2017 ANNUAL GROUNDWATER REPORT

Miles Federal #1A
NMOCD CASE#: 3RP-223-0
Meter Code: 94810
T26N, R7W, Sec5, Unit F

SITE DETAILS

Site Location: Latitude: 36.515700 N, Longitude -107.601460 W
Land Type: Federal
Operator: Cross Timbers Energy, LLC

SITE BACKGROUND

Environmental Remediation activities at the Miles Federal #1A (Site) are managed pursuant to the procedures set forth in the document entitled, "Remediation Plan for Groundwater Encountered during Pit Closure Activities" (Remediation Plan, El Paso Natural Gas Company / El Paso Field Services Company, 1995). This Remediation Plan was conditionally approved by the New Mexico Oil Conservation Division (NMOCD) in correspondence dated November 30, 1995; and the NMOCD approval conditions were adopted into El Paso CGP Company (EPCGP's) program methods. Currently, the Site is operated by XTO Energy Inc. and is active.

The Site is located on Federal land. An initial site assessment was completed in January 1994, and an excavation to approximately 12 feet below ground surface (bgs) was completed in June of 1994. Several site investigations have occurred since 1994. Monitoring wells were installed in 1994 (MW-1) and 1999 (MW-2 and MW-3). Soil borings were advanced in 2016 (DP-1 and DP-2). Historically, free product recovery has been periodically encountered and recovered at the Site, but has not been observed since 2010. Currently, groundwater sampling is conducted on a semi-annual basis.

GROUNDWATER SAMPLING ACTIVITIES

Pursuant to the Remediation Plan, Stantec provided field work notifications via email to the NMOCD on May 30, 2017, and November 6, 2017, prior to initiating groundwater sampling activities at the Site. Copies of the 2017 NMOCD notifications are provided in Appendix A. On June 7 and November 14, 2017, water levels were gauged at MW-1, MW-2, and MW-3. Groundwater samples were collected from each well using HydraSleeve™ (HydraSleeve) no-purge groundwater sampling devices. The HydraSleeves were set during the previous sampling event approximately 0.5 foot above termination depth of the monitoring wells using a suspension tether and stainless steel weights to collect a sample from the screened interval.

Groundwater samples were placed into laboratory-supplied sample containers, packed on ice, and shipped under standard chain-of-custody protocols to TestAmerica Laboratories, Inc. in Pensacola, Florida where they were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). As requested by the NMOCD on November 13, 2017, BTEX constituents were analyzed using United States Environmental Protection Agency (EPA) Method 8260 during the November sampling event. The unused sample water was combined in a waste container and taken to Basin Disposal, Inc. for disposal. Waste disposal documentation is included as Appendix B.

2017 ANNUAL GROUNDWATER REPORT

Miles Federal #1A
NMOCD CASE#: 3RP-223-0
Meter Code: 94810
T26N, R7W, Sec5, Unit F

MOBILE DUAL PHASE EXTRACTION EVENTS

Mobile dual phase extraction (MDPE) events were completed on September 19 and 20, 2017, by AcuVac Remediation, LLC, of Houston, Texas (AcuVac). The planned MDPE activities were presented in a work plan dated June 29, 2017, and subsequently approved by the NMOCD. The NMOCD was notified of the start of the July MDPE activities on July 8, 2017. The purpose of the MDPE events was to evaluate whether MPDE would be effective in removing remaining hydrocarbons from monitoring well MW-1.

MDPE is a process combining soil vapor extraction (SVE) with groundwater depression to enhance the removal of liquid and vapor phase hydrocarbons. A submersible pump is used to simultaneously remove dissolved-phase contaminated groundwater, inducing a hydraulic gradient toward the extraction well, and creating groundwater depression to expose the hydrocarbon smear zone to SVE. Recovered liquids were transferred to a portable storage tank for off-site disposal. Recovered vapors were used as fuel and burned in the MDPE internal combustion engine (ICE), resulting in little to no emissions. Power generated by the ICE is used to create the induced vacuum for SVE.

Two 8-hour MDPE events were completed, using MW-1 as an extraction well. Based on field data collected by AcuVac, a total of approximately 0.6 gallons of hydrocarbons were recovered from MW-1. AcuVac's report summarizing the MDPE events at the Site is presented as Appendix C. Recovered fluids from the MDPE event where transported to Basin for disposal. Waste disposal documentation is included as Appendix B.

SUMMARY TABLES

Historic analytical and water level data are summarized in Table 1 and Table 2, respectively.

SITE MAPS

Groundwater analytical maps (Figures 1 and 3) and groundwater elevation contour maps (Figures 2 and 4) summarize results of the 2017 groundwater sampling and gauging events.

ANALYTICAL LAB REPORTS

The groundwater analytical lab reports are included as Appendix D.

GROUNDWATER RESULTS

- The groundwater flow direction is generally to the northwest at the Site (see Figures 2 and 4).

- The groundwater sample collected in November 2017 from MW-1 exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard (10 micrograms per liter [µg/L]) for benzene in groundwater. The remaining 2017 groundwater samples were either below the standard or not detected for benzene.

- Concentrations of toluene were either below the NMWQCC standard (750 µg/L) or not detected in the Site monitoring wells sampled in 2017.

- Concentrations of ethylbenzene were either below the NMWQCC standard (750 µg/L) or not detected in the Site monitoring wells sampled in 2017.

- Concentrations of total xylenes were either below the NMWQCC standard (600 µg/L) or not detected in the Site monitoring wells sampled in 2017.

PLANNED FUTURE ACTIVITIES

Groundwater monitoring events will be conducted on a semi-annual basis. Groundwater samples will be collected from monitoring wells not containing free product and analyzed for BTEX constituents using EPA Method 8260. No additional activities are planned for 2018 at this time. The activities completed in 2018 and their results will be summarized in the 2018 Annual Report, completed for submittal in early 2019.

P:\Word Processing\KINDER MORGAN\EL PASO - NM\MILES FED #1A\2017 ANNUAL REPORT (MILES FED #1A)\2018-03_Rpt_Miles Fed 1A_2017 Annual Report.doc

