

3R – 311

2014 AGWMR

APRIL 2015

2014 ANNUAL GROUNDWATER REPORT

DAVIS #1

**ADMINISTRATIVE/ENVIRONMENTAL ORDER NUMBER
3RP-311-0**

APRIL 2015

Prepared for:

**WILLIAMS FIELD SERVICES, LLC
Tulsa, Oklahoma**



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Prepared for:

**WILLIAMS FIELD SERVICES, LLC
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EXECUTIVE SUMMARY	ii
1.0 INTRODUCTION	1
1.1 LOCATION	1
1.2 HISTORY.....	1
2.0 METHODOLOGY	1
2.1 WATER AND PRODUCT LEVEL MEASUREMENTS	2
2.3 GROUNDWATER CONTOUR MAPS	2
3.0 RESULTS	2
4.0 CONCLUSIONS	2
5.0 RECOMMENDATIONS.....	2

FIGURES

FIGURE 1	SITE LOCATION MAP
FIGURE 2	GROUNDWATER ELEVATION MAP (MARCH 2014)
FIGURE 3	GROUNDWATER ELEVATION MAP (JUNE 2014)
FIGURE 4	GROUNDWATER ELEVATION MAP (SEPTEMBER 2014)
FIGURE 5	GROUNDWATER ELEVATION MAP (DECEMBER 2014)

TABLES

TABLE 1	GROUNDWATER ELEVATION SUMMARY
TABLE 2	GROUNDWATER LABORATORY ANALYTICAL RESULTS

APPENDICES

APPENDIX A	2014 QUARTERLY FIELD NOTES
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EXECUTIVE SUMMARY

Groundwater at the Davis #1 (Administrative/Environmental Order Number 3RP-311-0) (Site) is impacted by petroleum hydrocarbons due to a release from a former earthen dehydrator pit operated by Gas Company of New Mexico (GCNM). Impacted soil was excavated in 1998 and seven monitoring wells were installed in 1999 to assess groundwater quality. Williams Field Services, LLC (Williams) purchased GCNM facilities from Public Service Company of New Mexico (PNM) in 2000 and assumed environmental liability for the Site. Since that time, Williams has monitored groundwater quality and conducted free-product removal. During 2014, Williams retained LT Environmental Inc. (LTE) to complete annual sampling requirements. Between January 2014 and December 2014, groundwater elevations were measured during four groundwater monitoring events (March 2014, June 2014, September 2014, and December 2014). Depth to groundwater data for the monitoring events conducted in 2014 indicated the groundwater flow was to the west-northwest.

Of the original seven monitoring wells, six remain. Groundwater monitoring well MW-3, which was located cross-gradient of the source area, was found to be destroyed during February 2013. Phase-separated hydrocarbons (PSH) had previously been observed in MW-3 between September 1999 and some time prior to March 2010. Groundwater monitoring well MW-2 is located in the original source area, but contained insufficient water volume for sampling during 2014. Downgradient of the original source area, groundwater monitoring well MW-5 contained measurable PSH ranging from 1.10 feet to 1.58 feet thick. Previous laboratory analytical results for groundwater samples in the three other downgradient groundwater monitoring wells (MW-4, MW-6, and MW-7) and upgradient groundwater monitoring well MW-1 indicated benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations were compliant with the New Mexico Water Quality Control Commission (NMWQCC) standards for more than eight consecutive quarters and sampling of these wells ceased in February 2013. During 2014, LTE monitored groundwater elevations in groundwater monitoring wells MW-1, MW-2, MW-4, MW-5, MW-6, and MW-7 and measured PSH thickness in MW-5.

Williams will continue to measure depth to groundwater and depth to PSH annually in MW-1, MW-2, MW-4, MW-5, MW-6, and MW-7. Groundwater samples will be collected annually, when possible, from MW-2 and MW-5. Williams intends to plug and abandon groundwater monitoring wells MW-2 and MW-5 and replace them with MW-2R and MW-5R, respectively once a surface agreement can be negotiated with the Bureau of Land Management (BLM). The two new wells will be developed and sampled to reassess the Site for plume delineation and PSH recovery options.

1.0 INTRODUCTION

LT Environmental, Inc. (LTE) on behalf of Williams Field Services, LLC (Williams) has prepared this report detailing quarterly groundwater monitoring activities completed from January 2014 through December 2014 at the Davis #1 (Administrative/Environmental Order Number 3RP-311-0) (Site). The scope of work for this project includes quarterly monitoring, including groundwater sampling and product recovery, of petroleum hydrocarbon impacts to groundwater resulting from the operation of a former earthen dehydrator pit.

1.1 LOCATION

The Site is located at latitude 36.915721 and longitude -108.070642 in Unit E, Section 11, Township 31 North, Range 12 West as depicted on Figure 1. The Site is in the Farmington Glade area of the San Juan Basin in San Juan County, New Mexico.

1.2 HISTORY

The source of impacted groundwater is a former earthen dehydrator pit operated by Gas Company of New Mexico (GCNM). Approximately 192 cubic yards of impacted soil were removed in May 1998. Based on historical documentation, residual hydrocarbon impacted soil was left in place at the Site at a depth of 16 feet below ground surface (bgs). A soil sample from the bottom of the excavation at 16 feet bgs contained 61.8 milligrams per kilogram (mg/kg) of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and 59 mg/kg diesel range organics (DRO). Subsequent soil boring data indicated the impacted soil extended to approximately 55 feet bgs. Between February 1999 and August 1999, monitoring wells MW-1 through MW-7 were installed. Groundwater monitoring well MW-2 was installed in the source area (Figure 2).

Williams Field Services, LLC (Williams) purchased the GCNM facilities from Public Service Company of New Mexico (PNM) in 2000, including environmental liability from the earthen dehydrator pit. Between 2000 and December 2012, Williams monitored groundwater at the Site. Groundwater monitoring wells MW-2, MW-3, and MW-5 have contained phase-separated hydrocarbons (PSH) at some time between September 1999 and December 2012. PSH was recovered from groundwater monitoring well MW-2 between 2008 and 2012. Records regarding these activities can be found in previous groundwater reports submitted to the New Mexico Oil Conservation Division (NMOCD).

2.0 METHODOLOGY

During 2014, LTE conducted quarterly groundwater monitoring activities at the Site. These activities included measuring depth to groundwater elevation and investigating the presence of PSH in the seven monitoring wells. Field forms are included in Appendix A. Monitoring well MW-2 does not contain sufficient groundwater volume for monitoring and cannot be sampled. The surface completion of MW-2 is damaged, making it impossible to secure with a padlock. Groundwater monitoring well MW-3 has been destroyed and cannot be sampled. Groundwater was not sampled from MW-5 during 2014 due to the presence of PSH. The PVC casing of

monitoring well MW-5 is loose within the metal surface completion and a 2-inch disposable bailer will not fit down the well for efficient product recovery.

2.1 WATER AND PRODUCT LEVEL MEASUREMENTS

Groundwater level monitoring included recording depth to groundwater measurements with a Keck oil/water interface probe. The presence of PSH was investigated using the interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. These data are summarized in Table 1.

