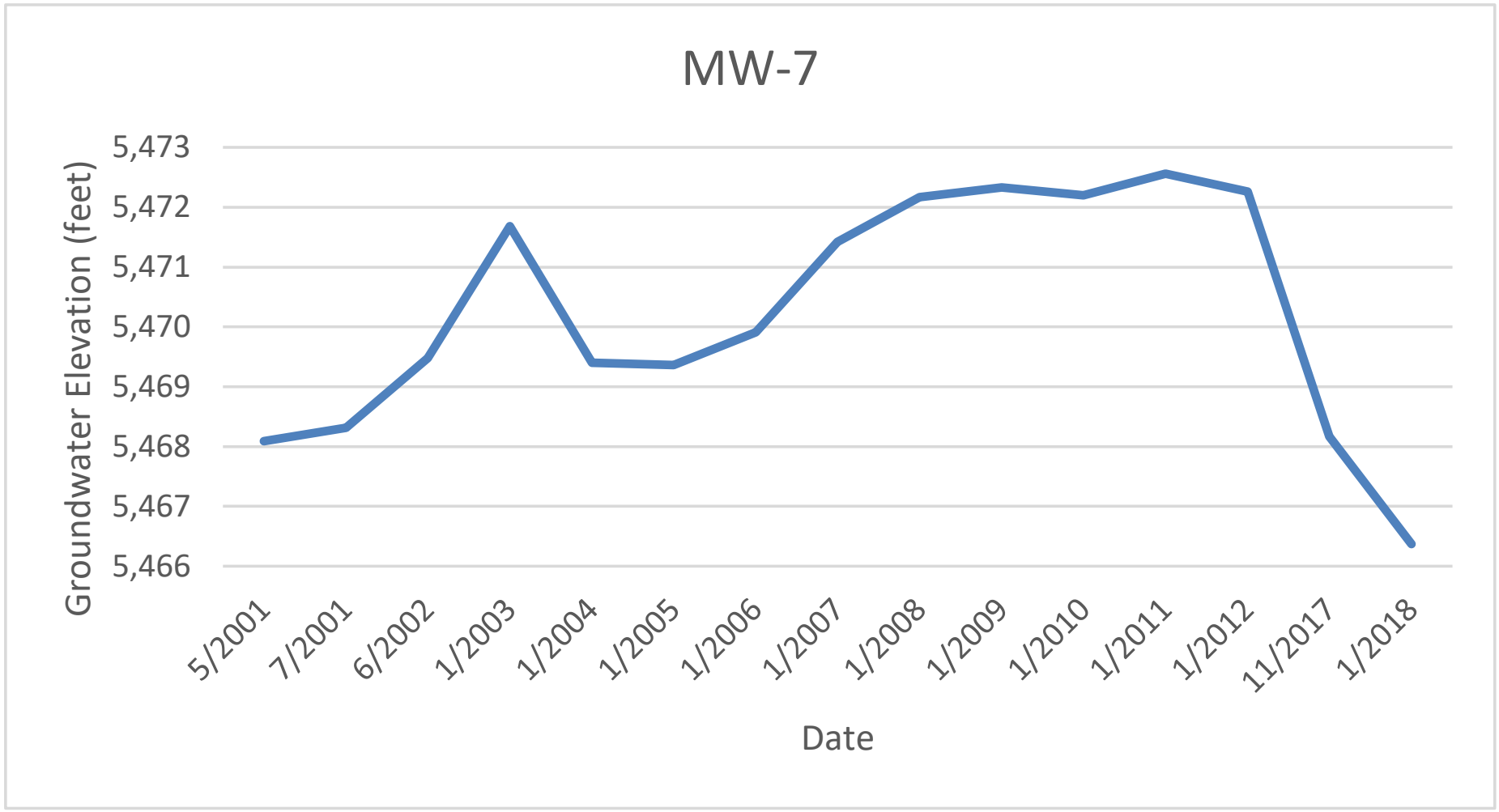

MW-2
Groundwater Elevation (Feet)
5,474
5,473
5,472
5,471
5,470
5,469
5,468
5,467
5/2001
7/2001
5/2002
1/2003
1/2004
1/2005
1/2006
1/2007
1/2008
1/2009
1/2010
1/2011
1/2012
11/2017
1/2018
Date


MW-3
Groundwater Elevation (Feet)
5,477
5,476
5,475
5,474
5,473
5,472
5,471
5,470
5/2001
7/2001
5/2002
1/2003
1/2004
1/2005
1/2006
1/2007
1/2008
1/2009
1/2010
1/2011
1/2012
11/2017
1/2018
Date


MW-4
Groundwater Elevation (Feet)
5,474
5,473
5,472
5,471
5,470
5,469
5,468
5,467
5/2001
7/2001
5/2002
1/2003
1/2004
1/2005
1/2006
1/2007
1/2008
1/2009
1/2010
1/2011
1/2012
11/2017
1/2018
Date