TABLES

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Miles Fed 1A					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-1	11/05/96	1050	1630	391	2620
MW-1	02/07/97	671	809	439	2550
MW-1	05/06/97	300	350	320	1880
MW-1	04/17/08	122	203	369	2550
MW-1	04/06/09	104	199	596	1840
MW-1	06/02/10	186	266	370	2320
MW-1	05/09/11	14.6	19.3	86.9	236
MW-1	05/15/12	60.9	79.9	136	602
MW-1	06/05/13	44	78	120	830
MW-1	09/10/13	300	510	250	2200
MW-1	12/11/13	21	37	21	230
MW-1	04/04/14	81	130	120	800
MW-1	10/24/14	73	32	95	1300
MW-1	05/31/15	68	79	95	940
MW-1	11/21/15	160	67	98	1200
MW-1	04/17/16	81	99	68	1100
MW-1	10/15/16	56	72	150	1300
MW-1	06/07/17	9.5	<10	32	95
MW-1	11/14/17	42	74	68	570
MW-2	10/15/99	<0.5	2.1	5.5	2.8
MW-2	07/15/02	<0.5	0.6	0.9	1.4
MW-2	04/17/08	<2	<2	<2	<6
MW-2	04/06/09	<1	<1	<1	<2
MW-2	06/02/10	<2	<2	<2	<6
MW-2	05/09/11	<1	<1	<1	<3
MW-2	05/15/12	<1	<1	<1	<3
MW-2	06/05/13	<0.14	<0.30	<0.20	<0.23
MW-2	09/10/13	<0.14	<0.30	<0.20	<0.23
MW-2	12/11/13	<2.0	<3.8	<2.0	<6.5
MW-2	04/04/14	<0.20	<0.38	<0.20	<0.65
MW-2	10/24/14	<0.38	<0.70	<0.50	<1.6
MW-2	05/31/15	<1.0	<5.0	<1.0	<5.0
MW-2	11/21/15	<1.0	<1.0	<1.0	<3.0
MW-2	04/17/16	<1.0	<5.0	<1.0	<5.0
MW-2	10/15/16	<1.0	<5.0	<1.0	<5.0
MW-2	06/07/17	<1.0	<5.0	<1.0	<5.0
MW-2	11/14/17	<1.0	<1.0	<1.0	<10

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Miles Fed 1A					
Location	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**
MW-3	10/15/99	<0.5	0.9	<0.5	3.1
MW-3	07/03/01	<0.5	<0.5	<0.5	<0.5
MW-3	04/17/08	<2	<2	<2	<6
MW-3	04/06/09	<1	<1	<1	<2
MW-3	06/02/10	<2	<2	<2	<6
MW-3	06/05/13	<0.14	<0.30	<0.20	<0.23
MW-3	09/10/13	<0.14	<0.30	<0.20	<0.23
MW-3	12/11/13	<0.20	<0.38	<0.20	<0.65
MW-3	04/04/14	<0.20	<0.38	<0.20	<0.65
MW-3	10/24/14	<0.38	<0.70	<0.50	<1.6
MW-3	05/31/15	<1.0	<5.0	<1.0	<5.0
MW-3	11/21/15	<1.0	<1.0	<1.0	<3.0
MW-3	04/17/16	<1.0	<5.0	<1.0	<5.0
MW-3	10/15/16	<1.0	<5.0	<1.0	<5.0
MW-3	06/07/17	<1.0	<5.0	<1.0	<5.0
MW-3	11/14/17	<1.0	<1.0	<1.0	<10

Notes:

The groundwater monitoring dates for each monitoring well where no groundwater samples were collected and analyzed have been omitted.

"µg/L" = micrograms per liter

Results highlighted yellow exceed their respective New Mexico Water Quality Control Commission (NMWQCC) standards.

"J" = Result is less than the reporting limit but greater than or equal to the method detection limit and the result in an approximate value.

"<" = analyte was not detected at the indicated reporting limit (some historic data were reported at the detection limit).

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Miles Fed 1A						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	11/05/96	6049.42	30.58	30.10	0.48	6019.20
MW-1	02/07/97	6049.42	30.05	29.91	0.14	6019.47
MW-1	05/06/97	6049.42	30.18	30.04	0.14	6019.34
MW-1	04/11/01	6049.42	31.81	30.61	1.20	6018.51
MW-1	07/03/01	6049.42	32.76	31.18	1.58	6017.84
MW-1	09/04/01	6049.42	31.80	30.68	1.12	6018.46
MW-1	10/01/01	6049.42	31.41	31.16	0.25	6018.19
MW-1	01/02/02	6049.42	32.17	31.20	0.97	6017.97
MW-1	04/01/02	6049.42	31.45	31.09	0.36	6018.24
MW-1	07/15/02	6049.42	32.35	31.43	0.92	6017.76
MW-1	10/08/02	6049.42	31.73	31.33	0.40	6017.99
MW-1	01/27/03	6049.42	31.59	31.21	0.38	6018.11
MW-1	04/26/03	6049.42	31.30	31.16	0.14	6018.22
MW-1	07/17/03	6049.42	32.31	31.73	0.58	6017.54
MW-1	01/19/04	6049.42	31.49	31.32	0.17	6018.05
MW-1	07/27/04	6049.42	32.47	31.89	0.58	6017.38
MW-1	10/20/04	6049.42	32.24	31.95	0.29	6017.39
MW-1	01/25/05	6049.42	31.91	31.75	0.16	6017.63
MW-1	04/14/05	6049.42	31.52	ND		6017.90
MW-1	07/19/05	6049.42	32.43	32.32	0.11	6017.07
MW-1	10/21/05	6049.42	32.02	ND		6017.40
MW-1	01/23/06	6049.42	31.93	31.92	0.01	6017.49
MW-1	04/28/06	6049.42	31.85	ND		6017.57
MW-1	07/26/06	6049.42	31.94	ND		6017.48
MW-1	10/24/06	6049.42	30.71	ND		6018.71
MW-1	01/17/07	6049.42	30.99	ND		6018.43
MW-1	04/24/07	6049.42	30.95	ND		6018.47
MW-1	07/31/07	6049.42	31.32	ND		6018.10
MW-1	10/25/07	6049.42	31.40	ND		6018.02
MW-1	01/25/08	6049.42	31.12	ND		6018.30
MW-1	04/17/08	6049.42	31.04	ND		6018.38
MW-1	07/23/08	6049.42	31.23	ND		6018.19
MW-1	10/08/08	6049.42	31.77	ND		6017.65
MW-1	01/16/09	6049.42	31.74	31.66	0.08	6017.74
MW-1	04/06/09	6049.42	31.82	ND		6017.60
MW-1	08/25/09	6049.42	32.30	ND		6017.12
MW-1	11/02/09	6049.42	32.20	ND		6017.22
MW-1	02/16/10	6049.42	31.74	ND		6017.68
MW-1	06/02/10	6049.42	31.53	31.50	0.03	6017.91
MW-1	09/27/10	6049.42	31.89	ND		6017.53
MW-1	11/01/10	6049.42	31.76	ND		6017.66

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Miles Fed 1A						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-1	02/01/11	6049.42	31.63	ND		6017.79
MW-1	05/09/11	6049.42	31.60	ND		6017.82
MW-1	09/23/11	6049.42	32.40	ND		6017.02
MW-1	11/02/11	6049.42	32.27	ND		6017.15
MW-1	02/22/12	6049.42	31.99	ND		6017.43
MW-1	05/15/12	6049.42	32.08	ND		6017.34
MW-1	06/05/13	6049.42	31.80	ND		6017.62
MW-1	09/10/13	6049.42	31.30	ND		6018.12
MW-1	12/11/13	6049.42	31.16	ND		6018.26
MW-1	04/04/14	6049.42	31.22	ND		6018.20
MW-1	10/24/14	6049.42	31.50	ND		6017.92
MW-1	05/31/15	6049.42	31.36	ND		6018.06
MW-1	11/21/15	6049.42	31.01	ND		6018.41
MW-1	04/17/16	6049.42	30.23	ND		6019.19
MW-1	10/15/16	6049.42	31.11	ND		6018.31
MW-1	06/07/17	6049.42	30.70	ND		6018.72
MW-1	11/14/17	6049.42	30.82	ND		6018.60