2.2 GROUNDWATER CONTOUR MAPS

LTE used existing top-of-casing well elevations and measured groundwater elevations to draft groundwater contours and determine groundwater flow direction for the March, June, September, and December 2014 quarterly monitoring events (Figures 2 through 5). Contours were inferred based on groundwater elevations obtained and observations of physical characteristics at the Site (topography, proximity to irrigation ditches, etc.).

3.0 RESULTS

Depth to groundwater data collected during the 2014 quarterly monitoring events are summarized in Table 1. Groundwater flow direction was consistently to the west/northwest (Figures 2 through 5). Thickness of PSH in MW-5 ranged from 1.10 feet on December 10, 2014 to 1.58 feet on June 10, 2014. The volume of PSH in MW-5 has decreased since 2013. Historical groundwater quality data are presented in Table 2.

4.0 CONCLUSIONS

Impact to groundwater in the source area at groundwater monitoring well MW-2 is currently unknown due to insufficient water in the monitoring well. PSH continues to accumulate in groundwater monitoring well MW-5, downgradient of the original source area. Williams is currently working to negotiate a surface agreement with the Bureau of Land Management (BLM) to replace monitoring wells MW-2 and MW-5 at the Site and better understand current groundwater quality. Groundwater monitoring well MW-3 has been destroyed. Due to its location cross gradient of the source area and downgradient of the on-site production tank(s), PSH historically observed in the monitoring well may have been separately sourced.

5.0 RECOMMENDATIONS

Williams will continue to measure depth to groundwater and depth to PSH annually in MW-1, MW-2, MW-4, MW-5, MW-6, and MW-7. Groundwater samples will be collected annually, when possible, from MW-2 and MW-5. LTE recommends plugging and abandoning groundwater monitoring wells MW-2 and MW-5 and replacing them with MW-2R and MW-5R, respectively. The new monitoring wells should be developed, sampled, and integrated into the groundwater monitoring program. Williams should develop a groundwater monitoring program

based on laboratory analytical results and potential presence of PSH in the newly installed monitoring wells and continue to monitor groundwater elevation at all monitoring wells.

