

3R – 311

2013 AGWMR

03 / 11 / 2014



March 11, 2014

Glenn Von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Online Submission of 2013 Annual Groundwater Reports

Dear Mr. Von Gonten

LT Environmental (LTE), Inc., on behalf of Williams Field Services, LLC (Williams), is electronically submitting the attached 2013 annual groundwater monitoring reports for the following sites:

- Davis #1
- Dogie Compressor Station East Pit
- Florance #40
- Florance #47
- Ice Canyon Drip
- Jicarilla Contract #147-6
- Pritchard #2A.

If you have any questions regarding these reports please contact Ashley Ager with LTE at 970-385-1096 or aager@ltenv.com or Danny Ruetlinger with Williams at danny.reutlinger@williams.com.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads 'Ashley L. Ager'.

Ashley Ager
Senior Geologist/Office Manager

A handwritten signature in black ink that reads 'Brooke Herb'.

Brooke Herb
Staff Geologist

cc: Danny Ruetlinger
Attachments (7)

2013 ANNUAL GROUNDWATER REPORT

DAVIS #1

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

FEBUARY 2014

Prepared for:

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



2013 ANNUAL GROUNDWATER REPORT

**DAVIS #1
ADMINISTRATIVE/ENVIRONMENTAL ORDER NUMBER
3RP-311-0**

FEBURARY 2014

Prepared for:

**WILLIAMS FIELD SERVICES, LLC
PO Box 3483, MD 48-6
Tulsa, Oklahoma 74101**

Prepared by:

**LT ENVIRONMENTAL, INC.
2243 Main Avenue, Suite 3
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EXECUTIVE SUMMARY

Groundwater at the Davis #1 (Administrative/Environmental Order Number 3RP-311-0) natural gas production well (Site) is impacted by petroleum hydrocarbons due to a release from a former dehydrator pit. In January 2013, LT Environmental Inc., (LTE) was retained by Williams Field Services, LLC (Williams) to visit the Site and evaluate the status of the groundwater monitoring wells, complete annual sampling requirements, and recommend improvements to the groundwater remediation program.

Between February 2013 and December 2013, four groundwater monitoring events were conducted (February 2013, June 2013, September 2013, and December 2013). The monitoring well top-of-casing elevations were re-surveyed on June 21, 2013. Depth to groundwater data for the monitoring events conducted in 2013 indicated the groundwater flow is to the west-northwest.

Groundwater monitoring wells MW-2, MW-3, and MW-5 were not sampled during the 2013 quarterly monitoring events. Groundwater monitoring well MW-2 was not sampled due to insufficient water volume for sampling. Groundwater monitoring well MW-3 was found to be destroyed during the February 2013 site visit and subsequently could not be sampled during the quarterly monitoring events. Groundwater monitoring well MW-3 was located cross-gradient from the source area Williams is responsible for. 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-5 contained measurable free-phase hydrocarbons ranging from 1.53 feet to 2.25 feet thick.

Previous laboratory analytical results for groundwater samples in the three downgradient groundwater monitoring wells MW-4, MW-6, 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.

LTE intends to plug and abandon groundwater monitoring well MW-2 and MW-5 and replace them with MW-2R and MW-5R, respectively. LTE will continue to collect quarterly measurements of depth to groundwater and depth to PSH from MW-1, MW-2 (MW-2R once replaced), MW-4, MW-5 (MW-5R once replaced), MW-6, and MW-7. Groundwater samples will be collected, when possible, from MW-2 and MW-5 until they are replaced by MW-2R and MW-5R. The two new wells will be developed and samples collected and scheduled for product recovery based on the measurement results.

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 2013 through December 2013 at the Davis #1 (Administrative/Environmental Order Number 3RP-311-0) natural gas well (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. Williams removed 192 cubic yards of impacted soil in May 1998. It appears 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) toluene, ethylbenzene, and total xylenes and 59 mg/kg diesel range organics (DRO). Soil boring data indicated the impacted soil extends 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).

Between September 1999 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 2013, LTE conducted quarterly groundwater monitoring activities at the Site. These activities included measuring depth to groundwater elevation and depth to PSH in the seven monitoring wells and collecting groundwater samples when possible at select wells.

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 SAMPLING

Prior to sampling groundwater, depth to groundwater and total depth of monitoring wells were measured with a Keck oil/water interface probe. Groundwater monitoring wells containing measurable PSH were not sampled. The volume of water in each monitoring well was calculated, and a minimum of three well casing volumes of water was purged from each well using a new disposable polyvinyl chloride (PVC) bailer. As water was removed from the monitoring well, pH, electric conductivity, and temperature were measured. Monitoring wells were purged until these properties stabilized, indicating the purge water was representative of aquifer conditions, or until the well was purged dry. Stabilization was defined as three consecutive stable readings for each water property (± 0.4 units for pH, ± 10 percent for electric conductivity, and $\pm 2^\circ$ Celsius for temperature). Purge water was containerized and disposed of at a facility designated by Williams. A copy of the 2013 field notes are presented in Appendix A.

Once each monitoring well was properly purged, groundwater samples were collected by filling three 40-milliliter (ml) glass vials. The laboratory-supplied vials were filled and capped with no air inside to prevent degradation of the sample. Samples were labeled with the date and time of collection, monitoring well designation, project name, collector's name, and parameters to be analyzed. Samples were immediately sealed and packed on ice. The samples were transferred to Hall Environmental Analysis Laboratory (HEAL) for analysis. Samples were stored on ice in a sealed cooler and maintained under chain-of-custody (COC) procedures. COC forms were completed documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used (if any), analyses required, and sampler's signature. HEAL analyzed the samples for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency Method 8021.

2.3 GROUNDWATER CONTOUR MAPS

LTE used existing top-of-casing well elevations and groundwater elevations obtained from monitoring wells during the February 2013 site visit to draft the first quarter groundwater contour map (Figure 2). LTE returned to the Site to re-survey top-of-casing well elevations on June 21, 2013. The updated top-of-casing elevations were used for drafting groundwater contours and determining groundwater flow direction for the June, September, and December 2013 quarterly monitoring events (Figures 3 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 2013 quarterly monitoring events are summarized on Table 1. Groundwater flow direction was determined to be west/northwest (Figures 2 through 5).

Monitoring well MW-2 was not sampled during the 2013 quarterly monitoring events due to insufficient groundwater in the well. The surface completion of MW-2 is deformed, 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 2013 due to the presence of PSH ranging in thickness from 1.53 feet to 2.25 feet. 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 product recovery.