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Miles Fed 1A						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-2	10/15/99	6049.22	27.97	NR		6021.25
MW-2	07/03/01	6049.22	32.51	NR		6016.71
MW-2	09/04/01	6049.22	28.30	NR		6020.92
MW-2	10/01/01	6049.22	28.61	NR		6020.61
MW-2	07/15/02	6049.22	31.46	NR		6017.76
MW-2	10/08/02	6049.22	30.77	NR		6018.45
MW-2	01/27/03	6049.22	30.64	ND		6018.58
MW-2	04/26/03	6049.22	31.51	ND		6017.71
MW-2	07/17/03	6049.22	31.23	ND		6017.99
MW-2	01/19/04	6049.22	31.14	ND		6018.08
MW-2	07/27/04	6049.22	31.37	ND		6017.85
MW-2	10/20/04	6049.22	31.33	ND		6017.89
MW-2	01/25/05	6049.22	31.56	ND		6017.66
MW-2	04/14/05	6049.22	31.33	ND		6017.89
MW-2	07/19/05	6049.22	31.97	ND		6017.25
MW-2	10/21/05	6049.22	31.09	ND		6018.13
MW-2	01/23/06	6049.22	31.19	ND		6018.03
MW-2	04/28/06	6049.22	31.21	ND		6018.01
MW-2	07/26/06	6049.22	31.24	ND		6017.98
MW-2	10/24/06	6049.22	30.55	ND		6018.67
MW-2	01/17/07	6049.22	30.29	ND		6018.93
MW-2	04/24/07	6049.22	30.75	ND		6018.47
MW-2	07/31/07	6049.22	30.56	ND		6018.66
MW-2	10/25/07	6049.22	30.71	ND		6018.51
MW-2	01/25/08	6049.22	30.41	ND		6018.81
MW-2	04/17/08	6049.22	30.36	ND		6018.86
MW-2	07/23/08	6049.22	31.14	ND		6018.08
MW-2	10/08/08	6049.22	31.57	ND		6017.65
MW-2	01/16/09	6049.22	30.98	ND		6018.24
MW-2	04/06/09	6049.22	31.40	ND		6017.82
MW-2	08/25/09	6049.22	31.85	ND		6017.37
MW-2	11/02/09	6049.22	31.93	ND		6017.29
MW-2	02/16/10	6049.22	31.43	ND		6017.79
MW-2	06/02/10	6049.22	31.33	ND		6017.89
MW-2	09/27/10	6049.22	31.63	ND		6017.59
MW-2	11/01/10	6049.22	31.57	ND		6017.65
MW-2	02/01/11	6049.22	31.39	ND		6017.83
MW-2	05/09/11	6049.22	31.40	ND		6017.82
MW-2	09/23/11	6049.22	32.05	ND		6017.17
MW-2	11/02/11	6049.22	32.01	ND		6017.21
MW-2	02/22/12	6049.22	31.76	ND		6017.46

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Miles Fed 1A						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-2	05/15/12	6049.22	31.87	ND		6017.35
MW-2	06/05/13	6049.22	31.56	ND		6017.66
MW-2	09/10/13	6049.22	31.13	ND		6018.09
MW-2	12/11/13	6049.22	30.95	ND		6018.27
MW-2	04/04/14	6049.22	31.02	ND		6018.20
MW-2	10/24/14	6049.22	31.32	ND		6017.90
MW-2	05/31/15	6049.22	31.37	ND		6017.85
MW-2	11/21/15	6049.22	30.80	ND		6018.42
MW-2	04/17/16	6049.22	30.75	ND		6018.47
MW-2	10/15/16	6049.22	30.89	ND		6018.33
MW-2	06/07/17	6049.22	30.48	ND		6018.74
MW-2	11/14/17	6049.22	30.61	ND		6018.61

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Miles Fed 1A						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-3	10/15/99	6049.32	27.92	NR		6021.40
MW-3	07/03/01	6049.32	28.97	NR		6020.35
MW-3	09/04/01	6049.32	28.40	NR		6020.92
MW-3	10/01/01	6049.32	28.63	NR		6020.69
MW-3	07/15/02	6049.32	31.46	NR		6017.86
MW-3	10/08/02	6049.32	31.22	NR		6018.10
MW-3	01/27/03	6049.32	31.11	ND		6018.21
MW-3	04/26/03	6049.32	30.99	ND		6018.33
MW-3	07/17/03	6049.32	31.62	ND		6017.70
MW-3	01/19/04	6049.32	30.66	ND		6018.66
MW-3	07/27/04	6049.32	31.30	ND		6018.02
MW-3	10/20/04	6049.32	31.32	ND		6018.00
MW-3	01/25/05	6049.32	31.08	ND		6018.24
MW-3	04/14/05	6049.32	30.87	ND		6018.45
MW-3	07/19/05	6049.32	31.56	ND		6017.76
MW-3	10/21/05	6049.32	31.66	ND		6017.66
MW-3	01/23/06	6049.32	31.61	ND		6017.71
MW-3	04/28/06	6049.32	31.62	ND		6017.70
MW-3	07/26/06	6049.32	31.72	ND		6017.60
MW-3	10/24/06	6049.32	30.03	ND		6019.29
MW-3	01/17/07	6049.32	30.81	ND		6018.51
MW-3	04/24/07	6049.32	30.28	ND		6019.04
MW-3	07/31/07	6049.32	31.12	ND		6018.20
MW-3	10/25/07	6049.32	31.19	ND		6018.13
MW-3	01/25/08	6049.32	20.93	ND		6028.39
MW-3	04/17/08	6049.32	30.36	ND		6018.96
MW-3	07/23/08	6049.32	30.58	ND		6018.74
MW-3	10/08/08	6049.32	31.15	ND		6018.17
MW-3	01/16/09	6049.32	31.47	ND		6017.85
MW-3	04/06/09	6049.32	30.93	ND		6018.39
MW-3	08/25/09	6049.32	31.60	ND		6017.72
MW-3	11/02/09	6049.32	31.47	ND		6017.85
MW-3	02/16/10	6049.32	30.89	ND		6018.43
MW-3	06/02/10	6049.32	30.88	ND		6018.44
MW-3	09/27/10	6049.32	31.20	ND		6018.12
MW-3	11/01/10	6049.32	30.96	ND		6018.36
MW-3	02/01/11	6049.32	30.91	ND		6018.41
MW-3	05/09/11	6049.32	30.95	ND		6018.37
MW-3	09/23/11	6049.32	31.55	ND		6017.77
MW-3	11/02/11	6049.32	31.52	ND		6017.80
MW-3	02/22/12	6049.32	31.37	ND		6017.95