FIGURES

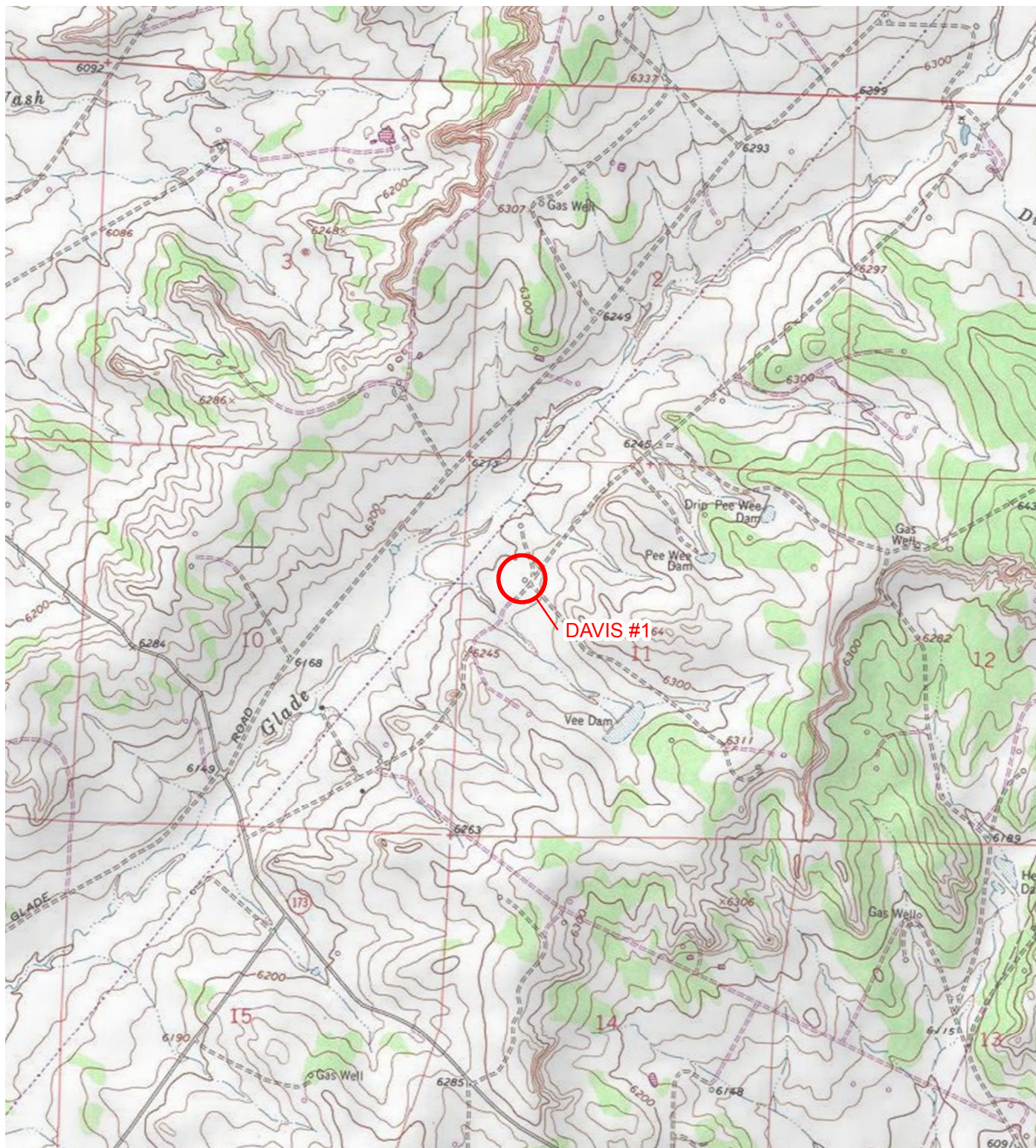


IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

○ SITE LOCATION

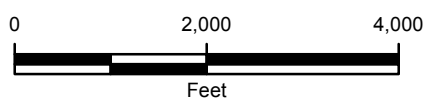
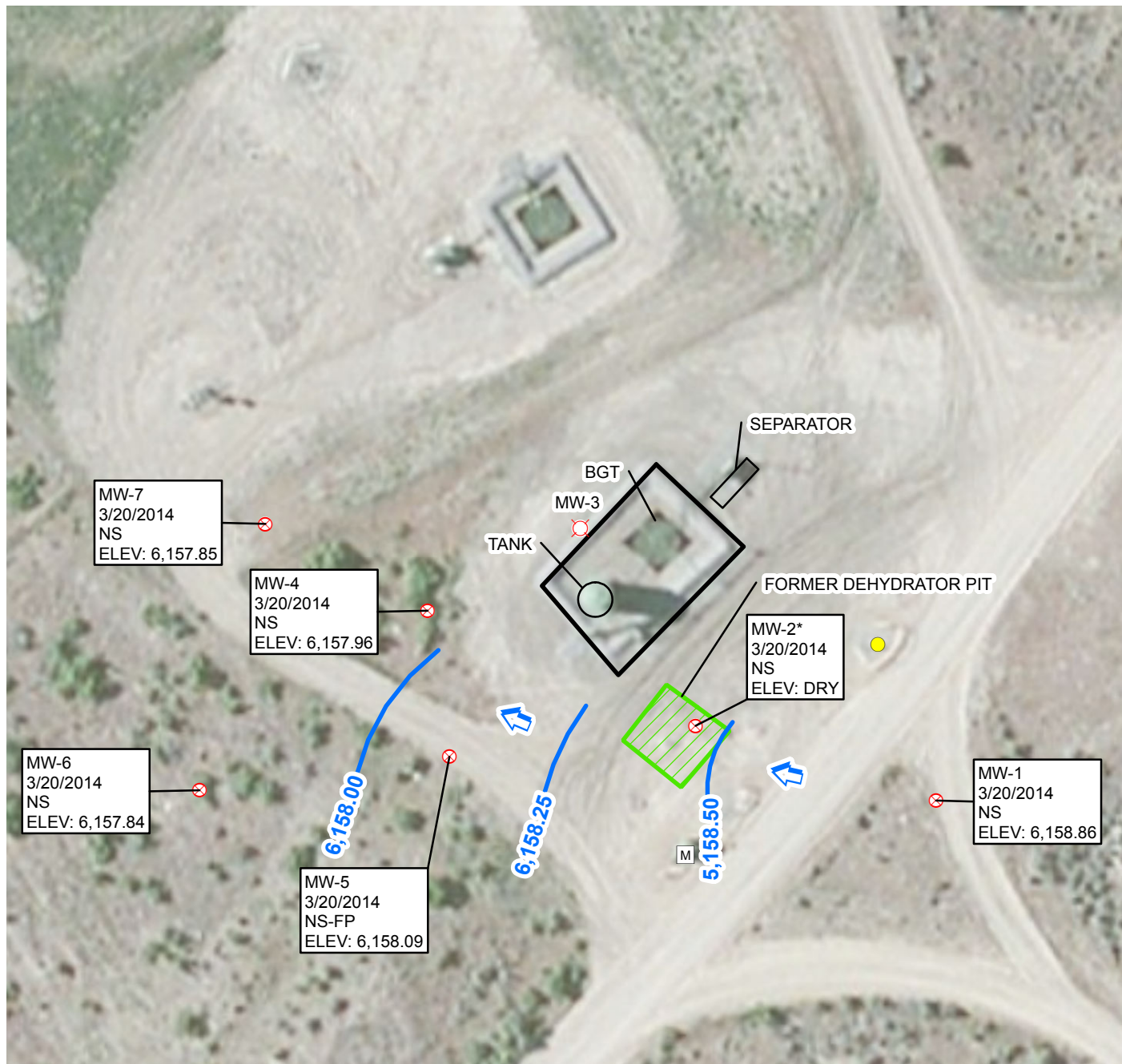


FIGURE 1
SITE LOCATION MAP
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO

WILLIAMS FIELD SERVICES, LLC





LEGEND

- WELLHEAD
- ⊗ MONITORING WELL
- ⊗ DESTROYED MONITORING WELL
- M METER HOUSE



ESTIMATED GROUNDWATER FLOW DIRECTION

— RELATIVE GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 0.25 FEET



BERM

BGT: BELOW GRADE TANK

*MW02 NOT USED TO GENERATE GROUNDWATER ELEVATION CONTOURS

SAMPLE ID
SAMPLE DATE
NS: NOT SAMPLED
NS-FP: NOT SAMPLED DUE TO FREE PRODUCT
ELEV: RELATIVE GROUNDWATER ELEVATION IN FEET

IMAGE COURTESY OF ESRI

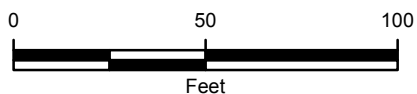
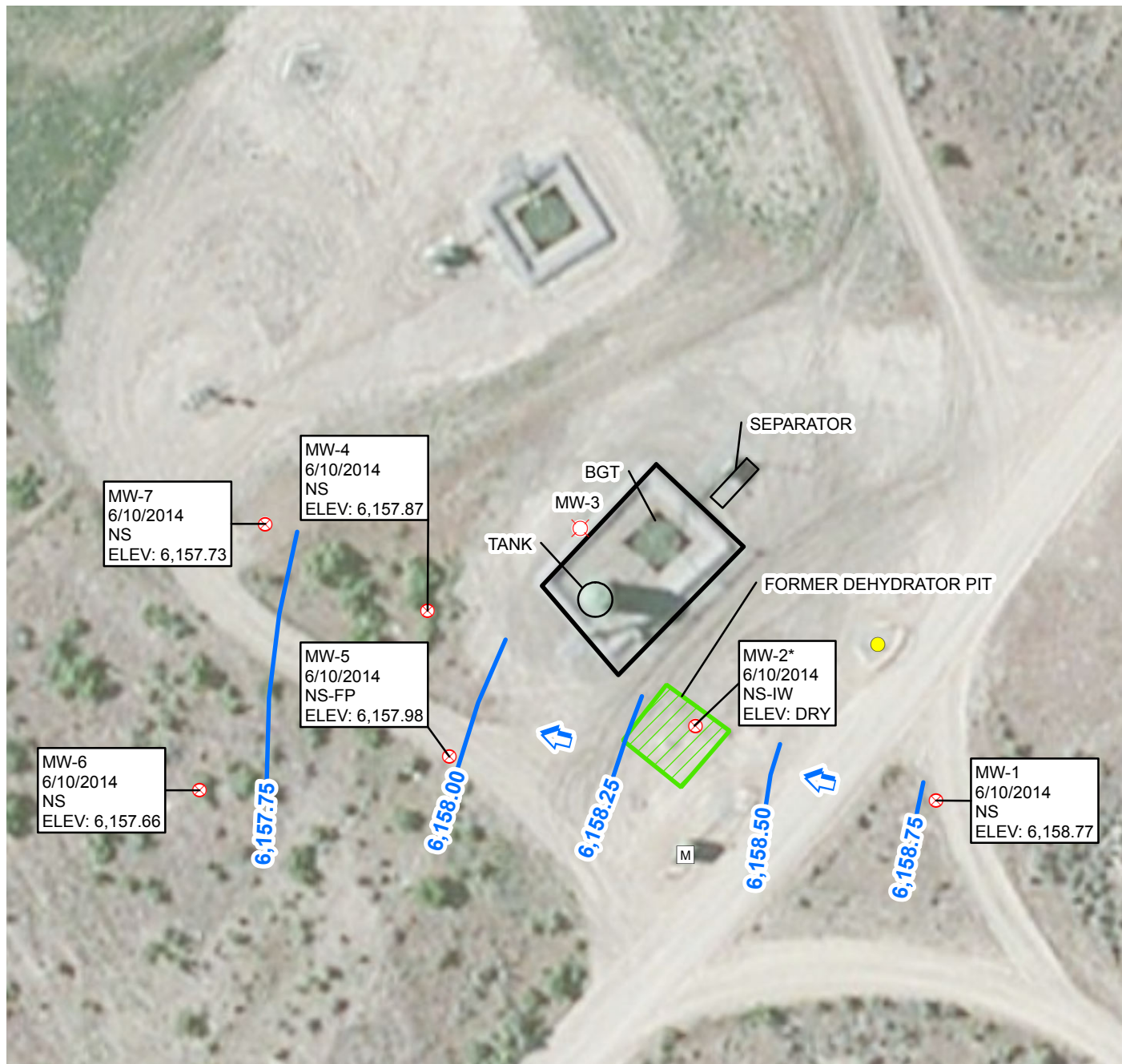