MW-5
Groundwater Elevation (feet)
5,469
5,468
5,467
5,466
5,465
5,464
5,463
5/2001
7/2001
5/2002
1/2003
1/2004
1/2005
1/2006
1/2007
1/2008
1/2009
1/2010
1/2011
1/2012
11/2017
1/2018
Date


MW-6
Groundwater Elevation (feet)
5,473
5,472
5,471
5,470
5,469
5,468
5,467
5,466
5/2001
7/2001
5/2002
1/2003
1/2004
1/2005
1/2006
1/2007
1/2008
1/2009
1/2010
1/2011
1/2012
11/2017
1/2018
Date


MW-7
Groundwater Elevation (feet)
5,473
5,472
5,471
5,470
5,469
5,468
5,467
5,466
5/2001
7/2001
6/2002
1/2003
1/2004
1/2005
1/2006
1/2007
1/2008
1/2009
1/2010
1/2011
1/2012
11/2017
1/2018
Date

Appendix A
Photographs

Southwest View of MW-7 Bailer with Crude Oil
Two Petroleum Well Markers in Background

Northeast View of Two Petroleum Well Markers
MW-7 Concrete Pad in Background

Appendix B
Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 30, 2017

Devin Hencmann

Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4135
FAX (505) 632-3911

RE: Former Bloomfield Crude Station OrderNo.: 1711995

Dear Devin Hencmann:

Hall Environmental Analysis Laboratory received 6 sample(s) on 11/18/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **1711995**
Date Reported: **11/30/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Former Bloomfield Crude Station
Lab ID: 1711995-001A

Client Sample ID: MW-2
Collection Date: 11/16/2017 4:55:00 PM
Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **RAA**	
Benzene	0.074	0.062	1.0	JP	µg/L	1	11/28/2017 1:00:00 PM	SL4737
Toluene	ND	0.064	1.0	P	µg/L	1	11/28/2017 1:00:00 PM	SL4737
Ethylbenzene	ND	0.093	1.0	P	µg/L	1	11/28/2017 1:00:00 PM	SL4737
Xylenes, Total	ND	0.32	1.5	P	µg/L	1	11/28/2017 1:00:00 PM	SL4737
Surr: 1,2-Dichloroethane-d4	97.0	0	70-130	P	%Rec	1	11/28/2017 1:00:00 PM	SL4737
Surr: 4-Bromofluorobenzene	97.9	0	70-130	P	%Rec	1	11/28/2017 1:00:00 PM	SL4737
Surr: Dibromofluoromethane	103	0	70-130	P	%Rec	1	11/28/2017 1:00:00 PM	SL4737
Surr: Toluene-d8	96.2	0	70-130	P	%Rec	1	11/28/2017 1:00:00 PM	SL4737

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Client Sample ID: MW-3
Project: Former Bloomfield Crude Station
Collection Date: 11/16/2017 11:30:00 AM
Lab ID: 1711995-002A
Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **RAA**	
Benzene	ND	0.062	1.0	P	µg/L	1	11/27/2017 6:40:00 PM	R47346
Toluene	ND	0.064	1.0	P	µg/L	1	11/27/2017 6:40:00 PM	R47346
Ethylbenzene	ND	0.093	1.0	P	µg/L	1	11/27/2017 6:40:00 PM	R47346
Xylenes, Total	ND	0.32	1.5	P	µg/L	1	11/27/2017 6:40:00 PM	R47346
Surr: 1,2-Dichloroethane-d4	107	0	70-130	P	%Rec	1	11/27/2017 6:40:00 PM	R47346
Surr: 4-Bromofluorobenzene	96.7	0	70-130	P	%Rec	1	11/27/2017 6:40:00 PM	R47346
Surr: Dibromofluoromethane	115	0	70-130	P	%Rec	1	11/27/2017 6:40:00 PM	R47346
Surr: Toluene-d8	97.4	0	70-130	P	%Rec	1	11/27/2017 6:40:00 PM	R47346

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Client Sample ID: MW-4
Project: Former Bloomfield Crude Station
Collection Date: 11/16/2017 9:50:00 AM
Lab ID: 1711995-003A
Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **RAA**	
Benzene	ND	0.062	1.0	P	µg/L	1	11/27/2017 7:04:00 PM	R47346
Toluene	ND	0.064	1.0	P	µg/L	1	11/27/2017 7:04:00 PM	R47346
Ethylbenzene	ND	0.093	1.0	P	µg/L	1	11/27/2017 7:04:00 PM	R47346
Xylenes, Total	ND	0.32	1.5	P	µg/L	1	11/27/2017 7:04:00 PM	R47346
Surr: 1,2-Dichloroethane-d4	107	0	70-130	P	%Rec	1	11/27/2017 7:04:00 PM	R47346
Surr: 4-Bromofluorobenzene	99.1	0	70-130	P	%Rec	1	11/27/2017 7:04:00 PM	R47346
Surr: Dibromofluoromethane	116	0	70-130	P	%Rec	1	11/27/2017 7:04:00 PM	R47346
Surr: Toluene-d8	96.5	0	70-130	P	%Rec	1	11/27/2017 7:04:00 PM	R47346