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Miles Fed 1A						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-3	05/15/12	6049.32	31.45	ND		6017.87
MW-3	06/05/13	6049.32	31.15	ND		6018.17
MW-3	09/10/13	6049.32	30.58	ND		6018.74
MW-3	12/11/13	6049.32	30.43	ND		6018.89
MW-3	04/04/14	6049.32	30.51	ND		6018.81
MW-3	10/24/14	6049.32	30.82	ND		6018.50
MW-3	05/31/15	6049.32	30.66	ND		6018.66
MW-3	11/21/15	6049.32	30.29	ND		6019.03
MW-3	04/17/16	6049.32	30.23	ND		6019.09
MW-3	10/15/16	6049.32	30.42	ND		6018.90
MW-3	06/07/17	6049.32	30.01	ND		6019.31
MW-3	11/14/17	6049.32	30.10	ND		6019.22

Notes:
"ft" = feet
"TOC" = Top of casing
"LNAPL" = Light non-aqueous phase liquid
"ND" = LNAPL not detected
"NR" = LNAPL not recorded

FIGURES

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\MILES FEDERAL #1A\2017 MAPS\Miles_Fed_GARM_1SA_2017.mxd

LEGEND:

- 6050 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- GAS — NATURAL GAS LINE
- X — FENCE
- GAS VALVE
- MONITORING WELL
- SOIL BORING
- RIG ANCHOR
- SMA BENCHMARK
- WELLHEAD

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
µg/L = MICROGRAMS PER LITER
<1 = BELOW METHOD DETECTION LIMIT

ANALYTE	NMWQCC STANDARDS
B = Benzene	10 µg/L
T = Toluene	750 µg/L
E = Ethylbenzene	750 µg/L
X = Total Xylenes	620 µg/L

N

SCALE IN FEET
0 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	7/19/2017	SLG	SLG	SRV

TITLE:

GROUNDWATER ANALYTICAL RESULTS
JUNE 7, 2017

PROJECT:

MILES FED #1A
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

Stantec

Figure No.: 1

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\MILES FEDERAL #1A\2017 MAPS\Miles_Fed_GECM_1SA_2017.mxd

FORMER EPC PIT
EXCAVATED TO 12 FEET

SMA BENCHMARK
ELEV. 6046.42'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL

MW-1
6018.72

MW-2
6018.74

MW-3
6019.31

6018.8

6019

6019.2

6045

6050

WELLHEAD

SEPARATOR

(2) ELECTRIC BOX

METER
HOUSE

CAÑON LARGO

AERIAL IMAGERY FROM GOOGLE EARTH, DATED 10/5/2016

LEGEND:

- 6050 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- GAS — NATURAL GAS LINE
- FENCE
- GAS VALVE
- MONITORING WELL
- RIG ANCHOR
- SMA BENCHMARK
- WELLHEAD

NOTES:

6019.03 — GROUNDWATER ELEVATION FEET ABOVE MEAN SEA LEVEL

6018.8 — WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL, 0.2 FOOT CONTOUR INTERVAL)

DIRECTION OF APPARENT GROUNDWATER FLOW

N

SCALE IN FEET
0 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	7/19/2017	SLG	SLG	SRV

TITLE:

GROUNDWATER ELEVATION MAP
JUNE 7, 2017

PROJECT:

MILES FED #1A
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

Stantec

Figure No.: 2

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\MILES FEDERAL #1A\2017 MAPS\Miles_Fed_GARM_2SA_2017.mxd

LEGEND:

- 6050 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- GAS — NATURAL GAS LINE
- X — FENCE
- GAS VALVE
- MONITORING WELL
- SOIL BORING
- RIG ANCHOR
- SMA BENCHMARK
- WELLHEAD

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
µg/L = MICROGRAMS PER LITER
<1 = BELOW METHOD DETECTION LIMIT

ANALYTE	NMWQCC STANDARDS
B = Benzene	10 µg/L
T = Toluene	750 µg/L
E = Ethylbenzene	750 µg/L
X = Total Xylenes	620 µg/L

N

SCALE IN FEET
0 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	11/29/2017	SLG	SLG	SRV

TITLE:

GROUNDWATER ANALYTICAL RESULTS
NOVEMBER 14, 2017

PROJECT:
MILES FED #1A
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

Stantec

Figure No.: **3**

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\MILES FEDERAL #1A\2017 MAPS\Miles_Fed_GECM_2SA_2017.mxd

FORMER EPC PIT
EXCAVATED TO 12 FEET

SMA BENCHMARK
ELEV. 6046.42'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL

MW-1
6018.60

MW-2
6018.61

MW-3
6019.22

6018.8

6019

6019.2

6045

6050

WELLHEAD

SEPARATOR

(2) ELECTRIC BOX

METER
HOUSE

CAÑON LARGO

AERIAL IMAGERY FROM GOOGLE EARTH, DATED 10/5/2016

LEGEND:

- 6050 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- G A S — NATURAL GAS LINE
- —X— FENCE
- GAS VALVE
- MONITORING WELL
- RIG ANCHOR
- SMA BENCHMARK
- WELLHEAD

NOTES:

6019.03 GROUNDWATER ELEVATION FEET ABOVE MEAN SEA LEVEL

6018.8 WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL, 0.2 FOOT CONTOUR INTERVAL)

DIRECTION OF APPARENT GROUNDWATER FLOW

N

SCALE IN FEET
0 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	11/29/2017	SLG	SLG	SRV

TITLE:

GROUNDWATER ELEVATION MAP
NOVEMBER 14, 2017

PROJECT:

MILES FED #1A
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

Stantec

Figure No.: 4

APPENDICES

APPENDIX A – NMOCD NOTIFICATION OF SITE ACTIVITIES

APPENDIX B – WASTE DISPOSAL DOCUMENTATION

APPENDIX C – MOBILE DUAL PHASE EXTRACTION REPORT

APPENDIX D – JUNE 7, 2017 GROUNDWATER SAMPLING ANALYTICAL REPORT
NOVEMBER 14, 2017 GROUNDWATER SAMPLING ANALYTICAL REPORT

APPENDIX A

From: Varsa, Steve
To: Randolph.Bayliss@state.nm.us
Cc: brandon.powell@state.nm.us; Wiley, Joe
Subject: El Paso CGP Company - Notice of upcoming groundwater sampling activities
Date: Tuesday, May 30, 2017 3:05:18 PM

Hi Randy –

This correspondence is to provide notice to the NMOCD of upcoming semi-annual groundwater sampling and monitoring activities at the following project sites:

Site Name	NMOCD Case #
Canada Mesa #2	3RP-155-0
Fields A#7A	3RP-170-0
Fogelson 4-1	3RP-068-0
Gallegos Canyon Unit #124E	3RP-407-0
GCU Com A #142E	3RP-179-0
Hammond #41A	3RP-186-0
James F. Bell #1E	3RP-196-0
Johnston Fed #4	3RP-201-0
Johnston Fed #6A	3RP-202-0
K27 LDO72	3RP-204-0
Knight #1	3RP-207-0
Lateral L 40 Line Drip	3RP-212-0
Lat O-21 Line Drip	3RP-213-0
Lindrith B #24	3RP-214-0
Miles Fed #1A	3RP-223-0
Sandoval GC A #1A	3RP-235-0
Standard Oil Com #1	3RP-238-0
State Gas Com N #1	3RP-239-0

Groundwater sampling and monitoring is planned to be conducted the week of June 5, 2017.