FIGURE 2
GROUNDWATER ELEVATION MAP
(MARCH 2014)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC





LEGEND

- WELLHEAD
- ⊗ MONITORING WELL
- ⊗ DESTROYED MONITORING WELL
- M METER HOUSE



ESTIMATED GROUNDWATER FLOW DIRECTION



RELATIVE GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 0.25 FEET



BERM

BGT: BELOW GRADE TANK

*MW02 NOT USED TO GENERATE GROUNDWATER ELEVATION CONTOURS

SAMPLE ID
SAMPLE DATE
NS: NOT SAMPLED
NS-FP: NOT SAMPLED DUE TO FREE PRODUCT
NS-IW: NOT SAMPLED DUE TO INSUFFICIENT WATER
ELEV: RELATIVE GROUNDWATER ELEVATION IN FEET

IMAGE COURTESY OF ESRI

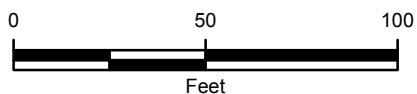
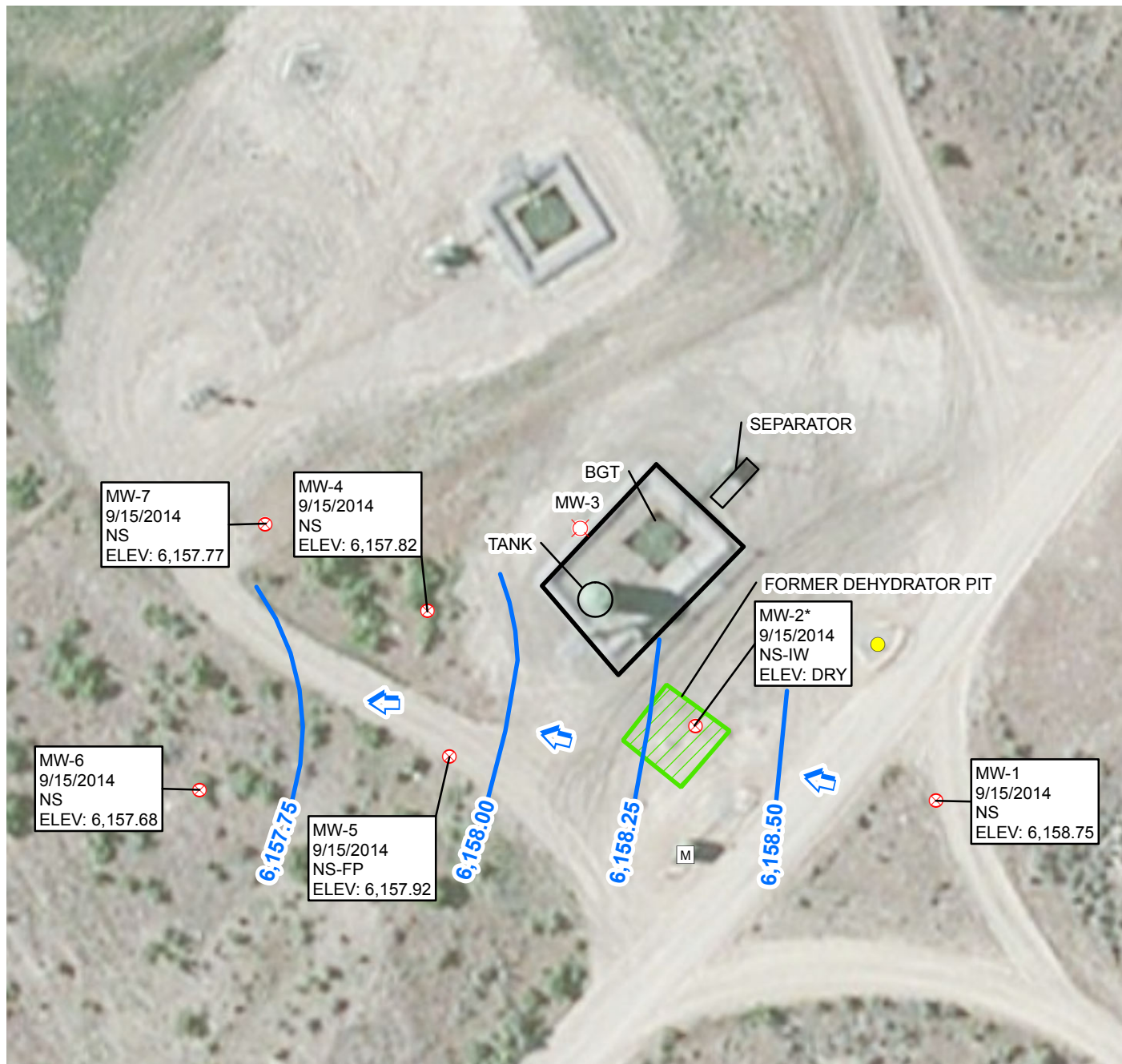


FIGURE 3
GROUNDWATER ELEVATION MAP
(JUNE 2014)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC





LEGEND

- WELLHEAD
- ⊗ MONITORING WELL
- ⊗ DESTROYED MONITORING WELL
- M METER HOUSE



ESTIMATED GROUNDWATER FLOW DIRECTION



RELATIVE GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 0.25 FEET



BERM

BGT: BELOW GRADE TANK

*MW02 NOT USED TO GENERATE GROUNDWATER
ELEVATION CONTOURS

SAMPLE ID
SAMPLE DATE
NS: NOT SAMPLED
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NS-IW: NOT SAMPLED DUE TO INSUFFICIENT WATER
ELEV: RELATIVE GROUNDWATER ELEVATION IN FEET