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Client Sample ID: MW-5
Project: Former Bloomfield Crude Station
Collection Date: 11/16/2017 12:35:00 PM
Lab ID: 1711995-004A
Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **RAA**	
Benzene	ND	0.062	1.0		µg/L	1	11/27/2017 7:28:00 PM	R47346
Toluene	ND	0.064	1.0		µg/L	1	11/27/2017 7:28:00 PM	R47346
Ethylbenzene	ND	0.093	1.0		µg/L	1	11/27/2017 7:28:00 PM	R47346
Xylenes, Total	ND	0.32	1.5		µg/L	1	11/27/2017 7:28:00 PM	R47346
Surr: 1,2-Dichloroethane-d4	107	0	70-130		%Rec	1	11/27/2017 7:28:00 PM	R47346
Surr: 4-Bromofluorobenzene	97.3	0	70-130		%Rec	1	11/27/2017 7:28:00 PM	R47346
Surr: Dibromofluoromethane	115	0	70-130		%Rec	1	11/27/2017 7:28:00 PM	R47346
Surr: Toluene-d8	97.4	0	70-130		%Rec	1	11/27/2017 7:28:00 PM	R47346

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Client Sample ID: MW-6
Project: Former Bloomfield Crude Station
Collection Date: 11/16/2017 1:20:00 PM
Lab ID: 1711995-005A
Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **RAA**	
Benzene	ND	0.062	1.0	P	µg/L	1	11/27/2017 7:52:00 PM	R47346
Toluene	ND	0.064	1.0	P	µg/L	1	11/27/2017 7:52:00 PM	R47346
Ethylbenzene	ND	0.093	1.0	P	µg/L	1	11/27/2017 7:52:00 PM	R47346
Xylenes, Total	ND	0.32	1.5	P	µg/L	1	11/27/2017 7:52:00 PM	R47346
Surr: 1,2-Dichloroethane-d4	109	0	70-130	P	%Rec	1	11/27/2017 7:52:00 PM	R47346
Surr: 4-Bromofluorobenzene	98.4	0	70-130	P	%Rec	1	11/27/2017 7:52:00 PM	R47346
Surr: Dibromofluoromethane	119	0	70-130	P	%Rec	1	11/27/2017 7:52:00 PM	R47346
Surr: Toluene-d8	96.2	0	70-130	P	%Rec	1	11/27/2017 7:52:00 PM	R47346

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Former Bloomfield Crude Station
Lab ID: 1711995-006A

Client Sample ID: MW-7
Collection Date: 11/16/2017 4:35:00 PM
Matrix: Aqueous

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: **RAA**	
Benzene	0.64	0.31	5.0	JP	µg/L	5	11/28/2017 2:12:00 PM	SL4737
Toluene	ND	0.32	5.0	P	µg/L	5	11/28/2017 2:12:00 PM	SL4737
Ethylbenzene	75	0.47	5.0	P	µg/L	5	11/28/2017 2:12:00 PM	SL4737
Xylenes, Total	330	1.6	7.5	P	µg/L	5	11/28/2017 2:12:00 PM	SL4737
Surr: 1,2-Dichloroethane-d4	94.1	0	70-130	P	%Rec	5	11/28/2017 2:12:00 PM	SL4737
Surr: 4-Bromofluorobenzene	95.2	0	70-130	P	%Rec	5	11/28/2017 2:12:00 PM	SL4737
Surr: Dibromofluoromethane	99.4	0	70-130	P	%Rec	5	11/28/2017 2:12:00 PM	SL4737
Surr: Toluene-d8	100	0	70-130	P	%Rec	5	11/28/2017 2:12:00 PM	SL4737

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711995**

30-Nov-17

Client: Western Refining Southwest, Inc.