Thank you,
Steve

Stephen Varsa, P.G.
Supervising Hydrogeologist
MWH, now part of Stantec
11153 Aurora Avenue
Des Moines, Iowa 50322
Direct: (515) 251-1020
Cell: (515) 710-7523

Office: (515) 253-0830
steve.varsa@stantec.com

From:	Varsa, Steve
To:	Bayliss, Randolph, EMNRD
Cc:	Griswold, Jim, EMNRD; Perrin, Charlie, EMNRD; Powell, Brandon, EMNRD; Smith, Cory, EMNRD; Fields, Vanessa, EMNRD; Wiley, Joe
Subject:	RE: MPDE Work Plan Approvals
Date:	Saturday, July 08, 2017 4:55:00 PM

Hi Randy –

Pursuant to the conditions in the above-referenced July 5, 2017, approval letter, the following is the schedule for the MDPE activities:

James F. Bell #1E – start late the afternoon of Tuesday, July 11, and will go through Friday, July 14.
Johnston Federal #4 and Johnston Federal #6A – both sites beginning on Saturday, July 15, and go through Tuesday, July 18.
No work planned for Wednesday, July 19 (rest day).
GCU #124 – Thursday, July 20 through Sunday, July 23.
Knight #1 – Monday and Tuesday, July 24 and 25.
K27 LD072 – Wednesday, July 26.
Miles Federal #1A – Thursday, July 27.

As noted in the work plan submittal, work at State Gas Com N#1 is still pending receipt of a State Water Easement. NMOCD will be notified once the State Gas Com pilot testing activities have been scheduled, or if there are changes to the schedule offered above. Do you anticipate any OCD staff will be on-site during one or more of these events?

Thank you,
Steve

Stephen Varsa, P.G.
Supervising Hydrogeologist
MWH, now part of Stantec
11153 Aurora Avenue
Des Moines, Iowa 50322
Direct: (515) 251-1020
Cell: (515) 710-7523
Office: (515) 253-0830
steve.varsa@stantec.com

From: Bayliss, Randolph, EMNRD [mailto:Randolph.Bayliss@state.nm.us]
Sent: Wednesday, July 05, 2017 9:08 AM
To: Wiley, Joe <Joe_Wiley@kindermorgan.com>; Varsa, Steve <steve.varsa@stantec.com>
Cc: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Perrin, Charlie, EMNRD <charlie.perrin@state.nm.us>; Powell, Brandon, EMNRD <Brandon.Powell@state.nm.us>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>

Subject: MPDE Work Plan Approvals

Good morning Joe, Steve, others.

Thank you for your proposed MPDE efforts.

Cheers

Randolph Bayliss, P.E.
Hydrologist, Districts III and IV
NMOCD Environmental Bureau
1220 S St Francis St, Santa Fe, NM 87505
505-476-3084, Cell 575-840-5961

From: Varsa, Steve
To: Bayliss, Randolph, EMNRD
Cc: Smith, Cory, EMNRD; Fields, Vanessa, EMNRD; Wiley, Joe
Subject: El Paso CGP Company - Notice of upcoming groundwater sampling activities
Date: Monday, November 06, 2017 11:41:36 AM

Hi Randy –

This correspondence is to provide notice to the NMOCD of upcoming semiannual groundwater sampling and monitoring activities at the following project sites:

Site Name	NMOCD Case #
Canada Mesa #2	3RP-155-0
Fields A#7A	3RP-170-0
Fogelson 4-1	3RP-068-0
Gallegos Canyon Unit #124E	3RP-407-0
GCU Com A #142E	3RP-179-0
James F. Bell #1E	3RP-196-0
Johnston Fed #4	3RP-201-0
Johnston Fed #6A	3RP-202-0
K27 LDO72	3RP-204-0
Knight #1	3RP-207-0
Lateral L 40 Line Drip	3RP-212-0
Lat O-21 Line Drip	3RP-213-0
Miles Fed #1A	3RP-223-0
Sandoval GC A #1A	3RP-235-0
Standard Oil Com #1	3RP-238-0
State Gas Com N #1	3RP-239-0

Groundwater sampling and monitoring is planned to be conducted November 10-14, 2017.

Please contact Joe Wiley, remediation manager with El Paso CGP Company, at (713) 420-3475, or me, if you have any questions.

Thank you,
Steve

Stephen Varsa, P.G.
Supervising Hydrogeologist
MWH, now part of Stantec
11153 Aurora Avenue
Des Moines, Iowa 50322
Direct: (515) 251-1020
Cell: (515) 710-7523
Office: (515) 253-0830
steve.varsa@stantec.com

APPENDIX B

BASIN DISPOSAL

30 Years of Environmental Health and Safety Excellence

200 Montana, Bloomfield, NM 87413
505-632-8936 or 505-334-3013
OPEN 24 Hours per Day

NO. 687962
NMOCD PERMIT: NM -001-0005
Oil Field Waste Document, Form C138
INVOICE:

DATE 6-8-12 DEL. TKT#.

GENERATOR: EL PASO BILL TO: EL PASO

HAULING CO. DRIVER: Sarah Gardner
(Print Full Name)

ORDERED BY: Joseph Wiley CODES:

WASTE DESCRIPTION: ☒ Exempt Oilfield Waste ☐ Produced Water ☐ Drilling/Completion Fluids ☐ Reserve Pit

STATE: ☑ NM ☐ CO ☐ AZ ☐ UT TREATMENT/DISPOSAL METHODS: ☒ EVAPORATION ☒ INJECTION ☒ TREATING PLANT

NO.	TRUCK	LOCATION(S)	VOLUME	COST	H2S	COST	TOTAL	TIME
1	01	JICARILLA E #1E	1	75			75	4:13PM
2		STATE GAS COM N #1 CARRACAS #2						
3		MESTEJA Fields A #2A						
4		Lindrith B #24 Hamm #4 #4A						
5		KNIGHT #1 K271072						

I, _____ representitive or authorized agent for the above generator and hauler hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination that the above described waste is RCRA Exempt Oil field wastes.

☐ Approved ☐ Denied ATTENDANT SIGNATURE _____

san juan reproduction 168-6

BASIN DISPOSAL

30 Years of Environmental Health and Safety Excellence

200 Montana, Bloomfield, NM 87413
505-632-8936 or 505-334-3013
OPEN 24 Hours per Day

NO. 695332
NMOCD PERMIT: NM -001-0005
Oil Field Waste Document, Form C138
INVOICE:

DATE 9-20-17

DEL. TKT#.