Laboratory analytical results for groundwater samples collected in the three down-gradient groundwater monitoring wells MW-4, MW-6, and MW-7 and up-gradient groundwater monitoring well MW-1 indicate BTEX concentrations are compliant with the New Mexico Water Quality Control Commission (NMWQCC) standards. Monitoring wells MW-1 and MW-4 were sampled during February 2013, and monitoring wells MW-6 and MW-7 were sampled during February and June 2013. Laboratory analytical results for groundwater are summarized in Table 2. Copies of the laboratory analytical results are presented in Appendix B.

4.0 CONCLUSIONS

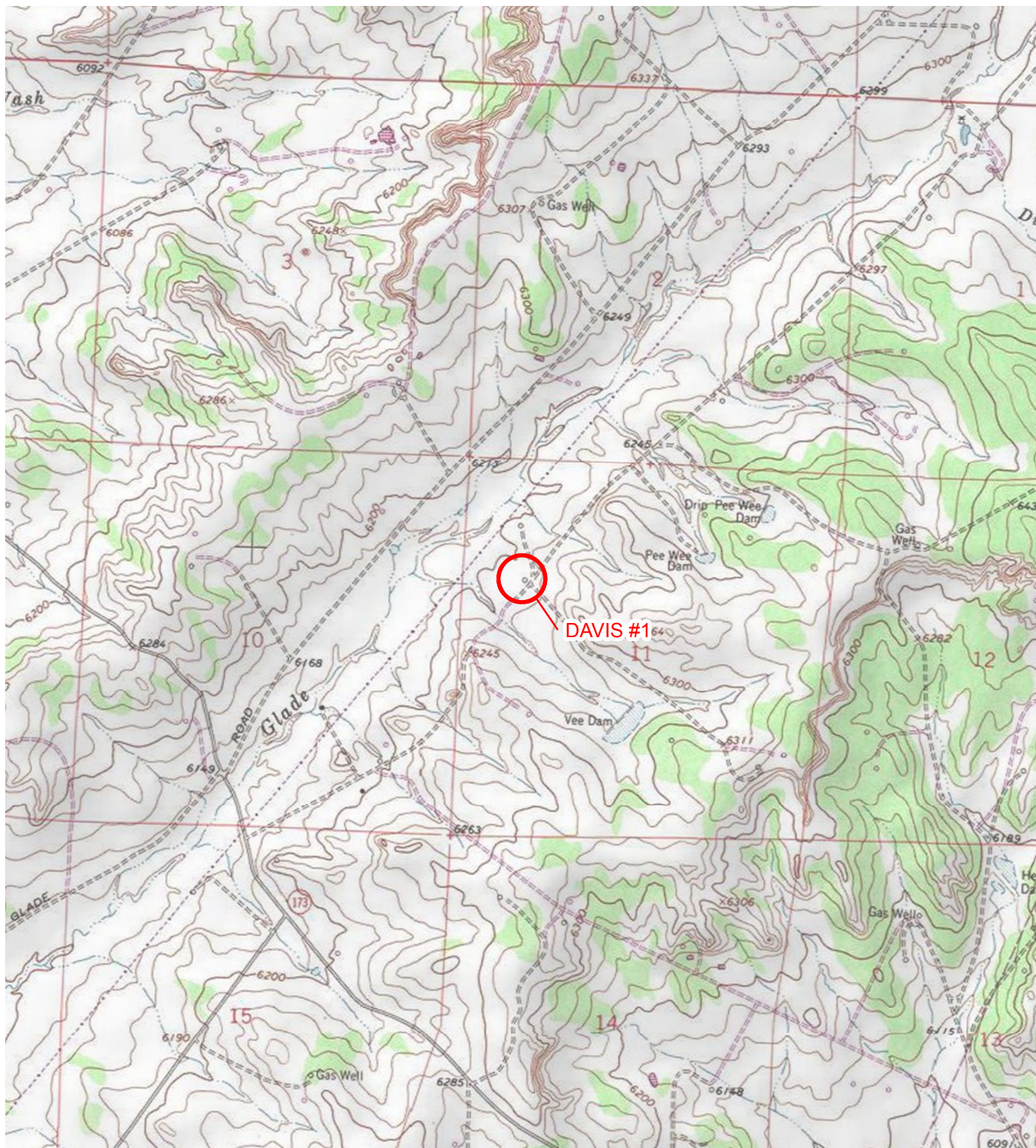
Impacts to groundwater in the source area at groundwater monitoring well MW-2 are currently unknown due to insufficient water in the monitoring well. The presence of PSH persist in groundwater monitoring well MW-5, downgradient of the source area. BTEX concentrations in the three downgradient groundwater monitoring wells (MW-4, MW-6, and MW-7) and the upgradient groundwater monitoring well (MW-1) remain compliant with NMWQCC standards. Groundwater sampling activities have ceased in MW-1, MW-4, MW-6, and MW-7 during 2013 due to BTEX concentrations being compliant with NMWQCC standards for eight consecutive quarters.

Groundwater monitoring well MW-3 has been destroyed. Due to its location cross gradient of the source area (MW-2) and downgradient of the on-site production tank(s), it is likely that impacts to groundwater in groundwater monitoring well MW-3 were separately sourced.

5.0 RECOMMENDATIONS

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 will be developed, sampled, and integrated into the groundwater monitoring program. LTE will develop a groundwater monitoring program based on laboratory analytical results and potential presence of PSH in the newly installed monitoring wells. LTE will continue to monitor groundwater elevation at the monitoring wells.