Project: Former Bloomfield Crude Station

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **R47346**	RunNo: **47346**
Prep Date:	Analysis Date: **11/27/2017**	SeqNo: **1510586** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.8		10.00		97.6	70	130			

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R47346**	RunNo: **47346**
Prep Date:	Analysis Date: **11/27/2017**	SeqNo: **1510797** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

Sample ID **1711995-001AMS**	SampType: **MS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-2**	Batch ID: **SL47378**	RunNo: **47378**
Prep Date:	Analysis Date: **11/28/2017**	SeqNo: **1511624** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			P
Toluene	19	1.0	20.00	0	94.5	70	130			P
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.2	70	130			P
Surr: 4-Bromofluorobenzene	9.7		10.00		97.2	70	130			P
Surr: Dibromofluoromethane	10		10.00		102	70	130			P
Surr: Toluene-d8	9.6		10.00		95.8	70	130			P

Sample ID **1711995-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-2**	Batch ID: **SL47378**	RunNo: **47378**
Prep Date:	Analysis Date: **11/28/2017**	SeqNo: **1511626** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130	200	20	RP
Toluene	19	1.0	20.00	0	93.3	70	130	200	20	RP

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711995**

30-Nov-17

Client: Western Refining Southwest, Inc.

Project: Former Bloomfield Crude Station

Sample ID **1711995-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-2**	Batch ID: **SL47378**	RunNo: **47378**
Prep Date:	Analysis Date: **11/28/2017**	SeqNo: **1511626** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.8	70	130	0	0	P
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130	0	0	P
Surr: Dibromofluoromethane	10		10.00		102	70	130	0	0	P
Surr: Toluene-d8	9.5		10.00		95.3	70	130	0	0	P

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL47378**	RunNo: **47378**
Prep Date:	Analysis Date: **11/28/2017**	SeqNo: **1512731** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.5	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.5		10.00		95.4	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL47378**	RunNo: **47378**
Prep Date:	Analysis Date: **11/28/2017**	SeqNo: **1512732** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.8	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Southw** Work Order Number: **1711995** RcptNo: **1**

Received By: **Erin Melendrez** **11/18/2017 9:20:00 AM**

Completed By: **Sophia Campuzano** **11/20/2017 9:59:27 AM**

Reviewed By: 11/20/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			

Chain-of-Custody Record

Client: Kelly Robinson
Western Refining
Mailing Address: 111 Road 4990
Bloomfield, NM
Phone #:
email ~~or Fax#~~: Kelly.Robinson@andeavor.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
Former Bloomfield Crude Station

Project #:
12622367

Project Manager:
D. Henemann

Sampler: M. Wicker
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.6+0.7(CF)=2.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1711995	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX (8260)				Air Bubbles (Y or N)
11/16/17	1655	GW	MW-2	3 VOA, 1	HCl/cool	-001												X				
	1130		MW-3			-002												X				
	0950		MW-4			-003												X				
	1235		MW-5			-004												X				
	1320		MW-6			-005												X				
↓	1635	↓	MW-7	↓	↓	-006												X				

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
11/17/17	1200			11/17/17	1304	Please cc: DHenemann@LTenv.com MWicker@LTenv.com
11/17/17	1852			11/18/17	0920	

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 30, 2018

Allen Hains

Andeavor
111 CR 4990
Bloomfield, NM 87413
TEL: (505) 801-5616
FAX

RE: Bloomfield Crude Station OrderNo.: 1805C33

Dear Allen Hains:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/22/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Andeavor
Project: Bloomfield Crude Station
Lab Order: 1805C33

Lab ID: 1805C33-001 **Collection Date:** 5/22/2018 10:55:00 AM
Client Sample ID: MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/29/2018 1:34:00 PM	R51555
Toluene	ND	1.0		µg/L	1	5/29/2018 1:34:00 PM	R51555
Ethylbenzene	ND	1.0		µg/L	1	5/29/2018 1:34:00 PM	R51555
Xylenes, Total	ND	1.5		µg/L	1	5/29/2018 1:34:00 PM	R51555
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%Rec	1	5/29/2018 1:34:00 PM	R51555
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	5/29/2018 1:34:00 PM	R51555
Surr: Dibromofluoromethane	98.4	70-130		%Rec	1	5/29/2018 1:34:00 PM	R51555
Surr: Toluene-d8	91.7	70-130		%Rec	1	5/29/2018 1:34:00 PM	R51555

Lab ID: 1805C33-002 **Collection Date:** 5/22/2018 9:00:00 AM
Client Sample ID: MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/29/2018 2:46:00 PM	R51555
Toluene	ND	1.0		µg/L	1	5/29/2018 2:46:00 PM	R51555
Ethylbenzene	ND	1.0		µg/L	1	5/29/2018 2:46:00 PM	R51555
Xylenes, Total	ND	1.5		µg/L	1	5/29/2018 2:46:00 PM	R51555
Surr: 1,2-Dichloroethane-d4	99.0	70-130		%Rec	1	5/29/2018 2:46:00 PM	R51555
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	5/29/2018 2:46:00 PM	R51555
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	5/29/2018 2:46:00 PM	R51555
Surr: Toluene-d8	92.3	70-130		%Rec	1	5/29/2018 2:46:00 PM	R51555

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Andeavor **Lab Order:** 1805C33
Project: Bloomfield Crude Station