GENERATOR: El Paso

BILL TO: El Paso

HAULING CO. Sierra

DRIVER:
(Print Full Name)

ORDERED BY: Joseph Wiley

CODES:

WASTE DESCRIPTION: ☒ Exempt Oilfield Waste ☐ Produced Water ☐ Drilling/Completion Fluids ☐ Reserve Pit

STATE: ☐ NM ☐ CO ☐ AZ ☐ UT

TREATMENT/DISPOSAL METHODS: ☒ EVAPORATION ☒ INJECTION ☒ TREATING PLANT

NO.	TRUCK	LOCATION(S)	VOLUME	COST	H2S	COST	TOTAL	TIME
1		miles Fed 1A	18	70			12.60	
2							17 SEP 20	5:32PM
3								
4								
5								

I, [signature] [illegible] representitive or authorized agent for the above generator and hauler hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination that the above described waste is RCRA Exempt Oil field wastes.

☑ Approved ☐ Denied ATTENDANT SIGNATURE [signature]

san juan reproduction 168-6

BASIN DISPOSAL

30 Years of Environmental Health and Safety Excellence

200 Montana, Bloomfield, NM 87413
505-632-8936 or 505-334-3013
OPEN 24 Hours per Day

NO. 700071

NMOCD PERMIT: NM -001-0005
Oil Field Waste Document, Form C138
INVOICE:

DATE 11-14-17

DEL. TKT#.

GENERATOR: El Paso

BILL TO: El Paso

HAULING CO. Stanteo

DRIVER: Sam Spring
(Print Full Name)

ORDERED BY: Joseph Wiley

CODES:

WASTE DESCRIPTION: ☒ Exempt Oilfield Waste ☐ Produced Water ☐ Drilling/Completion Fluids ☐ Reserve Pit

STATE: ☑ NM ☐ CO ☐ AZ ☐ UT

TREATMENT/DISPOSAL METHODS: ☒ EVAPORATION ☒ INJECTION ☒ TREATING PLANT

NO.	TRUCK	LOCATION(S)	VOLUME	COST	H2S	COST	TOTAL	TIME
1	1	Fogelson 4-1	1	75			75 17 NOV 14	2:31 pm
2		~~State Gas Com~~, Knight JF Bell, ~~Lat L-40~~, ~~Std Oil Com~~						
3		~~Sandoval~~, GCU 124E ~~J Fed 4~~, ~~J Fed 6~~						
4		Fields A7A, GCU 142E Fogelson, Canada Mesa, K-27						
5		Miles Fed						

I, _____ representitive or authorized agent for the above generator and hauler hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination that the above described waste is RCRA Exempt Oil field wastes.

☑ Approved ☐ Denied ATTENDANT SIGNATURE _____

san juan reproduction 168-6

APPENDIX C

AcuVac Remediation, LLC
1656-H Townhurst, Houston, Texas 77043
713.468.6688 • www.acuvac.com

September 29, 2017

Mr. Stephen Varsa
Supervising Hydrogeologist
Stantec Consulting Services, Inc.
11153 Aurora Avenue
Des Moines, IA 50322

Dear Stephen:

Re: Miles Fed #1A, Rio Arriba County, NM (Event #1)

At your request, AcuVac Remediation, LLC (AcuVac) performed two 8.0-hour Mobile Dual Phase Extraction (MDPE) Events; #1A and #1B on well MW-1, at the above referenced site (Site) on September 19, and 20, 2017, respectively. Following is the Report and a copy of the Operating Data collected during Event #1. Additionally, the attached Table #1 contains the Summary Well Data, and Table #2 contains the Summary Recovery Data.

The purpose of the MDPE events was to enhance recovery of Phase Separated Hydrocarbons (PSH) present at the Site through the removal of petroleum hydrocarbons in both liquid and vapor phases. PSH is referred to as petroleum hydrocarbons and Light Non-Aqueous Phase Liquids (LNAPL). The source of the PSH is a historical release of natural gas condensate.

OBJECTIVES

The objectives of the MDPE events were to:

- Maximize liquid and vapor phase petroleum hydrocarbon removal from groundwater and soils in the subsurface formations within the influence of the extraction well.
- Expose the capillary fringe area and below to the extraction well induced vacuums.
- Increase the vapor phase and liquid LNAPL specific yields with high induced vacuums.
- Create an induced hydraulic gradient to gain hydraulic control of the area surrounding the extraction well during the event periods.
- Select and monitor the groundwater depression and pump rates to accomplish the above objectives.

METHODS AND EQUIPMENT

AcuVac owns and maintains an inventory of equipment to perform MDPE events. No third party equipment was utilized. The events at the Site were conducted using the AcuVac I-6 System (System) with a Roots RAI-33 blower used as a vacuum pump and a Roots RAI-22 positive displacement blower. The following table lists equipment and instrumentation employed during Event #1, and the data element captured by each.

Equipment and Instrumentation Employed by AcuVac	
Measurement Equipment	**Data Element**
Extraction Well Induced Vacuum and Flow	
Dwyer Magnehelic Gauges	Extraction Well Vacuum
Dwyer Averaging Pitot Tubes / Magnehelic Gauges	Extractions Well Vapor Flow
Observation Wells	
Dwyer Digital Manometer	Vacuum / Pressure Influence
Extraction Well Vapor Monitoring	
V-1 vacuum box	Extraction Well Non-Diluted Vapor Sample Collection
HORIBA® Analyzer	Extraction Well Vapor TPH Concentration
QRae Mini II O_2 Monitor	Extraction Well Vapor Oxygen Content
LNAPL Thickness (if present)	
Solinst Interface Probes Model 122	Depth to LNAPL and Depth to Groundwater
Liquid Recovery	
Totalizer Flow Meter	Liquid Flow and Total Volume
Grundfos Red-Flo 2 Total Fluids Pump	In-Well Pumping
Grundfos Variable Frequency Drive	Pump Speed and Other Diagnostics
Groundwater Depression / Upwelling	
In-Situ Level Troll 700 Data Logger	Liquid Column in Extraction and Observation Wells
In-Situ Vented Cable with Chamber	Equalize Well Vacuum/Pressure
In-Situ Rugged Reader Data Logger Interface	Capture Readings from Data Logger Trolls
Atmospheric Conditions	
Testo Model 511	Relative and Absolute Barometric Pressure

The vacuum extraction portion of the System consists of a vacuum pump driven by an internal combustion engine (IC engine). The vacuum pump was connected to the extraction well, and the vacuum created on the extraction well caused light hydrocarbons in the soil and on the groundwater to volatilize and flow through a moisture knockout tank to the vacuum pump and the IC engine where they were burned as part of the normal combustion process. Propane was used as auxiliary fuel to help power the engine if the well vapors did not provide the required energy.

The IC engine provided the power necessary to achieve and maintain high induced vacuums and/or high well vapor flows required to maximize the vacuum radius of influence for pilot tests and short term event remediation.