FIGURES



LEGEND

○ SITE LOCATION

IMAGE COURTESY OF ESRI/BING MAPS

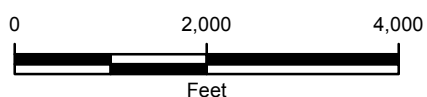
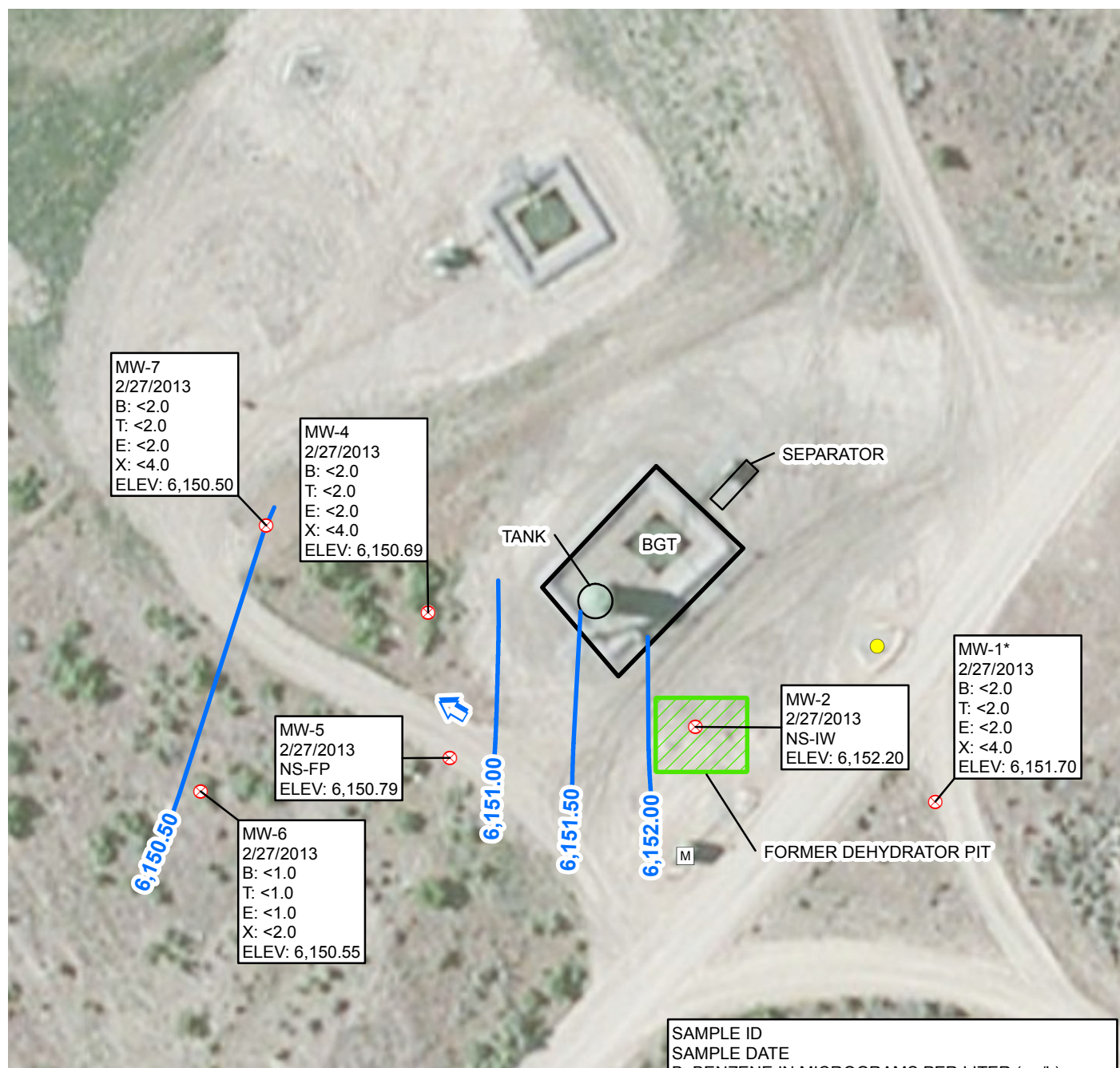


FIGURE 1
SITE LOCATION MAP
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO

WILLIAMS FIELD SERVICES, LLC





LEGEND

- WELLHEAD
- ⊗ MONITORING WELL
- M METER HOUSE
- ↑ ESTIMATED GROUNDWATER FLOW DIRECTION

— RELATIVE GROUNDWATER ELEVATION CONTOUR

CONTOUR INTERVAL = 0.50 FEET

BERM

BGT: BELOW GRADE TANK

*MW-1 NOT USED TO GENERATE GROUNDWATER ELEVATION CONTOURS
SUSPECTED INCORRECT TOP OF CASING ELEVATION

SAMPLE ID
SAMPLE DATE
B: BENZENE IN MICROGRAMS PER LITER (µg/L)
T: TOLUENE (µg/L)
E: ETHYLBENZENE (µg/L)
X: TOTAL XYLENES (µg/L)
<: INDICATES RESULT IS LESS THAN THE LABORATORY REPORTING LIMIT
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

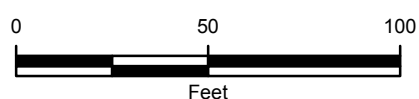


FIGURE 2
GROUNDWATER ELEVATION & ANALYTICAL RESULTS (FEBRUARY 2013)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC



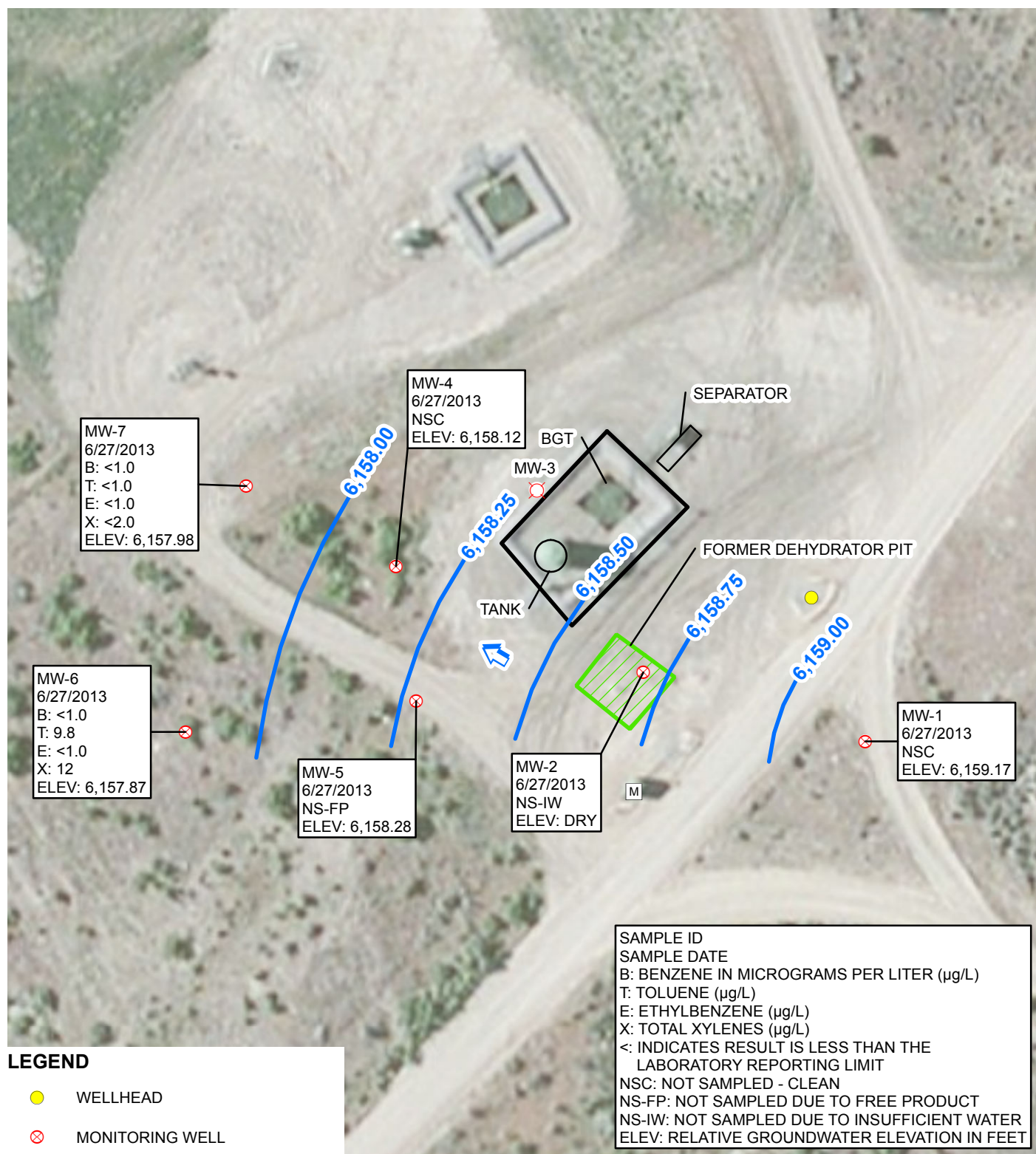


IMAGE COURTESY OF ESRI

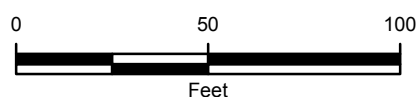
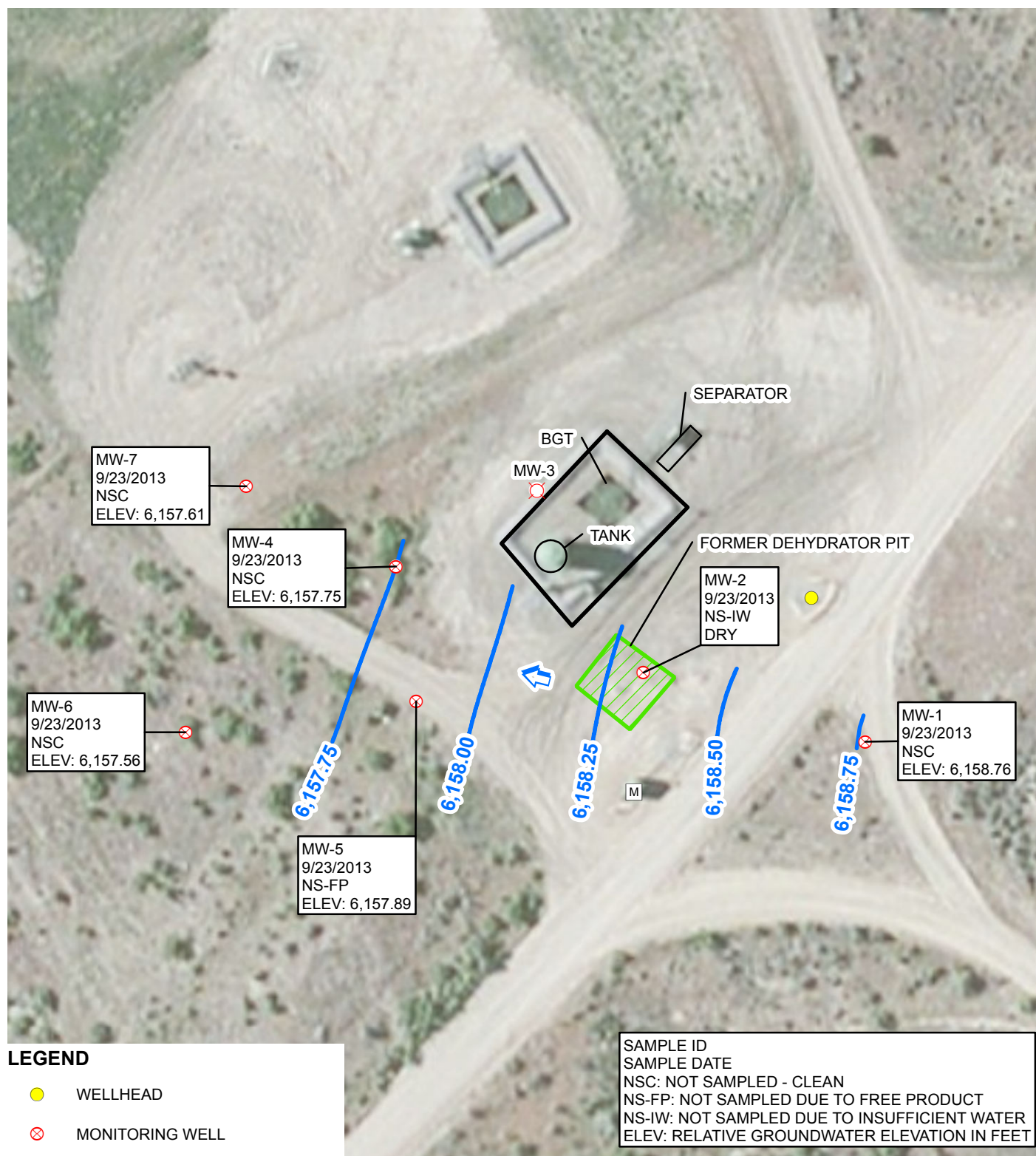


FIGURE 3
**GROUNDWATER ELEVATION &
ANALYTICAL RESULTS (JUNE 2013)**
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC





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

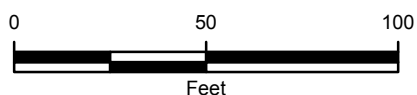


FIGURE 4
GROUNDWATER ELEVATION MAP
(SEPTEMBER 2013)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC



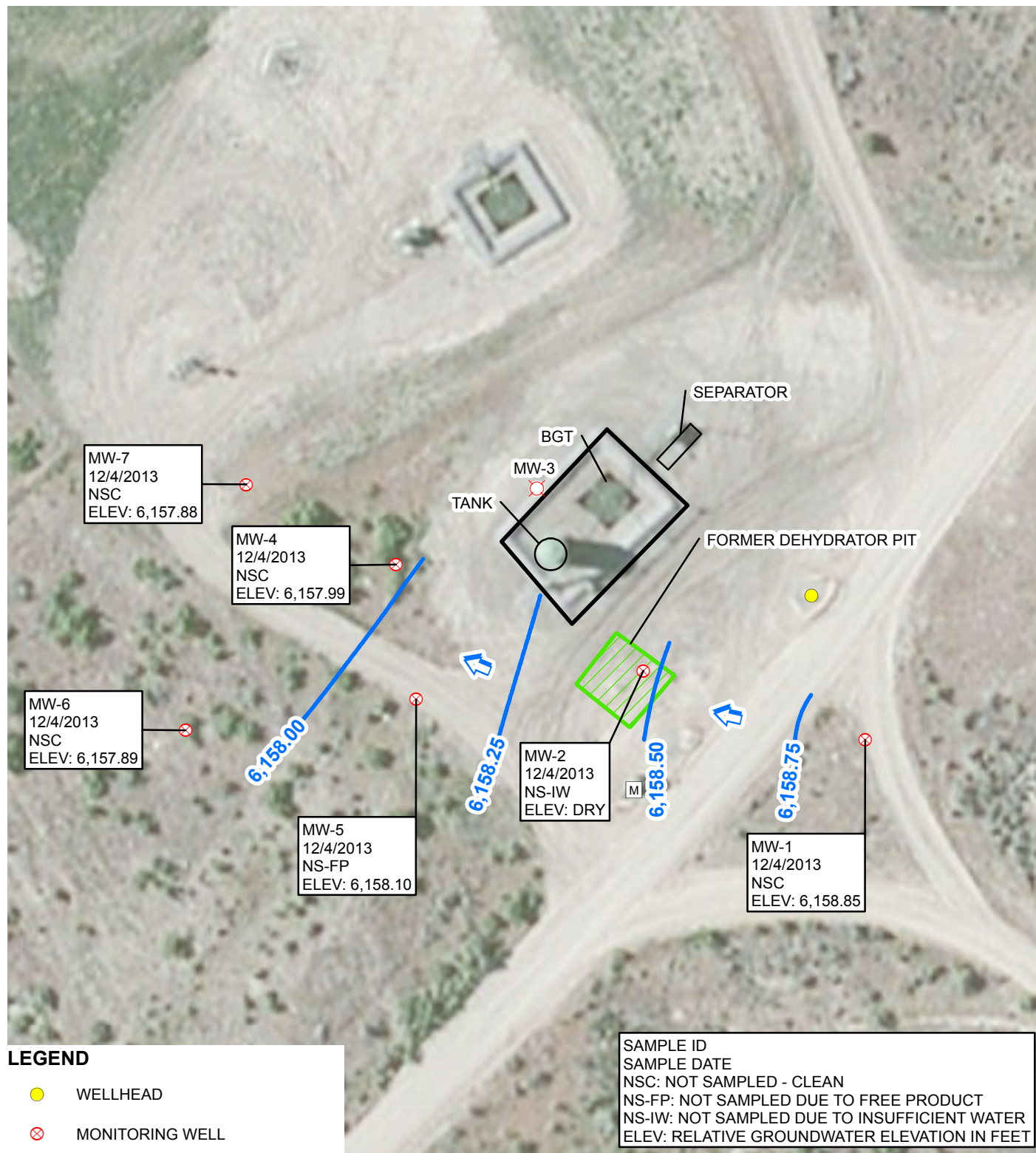


IMAGE COURTESY OF ESRI

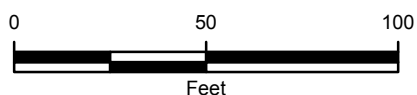


FIGURE 5
GROUNDWATER ELEVATION MAP
DECEMBER (2013)
DAVIS #1
SAN JUAN COUNTY, NEW MEXICO
WILLIAMS FIELD SERVICES, LLC



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-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-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



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	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
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-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-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

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 * 0.8)

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
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



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	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-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
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



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	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-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
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



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	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
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



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	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
2013 QUARTERLY FIELD NOTES



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams Field Services, LLC</u>
Sample Date	<u>2/27/2013</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>10:05</u>	Project #	<u>034013001</u>
Sample ID	<u>MW-1</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>BTEX 8021</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>Hall Environmental</u>
Turn Around Time	<u>Standard</u>	Shipping Method	<u>Hand delivery</u>
Depth to Water	<u>65.44</u>	TD of Well	<u>70.15</u>
Time	<u>9:30</u>	Depth to Product	<u>NA</u>
Vol. of H2O to purge	<u>$4.71 * 0.1631 = 1.0.75 * 3 = 2.26$</u> <i>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</i>		
Method of Purging	<u>PVC Bailer</u>		
Method of Sampling	<u>PVC Bailer</u>		

Time	Vol. Removed (gallons)	Total Vol H2O removed (gallons)	pH (standard units)	Temp. (°C)	Conductivity (ms)	Comments
9:35	0.25	0.25	7.04	14.2	1922 μ s	Brown, very silty, no HC odor, no sheen
	0.25	0.50	7.00	14.1	3.53	No change
	0.25	0.75	7.25	13.9	3.55	No change
	0.25	1.00	7.22	14.1	3.51	No change
	0.25	1.25	7.23	14.1	3.57	No change
	0.25	1.50	7.25	14.1	3.55	No change
	0.25	1.75	7.24	14.1	3.59	No change
	0.25	2.00	7.24	14.1	3.58	No change
	0.25	2.25	7.25	14.1	3.57	No change
10:05	0.25	2.50	7.25	14.1	3.57	No change

Comments: _____

Describe Deviations from SOP: _____

Signature: _____

Brooke Herb

Date: _____

2/27/2013



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams Field Services, LLC</u>
Sample Date	<u>2/27/2013</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>NA</u>	Project #	<u>034013001</u>
Sample ID	<u>MW-2</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>NA</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>NA</u>
Turn Around Time	<u>NA</u>	Shipping Method	<u>NA</u>
Depth to Water	<u>63.35</u>	TD of Well	<u>63.4</u>
Time	<u>13:30</u>	Depth to Product	<u>NA</u>
Vol. of H2O to purge	<u>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</u>		
Method of Purging	<u>NA</u>		
Method of Sampling	<u>NA</u>		

Time	Vol. Removed (gallons)	Total Vol H2O removed (gallons)	pH (standard units)	Temp. (°C)	Conductivity (ms)	Comments

Comments: Not enough water to collect a sample. Oil-water interface probe has a strong hydrocarbon odor. Was unable to lock well due to metal casing deformation.