IMAGE COURTESY OF ESRI

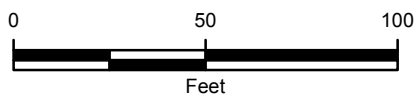
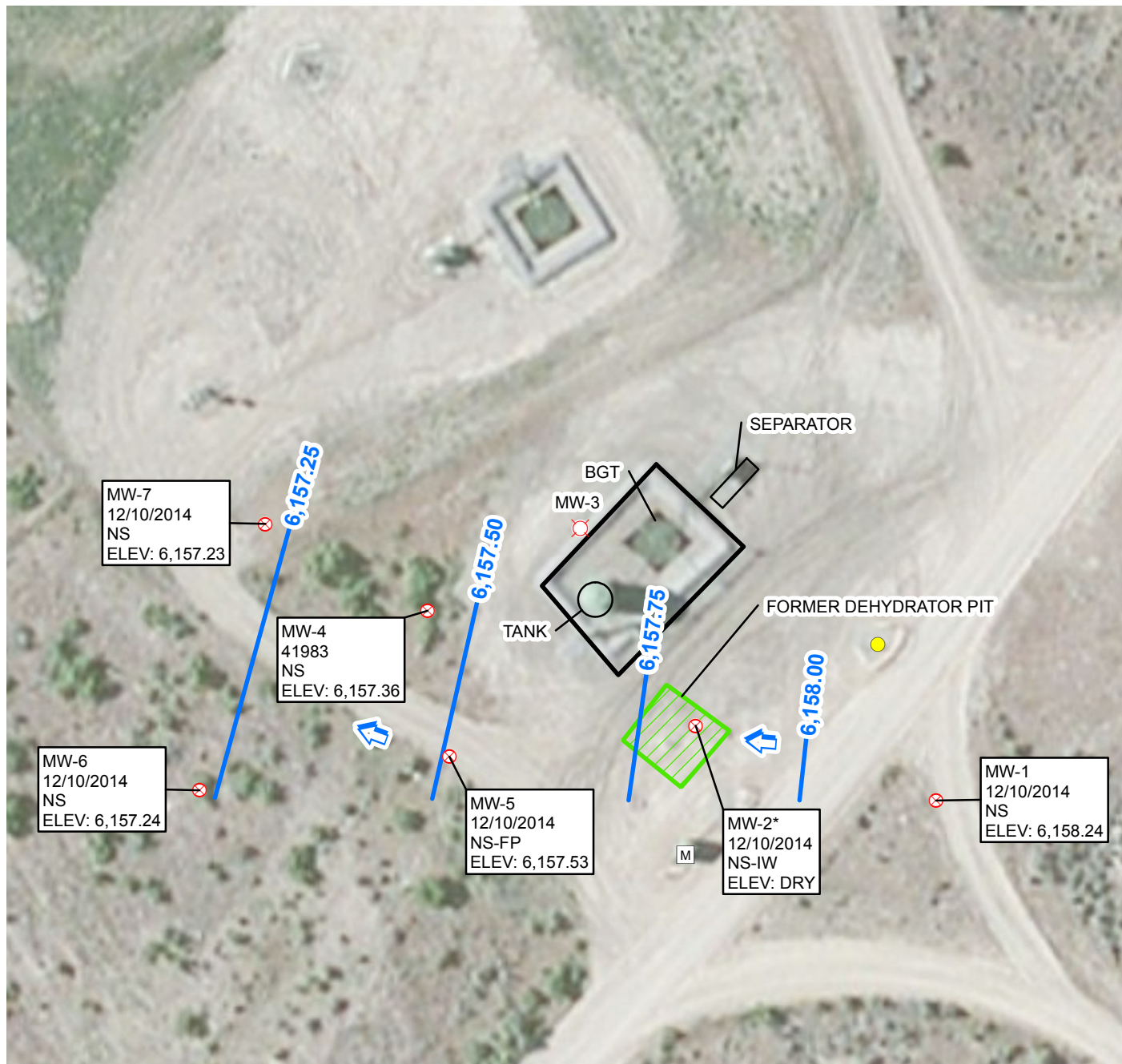


FIGURE 4
GROUNDWATER ELEVATION MAP
(SEPTEMBER 2014)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC





LEGEND

- WELLHEAD
- ⊗ MONITORING WELL
- ⊗ DESTROYED MONITORING WELL
- M METER HOUSE



ESTIMATED GROUNDWATER FLOW DIRECTION

— RELATIVE GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 0.25 FEET

BERM

BGT: BELOW GRADE TANK

*MW02 NOT USED TO GENERATE GROUNDWATER ELEVATION CONTOURS

SAMPLE ID
SAMPLE DATE
NS: NOT SAMPLED
NS-FP: NOT SAMPLED DUE TO FREE PRODUCT
NS-IW: NOT SAMPLED DUE TO INSUFFICIENT WATER
ELEV: RELATIVE GROUNDWATER ELEVATION IN FEET

IMAGE COURTESY OF ESRI

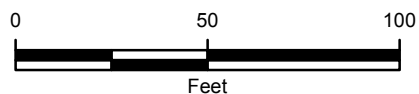


FIGURE 5
GROUNDWATER ELEVATION MAP
(DECEMBER 2014)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC



TABLES

TABLE 1
GROUNDWATER ELEVATION SUMMARY
DAVIS #1
WILLIAMS FIELD SERVICES, LLC

Well Name	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-1	4/4/2012	6,217.14	UNK	UNK	UNK	UNK
MW-1	6/13/2012	6,217.14	UNK	UNK	UNK	UNK
MW-1	10/2/2012	6,217.14	UNK	UNK	UNK	UNK
MW-1	12/13/2012	6,217.14	UNK	UNK	UNK	UNK
MW-1	2/27/2013	6,217.14	65.44	NP	NP	6,151.70
MW-1*	6/27/2013	6,224.82	65.65	NP	NP	6,159.17
MW-1	9/23/2013	6,224.82	66.06	NP	NP	6,158.76
MW-1	12/4/2013	6,224.82	65.97	NP	NP	6,158.85
MW-1	3/20/2014	6,224.82	65.96	NP	NP	6,158.86
MW-1	6/10/2014	6,224.82	66.05	NP	NP	6,158.77
MW-1	9/15/2014	6,224.82	66.07	NP	NP	6,158.75
MW-1	12/10/2014	6,224.82	66.58	NP	NP	6,158.24
MW-2	4/4/2012	6,215.55	UNK	UNK	UNK	UNK
MW-2	6/13/2012	6,215.55	UNK	UNK	UNK	UNK
MW-2	10/2/2012	6,215.55	UNK	UNK	UNK	UNK
MW-2	12/13/2012	6,215.55	UNK	UNK	UNK	UNK
MW-2	2/27/2013	6,215.55	63.35	NP	NP	6,152.20
MW-2*	6/27/2013	6,222.98	DRY	NP	NP	DRY
MW-2	9/23/2013	6,222.98	DRY	NP	NP	DRY
MW-2	12/4/2013	6,222.98	DRY	NP	NP	DRY
MW-2	3/20/2014	6,222.98	DRY	NP	NP	DRY
MW-2	6/10/2014	6,222.98	DRY	NP	NP	DRY
MW-2	9/15/2014	6,222.98	DRY	NP	NP	DRY
MW-2	12/10/2014	6,222.98	DRY	NP	NP	DRY
MW-3	4/4/2012	UNK	UNK	UNK	UNK	UNK
MW-3	6/13/2012	UNK	UNK	UNK	UNK	UNK
MW-3	10/2/2012	UNK	UNK	UNK	UNK	UNK
MW-3	12/13/2012	UNK	UNK	UNK	UNK	UNK
MW-3	2/27/2013	DEST	DEST	DEST	DEST	DEST
MW-4	4/4/2012	6,210.56	UNK	UNK	UNK	UNK
MW-4	6/13/2012	6,210.56	UNK	UNK	UNK	UNK
MW-4	10/2/2012	6,210.56	UNK	UNK	UNK	UNK
MW-4	12/13/2012	6,210.56	UNK	UNK	UNK	UNK
MW-4	2/27/2013	6,210.56	59.87	NP	NP	6,150.69
MW-4*	6/27/2013	6,218.14	60.02	NP	NP	6,158.12
MW-4	9/23/2013	6,218.14	60.39	NP	NP	6,157.75
MW-4	12/4/2013	6,218.14	60.15	NP	NP	6,157.99
MW-4	3/20/2014	6,218.14	60.18	NP	NP	6,157.96
MW-4	6/10/2014	6,218.14	60.27	NP	NP	6,157.87
MW-4	9/15/2014	6,218.14	60.32	NP	NP	6,157.82
MW-4	12/10/2014	6,218.14	60.78	NP	NP	6,157.36
MW-5	4/4/2012	6,212.18	UNK	UNK	UNK	UNK
MW-5	6/13/2012	6,212.18	UNK	UNK	UNK	UNK
MW-5	10/2/2012	6,212.18	UNK	UNK	UNK	UNK
MW-5	12/13/2012	6,212.18	UNK	UNK	UNK	UNK