Lab ID: 1805C33-003 **Collection Date:** 5/22/2018 9:40:00 AM
Client Sample ID: MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/25/2018 5:48:00 PM	R51555
Toluene	ND	1.0		µg/L	1	5/25/2018 5:48:00 PM	R51555
Ethylbenzene	ND	1.0		µg/L	1	5/25/2018 5:48:00 PM	R51555
Xylenes, Total	ND	1.5		µg/L	1	5/25/2018 5:48:00 PM	R51555
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	5/25/2018 5:48:00 PM	R51555
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	5/25/2018 5:48:00 PM	R51555
Surr: Dibromofluoromethane	99.0	70-130		%Rec	1	5/25/2018 5:48:00 PM	R51555
Surr: Toluene-d8	93.0	70-130		%Rec	1	5/25/2018 5:48:00 PM	R51555

Lab ID: 1805C33-004 **Collection Date:** 5/22/2018 8:10:00 AM
Client Sample ID: MW-5 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/29/2018 3:11:00 PM	R51555
Toluene	ND	1.0		µg/L	1	5/29/2018 3:11:00 PM	R51555
Ethylbenzene	ND	1.0		µg/L	1	5/29/2018 3:11:00 PM	R51555
Xylenes, Total	ND	1.5		µg/L	1	5/29/2018 3:11:00 PM	R51555
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	5/29/2018 3:11:00 PM	R51555
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	5/29/2018 3:11:00 PM	R51555
Surr: Dibromofluoromethane	102	70-130		%Rec	1	5/29/2018 3:11:00 PM	R51555
Surr: Toluene-d8	93.9	70-130		%Rec	1	5/29/2018 3:11:00 PM	R51555

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Andeavor
Project: Bloomfield Crude Station
Lab Order: 1805C33

Lab ID: 1805C33-005
Collection Date: 5/22/2018 8:40:00 AM
Client Sample ID: MW-6
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	5/25/2018 6:36:00 PM	R51555
Toluene	ND	1.0		µg/L	1	5/25/2018 6:36:00 PM	R51555
Ethylbenzene	ND	1.0		µg/L	1	5/25/2018 6:36:00 PM	R51555
Xylenes, Total	ND	1.5		µg/L	1	5/25/2018 6:36:00 PM	R51555
Surr: 1,2-Dichloroethane-d4	98.8	70-130		%Rec	1	5/25/2018 6:36:00 PM	R51555
Surr: 4-Bromofluorobenzene	96.5	70-130		%Rec	1	5/25/2018 6:36:00 PM	R51555
Surr: Dibromofluoromethane	97.7	70-130		%Rec	1	5/25/2018 6:36:00 PM	R51555
Surr: Toluene-d8	92.2	70-130		%Rec	1	5/25/2018 6:36:00 PM	R51555

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1805C33**

30-May-18

Client: Andeavor

Project: Bloomfield Crude Station

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R51555**	RunNo: **51555**
Prep Date:	Analysis Date: **5/25/2018**	SeqNo: **1680971** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.9	70	130			
Toluene	19	1.0	20.00	0	94.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.3	70	130			
Surr: Toluene-d8	9.6		10.00		96.2	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R51555**	RunNo: **51555**
Prep Date:	Analysis Date: **5/25/2018**	SeqNo: **1680972** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.5	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.7	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.3	70	130			
Surr: Toluene-d8	9.7		10.00		96.6	70	130			

Sample ID **1805c33-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-2**	Batch ID: **R51555**	RunNo: **51589**
Prep Date:	Analysis Date: **5/29/2018**	SeqNo: **1681863** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.9	60.5	137			
Toluene	18	1.0	20.00	0	91.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.6	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.0	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.3	70	130			
Surr: Toluene-d8	9.1		10.00		91.0	70	130			

Sample ID **1805c33-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-2**	Batch ID: **R51555**	RunNo: **51589**
Prep Date:	Analysis Date: **5/29/2018**	SeqNo: **1681864** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.0	60.5	137	0.0817	20	
Toluene	18	1.0	20.00	0	91.3	70	130	0.339	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1805C33**

30-May-18

Client: Andeavor

Project: Bloomfield Crude Station

Sample ID **1805c33-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **MW-2** Batch ID: **R51555** RunNo: **51589**

Prep Date: Analysis Date: **5/29/2018** SeqNo: **1681864** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.1		10.00		91.1	70	130	0	0	
Surr: Dibromofluoromethane	9.9		10.00		99.3	70	130	0	0	
Surr: Toluene-d8	9.2		10.00		92.3	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: ANDEAVOR BLOOMFIEL Work Order Number: 1805C33 RcptNo: 1