Emissions from the engine were passed through three catalytic converters to maximize destruction of removed hydrocarbon vapors. The engine's fuel-to-air ratio was adjusted to maintain efficient combustion. Because the engine is the power source for the equipment, the System stops when the engine stops. This prevents an uncontrolled release of hydrocarbons. Since the System is held entirely under vacuum, any leaks in the seals or connections are leaked into the System and not emitted into the atmosphere. The engine is automatically shut down by vacuum loss, low oil pressure, over speed, or overheating.

Groundwater extraction was provided by an in-well Grundfos Redi-Flo 2 total fluids pump that discharged through a totalizer/flow meter. The discharge line from this meter was then connected to a stand-by tank. The electrical power for the groundwater pump was supplied from a 120v Honda generator. The groundwater flow rate was adjusted to maintain a target level. An interface meter was used to collect depth to groundwater and depth to LNAPL measurements. Grab samples of recovered liquid were taken periodically in a graduated cylinder to determine the average percentage of LANPL being recovered.

The design of the AcuVac System enabled independent control of both the induced well vacuum and the groundwater pumping functions such that the AcuVac team controlled the induced hydraulic gradient to increase exposure of the formation to soil vapor extraction (SVE). The ability to separate the vapor and liquid flows within the extraction well improved the LNAPL recovery rates and enabled the AcuVac team to record data specific to each media.

RECOVERY SUMMARY FOR MDPE EVENT #1

The Recovery Summary table below lists the groundwater and LNAPL recovery data for Event #1.

Recovery Summary			
	EV #1A	EV #1B	Total
	MW-1	MW-1	EV #1
Event Hours	8.0	8.0	16.0
GW Recovery	238	345	583
LNAPL Recovery			
Liquid	0	0	0
Vapor	0.4	0.2	0.6
Total	0.4	0.2	0.7
Gallons/Hour	**0.05**	**0.03**	**0.04**

SUMMARY OF MDPE EVENT #1A- WELL MW-1

- Event #1A was conducted on September 19, 2017. The total time for Event #1A was 8.0 hours. This was the first event completed from well MW-1, and therefore, there was no comparative data from this well.
- The total liquid volume recovered was 238 gals with no measureable liquid LNAPL recovered.
- Based on the HORIBA® analytical data, the total vapor LNAPL burned as IC engine fuel was 0.4 gals for a total liquid and vapor LNAPL recovery of 0.4 gals or 0.05 gals per hour.

- Average HORIBA® analytical data from the influent vapor samples for Event #1A is presented in the table below:

Influent Vapor Data Well MW-1		
Data Element		**EV #1A**
TPH- Max	ppmv	2,032
TPH- Avg	ppmv	1,615
TPH- Min	ppmv	986
TPH- Initial	ppmv	2,032
TPH- Final	ppmv	986
CO2- Avg	%	1.46
CO- Avg	%	0
O_2- Avg	%	18.9
H_2S- Avg	ppm	0

- The Event #1A extraction well induced vacuum and well vapor flow are presented in the table below.

Well Vacuum and Well Vapor Flow Well MW-1		
Data Element		**EV #1A**
Well Vacuum- Max	"H_2O	150.00
Well Vacuum- Avg	"H_2O	144.12
Well Vacuum- Min	"H_2O	100.00
Well Vapor Flow- Max	scfm	17.14
Well Vapor Flow- Avg	scfm	15.55
Well Vapor Flow- Min	scfm	9.33

- The groundwater pump inlet was set at 33.5 ft below top of casing (BTOC) in well MW-1. The average groundwater pump rate during the course of Event #1A was 0.30 gpm, and the maximum groundwater pump rate was 0.91 gpm. The total liquid volume recovered was 238 gals.
- No measured LNAPL was recorded in well MW-1 prior to the start of Event #1A, and no measureable LNAPL was recorded at the conclusion of the Event #1A.

The total LNAPL removed, including liquid and vapor, during the 8.0 hour Event #1A, well MW-1 was 0.4 gals.

ADDITIONAL INFORMATION

- Well MW-1 produced a steady amount of liquid volume during the course of the Event #1A. However, no measurable liquid LNAPL was visible in the sight glass during the course of the event or present in the collection tank at the conclusion of the event.
- All LNAPL volume recovered, 0.4 gals, was burned as IC engine fuel.
- The TPH concentrations were on a mostly decreasing trend during Event #1A. The maximum TPH concentration reading of 2,032 ppmv was the initial reading. The average TPH concentration reading was 1,615 ppmv, and the minimum reading of 986 ppmv was the final reading.

SUMMARY OF MDPE EVENT #1B- WELL MW-1

- The total time for Event #1B was 8.0 hours. Event #1B was conducted on September 20, 2017. The data is compared to Event #1A conducted on September 19, 2017 which had total event time of 8.0 hours.
- The total liquid volume recovered was 345 gals with no measureable liquid LNAPL recovered.
- The volume of liquid and vapor LNPAL recovered during Event #1B is compared with Event #1A in the table below.

LNAPL Recovery Well MW-1					
		Event #1B		Event #1A	
		Amount	Percent	Amount	Percent
Event Hours		8.0	-	8.0	-
GW Recovery	gals	345	-	238	-
NAPL Recovery					
Liquid	gals	0	0	0	0
Vapor	gals	0.2	100.00	0.4	100.00
Total	gals	0.2	100.00	0.4	100.00
Gallons/Hour		**0.03**	**-**	**0.05**	**-**

- Average HORIBA® analytical data from the influent vapor samples for Event #1B is compared with Event #1A in the table below:

Influent Vapor Data Well MW-1			
Data Element		**EV #1B**	**EV #1A**
TPH- Max	ppmv	1,038	2,032
TPH- Avg	ppmv	728	1,615
TPH- Min	ppmv	108	986
TPH- Initial	ppmv	108	2,032
TPH- Final	ppmv	730	986
CO_2	%	1.11	1.46
CO	%	0	0
O_2	%	18.9	18.9
H_2S	ppm	0	0

- The Event #1B extraction well induced vacuum and well vapor flow are compared with Event #1A in the table below.

Well Vacuum and Well Vapor Flow Well MW-1			
Data Element		**EV #1B**	**EV #1A**
Well Vacuum- Max	"H_2O	150.00	150.00
Well Vacuum- Avg	"H_2O	150.00	144.12
Well Vacuum- Min	"H_2O	150.00	100.00
Well Vapor Flow- Max	scfm	22.41	17..14
Well Vapor Flow- Avg	scfm	19.19	15.55
Well Vapor Flow- Min	scfm	14.63	9.33

- The groundwater pump inlet was set at 33.5 ft BTOC. The average groundwater pump rate during the course of Event #1B was 0.45 gpm, and the maximum groundwater pump rate was 0.99 gpm. The total liquid volume recovered was 345 gals.
- A LNAPL thickness of 0.03 ft in well MW-1 was recorded prior to the start of Event #1B and no LNAPL thickness in well MW-1 was recorded at the conclusion of the Event #1B.

The total LNAPL removed, including liquid and vapor, during the 8.0 hour Event #1B, well MW-1 was 0.2 gals.