TABLE 1
GROUNDWATER ELEVATION SUMMARY
DAVIS #1
WILLIAMS FIELD SERVICES, LLC

Well Name	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-5	2/27/2013	6,212.18	63.19	60.94	2.25	6,150.79
MW-5*	6/27/2013	6,220.03	63.52	61.31	2.21	6,158.28
MW-5	9/23/2013	6,220.03	63.55	61.79	1.76	6,157.89
MW-5	12/4/2013	6,220.03	63.15	61.62	1.53	6,158.10
MW-5	3/20/2014	6,220.03	63.19	61.63	1.56	6,158.09
MW-5	6/10/2014	6,220.03	63.31	61.73	1.58	6,157.98
MW-5	9/15/2014	6,220.03	63.33	61.80	1.53	6,157.92
MW-5	12/10/2014	6,220.03	62.38	61.28	1.10	6,158.53
MW-6	4/4/2012	6,211.23	UNK	UNK	UNK	UNK
MW-6	6/13/2012	6,211.23	UNK	UNK	UNK	UNK
MW-6	10/2/2012	6,211.23	UNK	UNK	UNK	UNK
MW-6	12/13/2012	6,211.23	UNK	UNK	UNK	UNK
MW-6	2/27/2013	6,211.23	60.68	NP	NP	6,150.55
MW-6*	6/27/2013	6,218.82	60.95	NP	NP	6,157.87
MW-6	9/23/2013	6,218.82	61.26	NP	NP	6,157.56
MW-6	12/4/2013	6,218.82	60.93	NP	NP	6,157.89
MW-6	3/20/2014	6,218.82	60.98	NP	NP	6,157.84
MW-6	6/10/2014	6,218.82	61.16	NP	NP	6,157.66
MW-6	9/15/2014	6,218.82	61.14	NP	NP	6,157.68
MW-6	12/10/2014	6,218.82	61.58	NP	NP	6,157.24
MW-7	4/4/2012	6,209.18	UNK	UNK	UNK	UNK
MW-7	6/13/2012	6,209.18	UNK	UNK	UNK	UNK
MW-7	10/2/2012	6,209.18	UNK	UNK	UNK	UNK
MW-7	12/13/2012	6,209.18	UNK	UNK	UNK	UNK
MW-7	2/27/2013	6,209.18	58.68	NP	NP	6,150.50
MW-7*	6/27/2013	6,216.82	58.84	NP	NP	6,157.98
MW-7	9/23/2013	6,216.82	59.21	NP	NP	6,157.61
MW-7	12/4/2013	6,216.82	58.94	NP	NP	6,157.88
MW-7	3/20/2014	6,216.82	58.97	NP	NP	6,157.85
MW-7	6/10/2014	6,216.82	59.09	NP	NP	6,157.73
MW-7	9/15/2014	6,216.82	59.05	NP	NP	6,157.77
MW-7	12/10/2014	6,216.82	59.59	NP	NP	6,157.23

Notes:

* Top of casing elevation was resurveyed on 6/21/13

Groundwater elevation calculation in wells with product: (Top of Casing Elevation - Depth to Water) + (Product Thickness *)

AMSL - Above Mean Sea Level

BTOC - Below Top of Casing

DEST - well has been destroyed

NP - No Product

UNK - data is not known



TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
DAVIS #1
WILLIAMS FIELD SERVICES LLC

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		10	750	750	620
MW-1	5/25/1999	<0.5	<0.5	<0.5	<1.5
MW-1	9/20/1999	<0.5	<0.5	<0.5	<1.5
MW-1	12/8/1999	<0.5	<0.5	<0.5	<1.5
MW-1	3/14/2000	<0.5	<0.5	<0.5	<1.5
MW-1	6/8/2000	<0.5	<0.5	<0.5	<1.5
MW-1	11/14/2000	<1	<1	<1	<1
MW-1	1/5/2001	<1	<1	<1	<1
MW-1	10/2/2001	<1.0	<2.0	<2.0	<2.0
MW-1	9/21/2004	<2.0	<2.0	<2.0	<5.0
MW-1	3/3/2005	<2.0	<2.0	<2.0	<5.0
MW-1	9/15/2005	<2.0	<2.0	<2.0	<5.0
MW-1	12/2/2005	<2.0	<2.0	<2.0	<5.0
MW-1	9/19/2006	<1.0	<1.0	<1.0	<3.0
MW-1	3/26/2008	<1.0	<1.0	<1.0	<3.0
MW-1	6/10/2008	<1.0	<1.0	<1.0	<3.0
MW-1	9/18/2008	<1.0	<1.0	<1.0	<3.0
MW-1	12/4/2008	<1.0	<1.0	<1.0	<3.0
MW-1	7/8/2009	<1.0	<1.0	<1.0	<3.0
MW-1	9/9/2009	<1.0	<1.0	<1.0	<3.0
MW-1	12/21/2009	<1.0	<1.0	<1.0	3.0
MW-1	3/30/2010	<1.0	<1.0	<1.0	<3.0
MW-1	6/18/2010	<1.0	<1.0	<1.0	<3.0
MW-1	9/9/2010	<1.0	<1.0	<1.0	<3.0
MW-1	12/3/2010	<1.0	<1.0	<1.0	<3.0
MW-1	3/2/2011	<1.0	<1.0	<1.0	<3.0
MW-1	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-1	9/14/2011	<1.0	<1.0	<1.0	<3.0
MW-1	1/10/2012	<1.0	<1.0	<1.0	<3.0
MW-1	4/4/2012	<1.0	<1.0	<1.0	<3.0
MW-1	6/13/2012	<1.0	<1.0	<1.0	<3.0
MW-1	10/2/2012	<1.0	<1.0	<1.0	<3.0
MW-1	12/13/2012	<1.0	<1.0	<1.0	<3.0
MW-1	2/27/2013	<2.0	<2.0	<2.0	<4.0

MW-2	5/25/1999	NS	NS	NS	NS
MW-2	9/20/1999	NS	NS	NS	NS
MW-2	12/8/1999	19,000	34,000	1,000	8,700
MW-2	3/14/2000	17,000	31,000	9,200	7,800
MW-2	6/8/2000	16,000	33,000	970	8,600
MW-2	10/2/2001	16,000	36,000	730	7,300
MW-2	3/13/2002	12,000	23,000	870	7,900
MW-2	12/15/2003	11,000	27,000	700	6,100
MW-2	4/4/2012	NS	NS	NS	NS
MW-2	6/13/2012	NS	NS	NS	NS
MW-2	10/2/2012	NS	NS	NS	NS



TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
DAVIS #1
WILLIAMS FIELD SERVICES LLC

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		10	750	750	620
MW-2	12/13/2012	NS	NS	NS	NS
MW-2	2/27/2013	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	6/21/2013	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	9/23/2013	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	12/4/2013	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	3/20/2014	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	6/10/2014	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	9/15/2014	NS-IW	NS-IW	NS-IW	NS-IW
MW-2	12/10/2014	NS-IW	NS-IW	NS-IW	NS-IW

MW-3	5/25/1999	NS	NS	NS	NS
MW-3	9/20/1999	NS	NS	NS	NS
MW-3	12/8/1999	NS	NS	NS	NS
MW-3	3/14/2000	NS	NS	NS	NS
MW-3	6/8/2000	NS	NS	NS	NS
MW-3	3/8/2005	NS	NS	NS	NS
MW-3	4/4/2012	NS	NS	NS	NS
MW-3	6/13/2012	NS	NS	NS	NS
MW-3	10/2/2012	NS	NS	NS	NS
MW-3	12/13/2012	NS	NS	NS	NS
MW-3	2/27/2013	DEST	DEST	DEST	DEST

MW-4	5/25/1999	<0.5	<0.5	<0.5	<1.5
MW-4	9/20/1999	<0.5	<0.5	<0.5	<1.5
MW-4	12/8/1999	<0.5	<0.5	<0.5	<1.5
MW-4	3/14/2000	<0.5	<0.5	<0.5	<1.5
MW-4	6/8/2000	<0.5	<0.5	<0.5	<1.5
MW-4	11/14/2000	<1	<1	<1	<1
MW-4	1/5/2001	<1	<1	<1	<1
MW-4	10/2/2001	<1.0	<2.0	<2.0	<2.0
MW-4	12/15/2003	<2.0	<2.0	<2.0	<5.0
MW-4	9/21/2004	<2.0	<2.0	<2.0	<5.0
MW-4	12/2/2004	<2.0	<2.0	<2.0	<5.0
MW-4	3/3/2005	<2.0	<2.0	<2.0	<5.0
MW-4	6/17/2005	<2.0	2.9	<2.0	<5.0
MW-4	9/15/2005	<2.0	<2.0	<2.0	<5.0
MW-4	12/2/2005	<2.0	<2.0	<2.0	<5.0
MW-4	6/2/2006	<1.0	<1.0	<1.0	<3.0
MW-4	9/19/2006	<1.0	<1.0	<1.0	<3.0
MW-4	3/26/2008	<1.0	<1.0	<1.0	<3.0
MW-4	6/10/2008	<1.0	<1.0	<1.0	<3.0
MW-4	9/18/2008	<1.0	<1.0	<1.0	<3.0
MW-4	12/4/2008	<1.0	<1.0	<1.0	<3.0
MW-4	7/8/2009	<1.0	<1.0	<1.0	<3.0
MW-4	9/9/2009	<1.0	<1.0	<1.0	<3.0



TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
DAVIS #1
WILLIAMS FIELD SERVICES LLC

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		10	750	750	620
MW-4	6/18/2010	<1.0	<1.0	<1.0	<3.0
MW-4	9/9/2010	<1.0	<1.0	<1.0	<3.0
MW-4	12/3/2010	<1.0	<1.0	<1.0	<3.0
MW-4	3/2/2011	<1.0	<1.0	<1.0	<3.0
MW-4	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-4	9/14/2011	<1.0	<1.0	<1.0	<3.0
MW-4	1/10/2012	<1.0	<1.0	<1.0	<3.0
MW-4	4/4/2012	<1.0	<1.0	<1.0	<3.0
MW-4	6/13/2012	<1.0	<1.0	<1.0	<3.0
MW-4	10/2/2012	<1.0	<1.0	<1.0	<3.0
MW-4	12/13/2012	<1.0	<1.0	<1.0	<3.0
MW-4	2/27/2013	<2.0	<2.0	<2.0	<4.0

MW-5	5/25/1999	NS	NS	NS	NS
MW-5	9/20/1999	NS	NS	NS	NS
MW-5	12/8/1999	900	3,100	380	3,090
MW-5	3/14/2000	290	340	190	1,300
MW-5	6/8/2000	670	38	280	1,685
MW-5	11/14/2000	814	28.2	210	569
MW-5	1/5/2001	1,780	44.9	252	598
MW-5	10/2/2001	6,200	210	610	510
MW-5	3/13/2002	3,700	200	370	380
MW-5	12/2/2004	8,500	1,000	280	740
MW-5	3/3/2005	6,600	2,500	290	2,400
MW-5	6/22/2006	6.6	1.0	<1.0	<3.0
MW-5	9/19/2006	3,800	919	163	928
MW-5	4/4/2012	NS	NS	NS	NS
MW-5	6/13/2012	NS	NS	NS	NS
MW-5	10/2/2012	NS	NS	NS	NS
MW-5	12/13/2012	11,800	1,270	7,620	8,910
MW-5	2/27/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	6/21/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	9/23/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	12/4/2013	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	3/20/2014	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	6/10/2014	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	9/15/2014	NS-FP	NS-FP	NS-FP	NS-FP
MW-5	12/10/2014	NS-FP	NS-FP	NS-FP	NS-FP

MW-6	5/25/1999	NS	NS	NS	NS
MW-6	9/20/1999	<0.5	<0.5	<0.5	<1.5
MW-6	12/8/1999	<0.5	<0.5	<0.5	<1.5
MW-6	3/14/2000	<0.5	<0.5	<0.5	<1.5
MW-6	6/8/2000	<0.5	<0.5	<0.5	<1.5
MW-6	11/14/2000	<1	<1	<1	<1



TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
DAVIS #1
WILLIAMS FIELD SERVICES LLC

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		10	750	750	620
MW-6	1/5/2001	<1	<1	<1	<1
MW-6	3/13/2002	<2.0	<2.0	<2.0	<5.0
MW-6	12/15/2003	<2.0	<2.0	<2.0	<5.0
MW-6	9/21/2004	<2.0	<2.0	<2.0	<5.0
MW-6	12/2/2004	<2.0	<2.0	<2.0	<5.0
MW-6	3/3/2005	<2.0	<2.0	<2.0	<5.0
MW-6	6/17/2005	<2.0	<2.0	<2.0	<5.0
MW-6	9/15/2005	<2.0	<2.0	<2.0	<5.0
MW-6	12/2/2005	<2.0	<2.0	<2.0	<5.0
MW-6	6/22/2006	<1.0	<1.0	<1.0	<3.0
MW-6	9/19/2006	<1.0	<1.0	<1.0	<3.0
MW-6	3/26/2008	<1.0	<1.0	<1.0	<3.0
MW-6	6/10/2008	<1.0	<1.0	<1.0	<3.0
MW-6	9/18/2008	<1.0	<1.0	<1.0	<3.0
MW-6	12/4/2008	<1.0	<1.0	<1.0	<3.0
MW-6	7/8/2009	<1.0	<1.0	<1.0	<3.0
MW-6	9/9/2009	<1.0	<1.0	<1.0	<3.0
MW-6	12/21/2009	<1.0	<1.0	<1.0	<3.0
MW-6	3/30/2010	<1.0	<1.0	<1.0	<3.0
MW-6	6/18/2010	<1.0	<1.0	<1.0	<3.0
MW-6	9/9/2010	<1.0	<1.0	<1.0	<3.0
MW-6	12/3/2010	<1.0	<1.0	<1.0	<3.0
MW-6	3/2/2011	<1.0	<1.0	<1.0	<3.0
MW-6	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-6	9/14/2011	<1.0	<1.0	<1.0	<3.0
MW-6	1/10/2012	<1.0	<1.0	<1.0	<3.0
MW-6	4/4/2012	<1.0	<1.0	<1.0	<3.0
MW-6	6/13/2012	<1.0	<1.0	<1.0	<3.0
MW-6	10/2/2012	<1.0	<1.0	<1.0	<3.0
MW-6	12/13/2012	<1.0	<1.0	<1.0	<3.0
MW-6	2/27/2013	<1.0	<1.0	<1.0	<2.0
MW-6	6/21/2013	<1.0	9.8	<1.0	12