Product recovery sock was observed in the metal casing of the well; but not low enough to be in the water. Left sock in well.

Describe Deviations from SOP: _____

Signature: Brooke Herb **Date:** 2/27/2013



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams Field Services, LLC</u>
Sample Date	<u>2/27/2013</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>2:38</u>	Project #	<u>034013001</u>
Sample ID	<u>MW-4</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>BTEX 8021</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>Hall Environmental</u>
Turn Around Time	<u>Standard</u>	Shipping Method	<u>Hand delivery</u>
Depth to Water	<u>59.87</u>	TD of Well	<u>67.68</u>
Time	<u>12:15</u>	Depth to Product	<u>NA</u>
Vol. of H2O to purge	<u>$7.81 * 0.1631 = 1.25 * 3 = 3.75$</u> <i>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</i>		
Method of Purging	<u>PVC Bailer</u>		
Method of Sampling	<u>PVC Bailer</u>		

Time	Vol. Removed (gallons)	Total Vol H2O removed (gallons)	pH (standard units)	Temp. (°C)	Conductivity (ms)	Comments
12:15	0.25	0.25	7.25	15.0	5.34	Brown, very silty
	0.25	0.50	7.20	15.3	5.26	No change
	0.25	0.75	7.23	15.3	5.19	No change
	0.25	1.00	7.22	15.2	5.14	No change
	0.50	1.50	7.24	15.2	5.21	No change
	0.50	2.00	7.23	15.2	5.09	No change
	0.75	2.75	7.25	15.1	5.05	No change
	0.25	3.00	7.28	15.2	5.13	No change
	0.25	3.25	7.30	15.3	5.11	No change
	0.25	3.50	7.31	15.2	5.12	No change
13:11	0.25	3.75	7.31	15.3	5.11	No change

Comments: _____

Describe Deviations from SOP: _____

Signature: _____

Brooke Herb

Date: _____

2/27/2013



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams Field Services, LLC</u>
Sample Date	<u>2/27/2013</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>NA</u>	Project #	<u>034013001</u>
Sample ID	<u>MW-5</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>NA</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>NA</u>
Turn Around Time	<u>NA</u>	Shipping Method	<u>NA</u>
Depth to Water	<u>63.19</u>	TD of Well	<u>NM</u>
Time	<u>12:10</u>	Depth to Product	<u>60.94</u>
Vol. of H2O to purge	<u>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</u>		
Method of Purging	<u>NA</u>		
Method of Sampling	<u>NA</u>		

Time	Vol. Removed (gallons)	Total Vol H2O removed (gallons)	pH (standard units)	Temp. (°C)	Conductivity (ms)	Comments

Comments: No sample was collected due to the presence of product.

Well contained tubing to total depth. The tubing was removed from the well; the bottom 3 feet of tubing were black. The tubing was discarded.

PVC is loose within the casing.

Describe Deviations from SOP: _____

Signature: _____

Brooke Herb

Date: _____

2/27/2013



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams Field Services, LLC</u>
Sample Date	<u>2/27/2013</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>12:07</u>	Project #	<u>034013001</u>
Sample ID	<u>MW-6</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>BTEX 8021</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>Hall Environmental</u>
Turn Around Time	<u>Standard</u>	Shipping Method	<u>Hand delivery</u>
Depth to Water	<u>60.68</u>	TD of Well	<u>62.75</u>
Time	<u>11:20</u>	Depth to Product	<u>NA</u>
Vol. of H2O to purge	<u>$2.07 * 0.1631 = 0.33 * 3 = 0.99$</u> <u>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</u>		
Method of Purging	<u>PVC Bailer</u>		
Method of Sampling	<u>PVC Bailer</u>		

Time	Vol. Removed (gallons)	Total Vol H2O removed (gallons)	pH (standard units)	Temp. (°C)	Conductivity (ms)	Comments
11:30	0.25	0.25	7.20	12.8	4.89	Light brown, minor silt, no HC odor, no sheen
	0.25	0.50	7.14	13.4	4.85	Bailing down
	0.25	0.75	6.99	14.1	4.83	More silt, bailing down
11:45	0.25	1.00	7.17	12.2	4.89	Bailed Dry

Comments: _____

Describe Deviations from SOP: _____

Signature: _____

Brooke Herb

Date: _____

2/27/2013



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams Field Services, LLC</u>
Sample Date	<u>2/27/2013</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>11:15</u>	Project #	<u>034013001</u>
Sample ID	<u>MW-7</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>BTEX 8021</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>Hall Environmental</u>
Turn Around Time	<u>Standard</u>	Shipping Method	<u>Hand delivery</u>
Depth to Water	<u>58.68</u>	TD of Well	<u>67.40</u>
Time	<u>10:10</u>	Depth to Product	<u>NA</u>
Vol. of H2O to purge	<u>8.72 * 0.1631 = 1.42 * 3 = 4.26</u> <i>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</i>		
Method of Purging	<u>PVC Bailer</u>		
Method of Sampling	<u>PVC Bailer</u>		

Time	Vol. Removed (gallons)	Total Vol H2O removed (gallons)	pH (standar d units)	Temp. (°C)	Conductivity (ms)	Comments
10:10	0.25	0.25	7.25	14.9	5.51	Light brown, silty, no sheen, no HC odor
	0.25	0.50	7.26	14.7	5.50	No change
	0.25	0.75	7.37	14.5	5.45	More silt
	0.25	1.00	7.39	14.7	5.42	No change
	0.25	1.25	7.36	14.6	5.46	No change
	0.25	2.00	7.24	14.6	5.50	Very silty
	0.50	2.50	7.39	14.6	5.49	No change
	0.50	3.00	7.34	14.4	5.37	No change
	0.50	3.50	7.41	14.7	5.43	No change
	0.25	3.75	7.41	14.7	5.38	No change
	0.25	4.00	7.36	14.7	5.35	No change
	0.25	4.25	7.37	14.7	5.44	No change
11:15	0.25	4.50	7.38	14.7	5.35	No change