Received By: **Anne Thorne** 5/22/2018 7:00:00 AM Anne Thorne

Completed By: **Isaiah Ortiz** 5/23/2018 9:12:45 AM I Ortiz

Reviewed By: MW 5/23/18

Labeled by [illegible] 5/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted) 5/23/18 MW

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Allen Hains
Western Refining
Mailing Address: 50 CR 4990
Bloomfield, NM
Phone #: (915) 490-1594
email or Fax#: Allen.S.Hains@Andeavor.com
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush
Project Name: Bloomfield Crude Station
Project #: PO# 126237561
Project Manager: Allen Hains
Sampler: Michael A. Wicker
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1805C33	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)		BTEX (8260)			Air Bubbles (Y or N)
5-22-18	1055	AQ	MW-2	3-VOA	HCl	-001													X			
	0900		MW-3			-002																
	0940		MW-4			-003																
	0810		MW-5			-004																
	0840		MW-6			-005																

Date:	Time:	Relinquished by:	Received by:	Date	Time
5-22-18	1520			5/22/18	1520
5/23/18	1820			05/23/18	0700

Remarks:
05/23/18

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix C
Historical Records Review

OCD Imaging

Well File Search

Please click on any thumbnail below in order to view the document. ***Access to the OCD Internet images does not grant permission to reproduce, disseminate, disclose, or otherwise utilize materials subject to protection of United States copyright or trademark laws. Contact the copyright owner for specific permission to utilize any such materials.***

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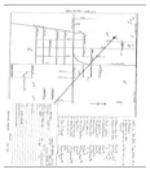
Well Details

API Number:	3004508109
ULSTR:	D-22-29N-11W
Footages	905 FNL & 1155 FWL
Well Name & Number:	PRE-ONGARD WELL No. 001
Operator:	PRE-ONGARD WELL OPERATOR

Note: *If you are using Microsoft Internet Explorer and your system does not allow you to open TIFF images from the Internet without saving them first, please contact your administrator.*

Sort Order: (•) Ascending ( ) Descending

(31 kB - 9/2/2003)


(53 kB - 9/2/2003)


(12 kB - 9/2/2003)

(76 kB - 9/2/2003)


(40 kB - 9/2/2003)


(48 kB - 9/2/2003)