MW-7	5/25/1999	NS	NS	NS	NS
MW-7	9/20/1999	<0.5	<0.5	<0.5	<1.5
MW-7	12/8/1999	<0.5	<0.5	<0.5	<1.5
MW-7	3/14/2000	<0.5	<0.5	<0.5	<1.5
MW-7	6/8/2000	<0.5	<0.5	<0.5	<1.5
MW-7	11/14/2000	<1	<1	<1	<1
MW-7	1/5/2001	<1	<1	<1	<1
MW-7	3/13/2002	<2.0	<2.0	<2.0	<5.0
MW-7	12/15/2003	<2.0	<2.0	<2.0	<5.0
MW-7	9/21/2004	<2.0	<2.0	<2.0	<5.0
MW-7	12/2/2004	<2.0	<2.0	<2.0	<5.0
MW-7	3/3/2005	<2.0	<2.0	<2.0	<5.0



TABLE 2

GROUNDWATER LABORATORY ANALYTICAL RESULTS
DAVIS #1
WILLIAMS FIELD SERVICES LLC

Well Name	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standard (µg/L)		10	750	750	620
MW-7	6/17/2005	<2.0	<2.0	<2.0	<5.0
MW-7	9/15/2005	<2.0	<2.0	<2.0	<5.0
MW-7	12/2/2005	<2.0	<2.0	<2.0	<5.0
MW-7	6/22/2006	<1.0	<1.0	<1.0	<3.0
MW-7	9/19/2006	<1.0	<1.0	<1.0	<3.0
MW-7	3/26/2008	<1.0	<1.0	<1.0	<3.0
MW-7	6/10/2008	<1.0	<1.0	<1.0	<3.0
MW-7	9/18/2008	<1.0	<1.0	<1.0	<3.0
MW-7	12/4/2008	<1.0	<1.0	<1.0	<3.0
MW-7	7/8/2009	<1.0	<1.0	<1.0	<3.0
MW-7	9/9/2009	<1.0	<1.0	<1.0	<3.0
MW-7	12/21/2009	<1.0	<1.0	<1.0	<3.0
MW-7	3/30/2010	<1.0	<1.0	<1.0	<3.0
MW-7	6/18/2010	<1.0	<1.0	<1.0	<3.0
MW-7	9/9/2010	<1.0	<1.0	<1.0	<3.0
MW-7	12/3/2010	<1.0	<1.0	<1.0	<3.0
MW-7	3/2/2011	<1.0	<1.0	<1.0	<3.0
MW-7	6/15/2011	<1.0	<1.0	<1.0	<3.0
MW-7	9/14/2011	<1.0	<1.0	<1.0	<3.0
MW-7	1/10/2012	<1.0	<1.0	<1.0	<3.0
MW-7	4/4/2012	<1.0	<1.0	<1.0	<3.0
MW-7	6/13/2012	<1.0	<1.0	<1.0	<3.0
MW-7	10/2/2012	<1.0	<1.0	<1.0	<3.0
MW-7	12/13/2012	<1.0	<1.0	<1.0	<3.0
MW-7	2/27/2013	<2.0	<2.0	<2.0	<4.0
MW-7	6/21/2013	<1.0	<1.0	<1.0	<2.0

Notes:

< - indicates result is less than laboratory reporting detection limit

Bold - indicates sample exceeds NMWQCC standard

DEST - well has been destroyed

NMWQCC - New Mexico Water Quality Control Commission

NS- not sampled

NS-FP - not sampled due to the presence of free phase hydrocarbons in the well

NS-IW - well did not contain sufficient volume of water to be sampled

µg/L - micrograms per liter



APPENDIX A
2014 QUARTERLY FIELD NOTES



Location

Davis #2

Date

3/20/14⁴⁹

Project / Client

William Lister GW

OH, Probe, T59, PH, T, EC meter
on site 1134

MW-1 65.96

MW-2 Dry / not enough to sample
end of Probe was strong H₂O₂ odor

MW-4 60.18

MW-5 DTP = 61.83 DTW = 63.19
From edge of protection casing

MW-6 60.98

MW-7 58.97

Location

Davis I

Date

6/10/14 103

Project / Client

0925 AC onsite Davis I

0930 Began Taking WL

MW-1 66.05'

MW-2 Dry @ 63.43'

MW-3 AC 60.27'

MW-5 product @ 61.73 - WL @ 63.31

MW-6 61.16'

Measure from ~~Top~~

MW-7 59.09'

Top of Steel casing

0955 End WL's

- Unable to Take Sample for MW-2

Because the well was dry

- Unable to take Sample for MW-5

Because there was 7.58' of PSH

1000 load up truck. AC offsite

AC 6/10/14

730 Calibrate Equipment
 850 leave office (Load truck)
 1110 onsite DN. SSA, HASP Sunny/Warm

F34, interface Probe,

DTW DTP

MW-1	66.07	NA	
MW-2	63.41	NA	DRY
MW-4	60.32	NA	
MW-5	63.33	61.80	1.53 ft of product
MW-6	61.14	NA	
MW-7	59.05	NA	

- NO sample MW-2 DRY
- NO sample MW-5 1.53 ft of Product
- Bail ~~602~~³⁰² of Product From MW-5
- MW-5 Bent can only use a small Butler

1"

1300 DN offsite

1340 Back @ office, unload truck, clean equipment

[Signature]
 9/15/14

134

Location DAVIS #1Date 12/10/14Project / Client WilliamsT.68. Interface Probe, pH meter

610 calibrate pH meter / load truck

700 leave office

755 DN on site SSA / HASP / Job Plan, Sunny, Cold

well	TP	DTW	DTP	Sample	Probe	Notes
MW-1	-	66.58	-	-	-	
MW-2	-	DRY @ 63.13	-	-	-	DRY
MW-4	-	60.78	-	-	-	
MW-5	62.77	61.28	62.38	-	-	1.1 ft of product
MW-6	-	61.58	-	-	-	
MW-7	-	59.54	-	-	-	

MW-2 = DRY @ 63.13

MW-5 = 62.38 - 61.28 = 1.10 ft

1.80 oz Product Removed

905 DN OFF site

12/10/14