Comments: _____

Describe Deviations from SOP: _____

Signature: _____

Brooke Herb

Date: _____

2/27/2013



Water Sample Collection Form

Sample Location	<u>Davis #1</u>	Client	<u>Williams</u>
Sample Date	<u>6/21/13</u>	Project Name	<u>Historical Groundwater</u>
Sample Time	<u>1000</u>	Project #	
Sample ID	<u>MW-7</u>	Sampler	<u>Brooke Herb</u>
Analyses	<u>BTEX 8021</u>		
Matrix	<u>Groundwater</u>	Laboratory	<u>hall</u>
Turn Around Time	<u>Standard</u>	Shipping Method	<u>Christine</u>
Trip Blank	<u>6/21/13</u>	Other QA/QC	
Depth to Water	<u>58.81</u>	TD of Well	<u>67.40</u>
Time	<u>9.25</u>	Depth to Product	<u>NA</u>
Vol. of H2O to purge	<u>8.59 x .1631 = 1.40 x 3 = 4.20</u>		
	<small>(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols</small>		
Method of Purging	<u>Bottom Valve Bailer</u>		
Method of Sampling	<u>" " "</u>		

Time	Vol. Removed (gal.)	Total Vol H2O removed (gal.)	pH (std. units)	Temp. (°F)	Conductivity (us or ms)	Comments
925	.25	.25	7.18	63.3	2.37	light brown minor silt
	.25	.50	7.17	61.9	2.44	dark brown / more silt
	.25	.75	7.32	61.8	2.43	more silt - very silt
	.25	1.00	7.28	62.8	2.40	no change
	.25	1.25	7.29	62.7	2.44	"
	.25	1.50	7.28	61.9	2.42	"
	.25	1.75	7.33	61.8	2.45	"
	.25	2.00	7.37	61.7	2.40	"
	.25	2.25	7.39	61.9	2.39	"
	.25	2.50	7.39	61.7	2.42	"
	.25	2.75	7.40	61.7	2.41	"
	.25	3.00	7.40	61.8	2.42	"
955	.25	3.25	7.40	61.7	2.41	"

Comments: Sampled w/ 3 H₂O VOLS

Describe Deviations from SOP:

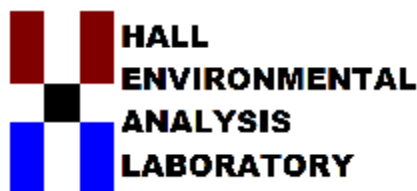
Signature: [Signature]

Date: 6/21/13



APPENDIX B
LABORATORY ANALYTICAL REPORTS





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

March 06, 2013

Julie Linn
LTE
2243 Main Ave Suite 3
Durango, CO 81301
TEL: (970) 385-1096
FAX

RE: Davis #1

OrderNo.: 1302934

Dear Julie Linn:

Hall Environmental Analysis Laboratory received 4 sample(s) on 2/28/2013 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. 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. 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.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1302934

Date Reported: 3/6/2013

CLIENT: LTE

Client Sample ID: MW-1

Project: Davis #1

Collection Date: 2/27/2013 10:05:00 AM

Lab ID: 1302934-001

Matrix: AQUEOUS

Received Date: 2/28/2013 9:59:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	2.0		µg/L	2	3/4/2013 8:08:58 PM
Toluene	ND	2.0		µg/L	2	3/4/2013 8:08:58 PM
Ethylbenzene	ND	2.0		µg/L	2	3/4/2013 8:08:58 PM
Xylenes, Total	ND	4.0		µg/L	2	3/4/2013 8:08:58 PM
Surr: 4-Bromofluorobenzene	91.1	69.7-152		%REC	2	3/4/2013 8:08:58 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1302934**

Date Reported: **3/6/2013**

CLIENT: LTE

Client Sample ID: MW-7

Project: Davis #1

Collection Date: 2/27/2013 11:15:00 AM

Lab ID: 1302934-002

Matrix: AQUEOUS

Received Date: 2/28/2013 9:59:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	2.0		µg/L	2	3/5/2013 12:09:44 AM
Toluene	ND	2.0		µg/L	2	3/5/2013 12:09:44 AM
Ethylbenzene	ND	2.0		µg/L	2	3/5/2013 12:09:44 AM
Xylenes, Total	ND	4.0		µg/L	2	3/5/2013 12:09:44 AM
Surr: 4-Bromofluorobenzene	89.1	69.7-152		%REC	2	3/5/2013 12:09:44 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1302934

Date Reported: 3/6/2013

CLIENT: LTE

Client Sample ID: MW-6

Project: Davis #1

Collection Date: 2/27/2013 12:07:00 PM

Lab ID: 1302934-003

Matrix: AQUEOUS

Received Date: 2/28/2013 9:59:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	3/5/2013 12:39:51 AM
Toluene	ND	1.0		µg/L	1	3/5/2013 12:39:51 AM
Ethylbenzene	ND	1.0		µg/L	1	3/5/2013 12:39:51 AM
Xylenes, Total	ND	2.0		µg/L	1	3/5/2013 12:39:51 AM
Surr: 4-Bromofluorobenzene	87.2	69.7-152		%REC	1	3/5/2013 12:39:51 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1302934**

Date Reported: **3/6/2013**

CLIENT: LTE

Client Sample ID: MW-4

Project: Davis #1

Collection Date: 2/27/2013 1:11:00 PM

Lab ID: 1302934-004

Matrix: AQUEOUS

Received Date: 2/28/2013 9:59:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	2.0		µg/L	2	3/5/2013 1:09:48 AM
Toluene	ND	2.0		µg/L	2	3/5/2013 1:09:48 AM
Ethylbenzene	ND	2.0		µg/L	2	3/5/2013 1:09:48 AM
Xylenes, Total	ND	4.0		µg/L	2	3/5/2013 1:09:48 AM
Surr: 4-Bromofluorobenzene	86.8	69.7-152		%REC	2	3/5/2013 1:09:48 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1302934