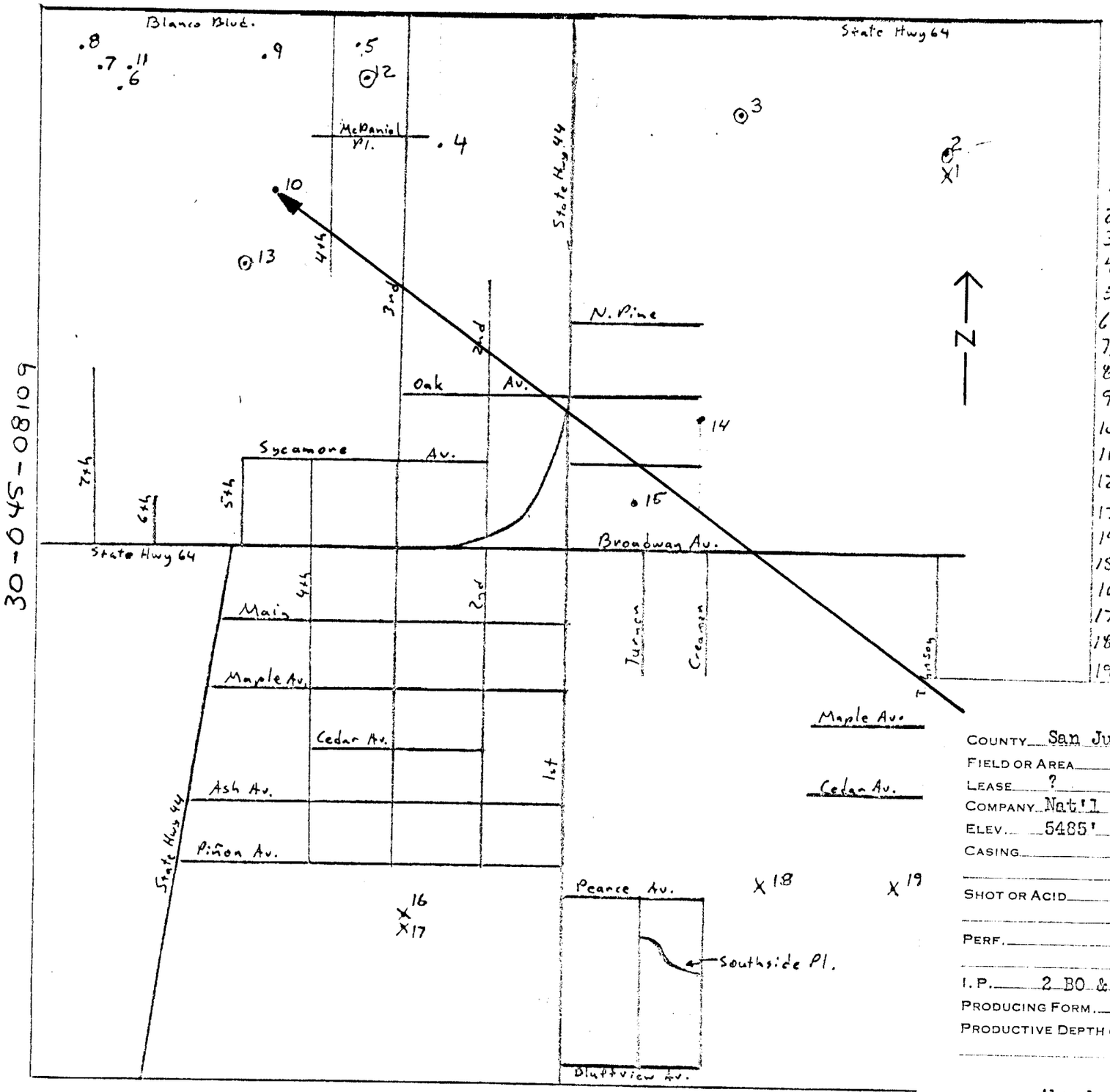

(19 kB - 9/2/2003)


(35 kB - 9/2/2003)


(71 kB - 9/2/2003)


(12 kB - 9/2/2003)

View All Go Back



Wells In Sec. 22, Twp 29N. R. 11W

X Producers
⊙ Reported as P+A
• Wells reported as drilled and no other records

1.	Mañana Gas Inc.	Finch #1
2.	Melborne Pet. Corp.	M.T. Finch #1
3	" " "	R.L. Finch #1
4.	Frank Webber	? #1
5.	Finley & Johansen	Hare #1
6.	Haney & Smith	Kittell #1
7.	Mid Continent Oil	Hare #1
8	Smith & Miley	Bishop #3
9	Bloomfield O&G	Grace Bishop #4
10	Nat'l Petro. Co.	? #1
11	A.E. Haney	Bishop #1
12.	Vincent & Goodrum	Refinery Hare #1
13.	Page & Davis	Salmon #1
14.	Finley & Johanson	Fee #1
15.	Bloomfield O&G	S.W. Garrison #7
16	Kimbell Oil Co.	Cook #2
17	"	Cook #1
18	John C. Pickett	Grace Pearce #1
19.	Kimbell Oil Co.	Hartman #1

STATE NEW MEXICO SE NW NW
COUNTY San Juan SEC. 22 T. 29N R. 11W
FIELD OR AREA Bloomfield LOCATION 905'/N, 115[illegible]
LEASE ? WELL NO. 1
COMPANY Nat'l Petr. Co. SPD. COMPLETED Summe
ELEV. 5485' T. D. 700' P. B.
CASING
SHOT OR ACID
PERF.
I. P. 2 BO & 10 BW
PRODUCING FORM.
PRODUCTIVE DEPTH OR INTERVAL

REMARKS:
Abandoned, 9-30-25 P&A 1932

OCD Imaging

Well File Search

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Well Details

API Number:	3004508169
ULSTR:	D-22-29N-11W
Footages	200 FNL & 200 FWL
Well Name & Number:	PRE-ONGARD WELL No. 003
Operator:	PRE-ONGARD WELL OPERATOR

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Sort Order: (•) Ascending ( ) Descending


(87 kB - 9/2/2003)


(61 kB - 9/2/2003)


(26 kB - 9/2/2003)

View All **Go Back**

30-045-08169

(Form C-102)
(Revised 7/1/52)

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

MISCELLANEOUS NOTICES

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

Notice of Intention to Change Plans		Notice of Intention to Temporarily Abandon Well		Notice of Intention to Drill Deeper	
Notice of Intention to Plug Well	X	Notice of Intention to Plug Back		Notice of Intention to Set Liner	
Notice of Intention to Squeeze		Notice of Intention to Acidize		Notice of Intention to Shoot (Nitro)	
Notice of Intention to Gun Perforate		Notice of Intention (Other)		Notice of Intention (Other)	

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Bloomfield, New Mexico (Place) November 6, 1953 (Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the

The Aerex Company (Company or Operator) Bishop Well No. 3 in D (Unit)

NW ¼ NW ¼ (40-acre Subdivision) of Sec. 22, T. 29N, R. 11W, NMPM., Bloomfield-Farmington Pool

San Juan County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

This well drilled in 1925 by The Bloomfield Oil & Gas Company, and was completed at a total depth of 700' in the Farmington sandstone.
8-1/4" casing was set at 690'. 10-1/2" set at approximately 200'.
Initial production was approximately 10 barrels oil per day. In 1926 the Fidelity Oil Company purchased this well from the Bloomfield Oil & Gas Co. In Sept. 1929 the Fidelity Oil Company went into receivership and A. C. & Virginia Kittell received title through court order. In 1930 title was transferred to The Aerex Company and they are the present owners. Production at present estimated at 1/2 barrel oil per day.