06-Mar-13

Client: LTE
Project: Davis #1

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R8955	RunNo:	8955					
Prep Date:		Analysis Date:	3/4/2013	SeqNo:	255896	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	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		93.9	69.7	152			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R8955	RunNo:	8955					
Prep Date:		Analysis Date:	3/4/2013	SeqNo:	255897	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	80	120			
Toluene	20	1.0	20.00	0	102	80	120			
Ethylbenzene	21	1.0	20.00	0	103	80	120			
Xylenes, Total	63	2.0	60.00	0	105	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	69.7	152			

Sample ID	1302934-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-1	Batch ID:	R8955	RunNo:	8955					
Prep Date:		Analysis Date:	3/4/2013	SeqNo:	255911	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	39	2.0	40.00	0	96.7	80	120			
Toluene	39	2.0	40.00	0	98.0	80	120			
Ethylbenzene	39	2.0	40.00	0	98.0	80	120			
Xylenes, Total	120	4.0	120.0	0	101	80	120			
Surr: 4-Bromofluorobenzene	39		40.00		98.5	69.7	152			

Sample ID	1302934-001AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-1	Batch ID:	R8955	RunNo:	8955					
Prep Date:		Analysis Date:	3/4/2013	SeqNo:	255912	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	36	2.0	40.00	0	90.1	80	120	7.02	20	
Toluene	37	2.0	40.00	0	91.9	80	120	6.44	20	
Ethylbenzene	37	2.0	40.00	0	92.5	80	120	5.74	20	
Xylenes, Total	110	4.0	120.0	0	95.0	80	120	6.27	20	
Surr: 4-Bromofluorobenzene	40		40.00		99.9	69.7	152	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits

Sample Log-In Check List

Client Name: **LTE** Work Order Number: **1302934**

Received by/date: AG 02/28/13

Logged By: **Anne Thorne** 2/28/2013 9:59:00 AM

Anne Thorne

Completed By: **Anne Thorne** 2/28/2013

Anne Thorne

Reviewed By: MA 02/28/13

Chain of Custody

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

Log In

4. Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. 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)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

18. Additional remarks:

19. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			

www.hallenvironmental.com

Tel. 505-345-3975 Fax 505-345-4107

BTEX + MTBE + TMBs (8021)
BTEX + MTBE + TMBs (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^{3-} , SO_4^{2-})
8081 Pesticides / 8082 PCB's
8260B (VOA)
8270 (Semi-VOA)
Air Bubbles (V or N)

[illegible]

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.



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

June 28, 2013

Ashley Ager

LTE

2243 Main Ave Suite 3

Durango, CO 81301

TEL: (970) 946-1093

FAX

RE: Davis # 1

OrderNo.: 1306970

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 3 sample(s) on 6/22/2013 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.

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1306970**

Date Reported: **6/28/2013**

CLIENT: LTE

Client Sample ID: MW-6

Project: Davis # 1

Collection Date: 6/21/2013 9:20:00 AM

Lab ID: 1306970-001

Matrix: AQUEOUS

Received Date: 6/22/2013 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	6/25/2013 5:40:17 PM	R11554
Toluene	9.8	1.0		µg/L	1	6/25/2013 5:40:17 PM	R11554
Ethylbenzene	ND	1.0		µg/L	1	6/25/2013 5:40:17 PM	R11554
Xylenes, Total	12	2.0		µg/L	1	6/25/2013 5:40:17 PM	R11554
Surr: 4-Bromofluorobenzene	102	69.4-129		%REC	1	6/25/2013 5:40:17 PM	R11554

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
	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
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1306970**

Date Reported: **6/28/2013**

CLIENT: LTE

Client Sample ID: MW-7

Project: Davis # 1

Collection Date: 6/21/2013 10:00:00 AM

Lab ID: 1306970-002

Matrix: AQUEOUS

Received Date: 6/22/2013 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	6/25/2013 6:08:57 PM	R11554
Toluene	ND	1.0		µg/L	1	6/25/2013 6:08:57 PM	R11554
Ethylbenzene	ND	1.0		µg/L	1	6/25/2013 6:08:57 PM	R11554
Xylenes, Total	ND	2.0		µg/L	1	6/25/2013 6:08:57 PM	R11554
Surr: 4-Bromofluorobenzene	98.3	69.4-129		%REC	1	6/25/2013 6:08:57 PM	R11554

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
	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
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 2 of 4

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1306970

Date Reported: 6/28/2013

CLIENT: LTE

Client Sample ID: Trip Blank

Project: Davis # 1

Collection Date: 6/21/2013 7:00:00 AM

Lab ID: 1306970-003

Matrix: TRIP BLANK

Received Date: 6/22/2013 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	6/25/2013 6:37:37 PM	R11554
Benzene	ND	1.0		µg/L	1	6/25/2013 6:37:37 PM	R11554
Toluene	ND	1.0		µg/L	1	6/25/2013 6:37:37 PM	R11554
Ethylbenzene	ND	1.0		µg/L	1	6/25/2013 6:37:37 PM	R11554
Xylenes, Total	ND	2.0		µg/L	1	6/25/2013 6:37:37 PM	R11554
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	6/25/2013 6:37:37 PM	R11554
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	6/25/2013 6:37:37 PM	R11554
Surr: 4-Bromofluorobenzene	97.1	69.4-129		%REC	1	6/25/2013 6:37:37 PM	R11554

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
	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
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 3 of 4

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1306970

28-Jun-13

Client: LTE
Project: Davis # 1

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R11554	RunNo:	11554					
Prep Date:		Analysis Date:	6/25/2013	SeqNo:	327371	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.2	69.4	129			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R11554	RunNo:	11554					
Prep Date:		Analysis Date:	6/25/2013	SeqNo:	327372	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	23	2.5	20.00	0	113	76.8	124			
Benzene	22	1.0	20.00	0	109	80	120			
Toluene	22	1.0	20.00	0	109	80	120			
Ethylbenzene	21	1.0	20.00	0	107	80	120			
Xylenes, Total	65	2.0	60.00	0	108	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	101	80	120			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	102	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	69.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
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
O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
R RPD outside accepted recovery limits	RL Reporting Detection Limit

Sample Log-In Check List

Client Name: LTE

Work Order Number: 1306970

RcptNo: 1

Received by/date:	AF	06/22/13
Logged By:	Lindsay Mangin	6/22/2013 11:00:00 AM
Completed By:	Lindsay Mangin	6/24/2013 9:55:41 AM
Reviewed By:	[Signature]	06/24/2013

Chain of Custody

- Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? Courier

Log In

- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
- Was preservative added to bottles? Yes ☐ No ☒ NA ☐
- VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- 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)

- Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

- Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Yes			