We propose to pull pipe, plug and abandon as follows: Place 10-sack regular cement plug from 700 to 650, pull all casing, put cement plug in top and leave marker 4' above ground level.

Approved 11-7, 1953
Except as follows:

The Aerex Co Inc.
Company or Operator
By A C Kittell
Position President
Send Communications regarding well to:
Name
Address

Approved
OIL CONSERVATION COMMISSION
By Emery C. Arnold
Title Oil & Gas Inspector, District #3

OIL CONSERVATION COMMISSION

AZTEC DISTRICT OFFICE

No. Copies Received

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OPERATOR		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-78

5a. Indicate Type of Lease: State ☐ Fee ☒
5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

7. Unit Agreement Name

OIL WELL ☐ GAS WELL ☒ OTHER-

Name of Operator: Smith + Miley / State of NM Oil Conservation Division RFA Program
8. Farm or Lease Name: Bishop

Address of Operator: 1000 Rio Brozos Rd. Aztec N.M. 87410
9. Well No.: 3

Location of Well
UNIT LETTER D , 200 FEET FROM THE North LINE AND 200 FEET FROM THE West LINE, SECTION 22 TOWNSHIP 29 N RANGE 11 W NMPM.
10. Field and Pool, or Wildcat: Bloomfield Farmington

15. Elevation (Show whether DF, RT, GR, etc.): 5490
12. County: SJ

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☒
PULL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER ☐		OTHER ☐	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

1. Clean hole to TD 540'
2. Set cement plug 35 sks (Class B 2% CaCl) 540' - 440'.
3. Come out of hole to 380'
4. Set cement plug 53 sks 380' - 230'.
5. Come out of hole. Watch Fluid level for 1 hr. It did not drop any.
6. Pull out of hole to 160'
7. Set cement plug 47 sks from 160'-50'
8. Set 10 sks top plug 25'-0
9. Install dry hole marker
10. Clean location and fill pits.

RECEIVED
OCT 13 1982
OIL CON. COM.
DIST. 3

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Bob Lamkin TITLE Owner Manager DATE 10-10-82

APPROVED BY Jeff A. Edmister TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3 DATE 10-10-82

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

9837909

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

DIVISION APPROVED PLUGGING PROGRAM

well file

Smith & Miley
Bishop #3
D 22-29N-11W

Downhole Equipment - 10" at 115'
Hole Size Unknown
Total Depth 699'

8" 1. Clean out hole to 699'. 540

2. Set a cement plug 699' - 599'. 540 440 35 sks

3. Come out of hole to 400'.

8" 4. Set a cement plug 400' - 250'. 53 sks

5. Come out of hole. Watch fluid level for one hour. If fluid level does not drop significantly, go to step #6. If fluid level drops 30' or more wait five more hours and tag plug. If plug is below 300' fill to 250'.

6. Come out of hole to 160'

7. Set a cement plug 160' - 50' 47 sks

8. Set a top plug and marker with ten sacks of cement. 25'

9. Fill pits, clean and level location.

1.18 cuft/sk 8" 2.0645 ft/cuft.

[illegible] 10" 2.0820 15'

TD 540'

Appendix D
Historical
Aerial Photographs

Prepared for:

DISORBO CONSULTING, LLC
1010 Travis St. Suite 916
Houston TX 77002

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Historical Aerial Photographs

Corner of W. Blanco Blvd. & N. 5th st.

Bloomfield, NM

ES-126197

Thursday, November 9, 2017

Date: 2016
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 2014
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 2011
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 2009
Source: USDA

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1997
Source: USGS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1991
Source: USGS

0 250 500 1,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1981
Source: USGS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1975
Source: USGS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1964
Source: USGS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1953
Source: AMS

0 250 500 1,000 Feet

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

Date: 1935
Source: EDAC

0 250 500 1,000 Feet

BANKS
ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

AERIAL SOURCE DEFINITIONS

Acronym	Agency
AerialOK	Aerial Oklahoma
AMS	Army Mapping Service
ASCS	Agricultural Stabilization & Conservation Service
EDAC	Earth Data Analysis Center
Fairchild	Fairchild Aerial Surveys
LDOT	Louisiana Department of Transportation
TXDOT	Texas Department of Transportation
USNavy	United States Navy
USAF	United States Air Force
USCOE	United States Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WALLACE	Wallace-Zingery Aerial Surveys
WSDOT	Washington State Department of Transportation

BANKS ENVIRONMENTAL DATA
A DIVISION OF THE BANKS GROUP

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