ADDITIONAL INFORMATION

- Well MW-1 produced a steady amount of liquid volume during the course of the Event #1B However, no measurable liquid LNAPL was visible in the sight glass during the course of the event or present in the collection tank at the conclusion of the event.
- Well MW-1 produced more liquid during Event #1B than Event #1A indicating that the aquifer at the site may be more prolific than other sites in the area. The hydro equivalent increased by 0.60 ft at the end of Event #1A and then decreased 0.65 ft overnight. At the conclusion of Event #1B the hydro equivalent increased 0.90 ft indicating that liquid was being drawn into well MW-1.
- All LNAPL volume recovered, 0.4 gals, was burned as IC engine fuel.
- The TPH vapor concentrations increased during Event #1B and then decreased at the end of the event. The initial TPH reading was 108 ppmv, the average reading was 728 ppmv, the maximum reading, 1,038 ppmv, was recorded at event hour 4.5, and the final reading, 730 ppmv was recorded at event hour 7.5.

METHOD OF CALIBRATION AND CALCULATIONS

The HORIBA® Analytical instrument is calibrated with Hexane, CO and CO_2. The formula used to calculate the emission rate is:

$$ER = HC\ (ppmv) \times MW\ (Hexane) \times Flow\ Rate\ (scfm) \times 1.58E^{-7} \frac{(min)(lb\ mole)}{(hr)(ppmv)(ft^3)} = lbs/hr$$

INFORMATION INCLUDED WITH REPORT

- Table #1 Summary Well Data
- Table #2 Summary Recovery Data
- Recorded Data
- Photographs of the MDPE System and extraction well MW-1.

After you have reviewed the report and if you have any questions, please contact me. We appreciate you selecting AcuVac to provide this service.

Sincerely,
ACUVAC REMEDIATION, LLC

Paul D. Faucher
Vice President, Operations

Summary Well Data
Table #1

Event		1A	1B
WELL NO.		**MW-1**	**MW-1**
Total Event Hours		8.0	8.0
Total Depth	ft BGS	33.0	33.0
Well Screen	ft BGS	23.0 – 33.0	23.0 – 33.0
Well Size	in	2.0	2.0
Well Data			
DTGW - Static - Start Event	ft BTOC	31.35	31.40
DTLNAPL - Static - Start Event	ft BTOC	-	-
LNAPL	ft BTOC	-	-
Hydro-Equivalent- Beginning	ft BTOC	31.35	31.40
DTGW - End Event	ft BTOC	30.75	30.50
DTLNAPL - End Event	ft BTOC	-	-
LNAPL	ft BTOC	-	-
Hydro-Equivalent- Ending	ft BTOC	30.75	30.50
Extraction Data			
Maximum Extraction Well Vacuum	"H_2O	150.00	150.00
Average Extraction Well Vacuum	"H_2O	144.12	150.00
Minimum Extraction Well Vapor Flow	scfm	100.00	150.00
Maximum Extraction Well Vapor Flow	scfm	17.14	22.41
Average Extraction Well Vapor Flow	scfm	15.55	19.19
Minimum Extraction Well Vapor Flow	scfm	9.33	14.63
Maximum GW / LNAPL Pump Rate	gpm	0.91	0.99
Average GW / LNAPL Pump Rate	gpm	0.30	0.45
Influent Data			
Maximum TPH	ppmv	2,032	1,038
Average TPH	ppmv	1,615	728
Minimum TPH	ppmv	986	108
Initial TPH	ppmv	2,032	108
Final TPH	ppmv	986	730
Average CO_2	%	1.46	1.11
Average CO	%	0	0
Average O_2	%	18.9	18.9
Average H_2S	ppm	0	0

Summary Recovery Data
Table #2

Event		1A	1B
WELL NO.		**MW-1**	**MW-1**
Recovery Data- Current Event			
Total Liquid Volume Recovered	gals	238	345
Total Liquid LNAPL Recovered	gals	0	0
Total Liquid LNAPL Recovered / Total Liquid	%	0	0
Total Liquid LNAPL Recovered / Total LNAPL	%	0	0
Total Vapor LNAPL Recovered	gals	0.4	0.2
Total Vapor LNAPL Recovered / Total LNAPL	%	100.00	100.00
Total Vapor and Liquid LNAPL Recovered	gals	0.4	0.2
Average LNAPL Recovery	gals/hr	0.05	0.03
Total LNAPL Recovered	lbs	3	2
Total Volume of Well Vapors	cu. ft	7,464	9,211
Recovery Data- Cumulative			
Total Liquid Volume Recovered	gals	238	583
Total Liquid LNAPL Recovered	gals	0	0
Total Vapor LNAPL Recovered	gals	0.4	0.6
Total Vapor and Liquid LNAPL Recovered	gals	0.4	0.6
Average LNAPL Recovery	gals/hr	0.05	0.04
Total LNAPL Recovered	lbs	3	5
Total Volume of Well Vapors	cu. ft	7,464	16,675

AcuVac Remediation

OPERATING DATA – EVENT # 1A **PAGE # 1** **ACUVAC MDP SYSTEM**

Location: Miles Fed #1A, San Juan County, NM **Project Managers: Faucher / George / Hendley / Morris**

Well # MW-1

		Date	9/19/17					
		Time	0730	0800	0830	0900	0930	1000
		Hr Meter	8052.5	8053.0	8053.5	8054.0	8054.5	8055.0
ENGINE / BLOWER	Engine Speed	RPM	2000	1900	1900	1900	1900	1900
	Oil Pressure	psi	50	50	50	50	50	50
	Water Temp	°F	130	130	130	130	130	130
	Alternator	Volts	14	14	14	14	14	14
	Intake Vacuum	"Hg	18	18	18	18	18	18
	Gas Flow Fuel/Propane	cfh	110	110	105	100	100	100
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	100	120	130	150	150	150
	Extraction Well Flow	scfm	9.33	11.05	12.52	15.82	15.82	16.02
	Influent Vapor Temp.	°F	60	60	60	60	60	60
	Air Temp	°F	54	54	54	56	60	66
	Barometric Pressure	"Hg	29.88	29.88	29.88	29.88	29.88	29.88
VAPOR / INFLUENT	TPH	ppmv	-	-	-	2032	-	-
	CO_2	%	-	-	-	1.32	-	-
	CO	%	-	-	-	0	-	-
	O_2	%	-	-	-	18.8	-	-
	H_2S	ppm	-	-	-	0	-	-

NOTES

VACUUM STARTED AT 0730 HRS. GW PUMPING STARTED AT 0830 HRS. FROM 0730 TO 0830 GW UPWELLING OCCURRED. INITIAL PUMP RATE AT 0830 HRS WAS APPROX 1.0 GPM AND THEN DECREASED TO APPROX. .75 GPM AFTER THE WATER THAT HAD BEEN DRAWN INTO THE WELL WAS VACATED.

INITIAL WELL VAPOR SAMPLE OBTAINED AT 0900 HRS. TPH VAPOR CONCENTRATIONS IN THE 2,000 PPMV RANGE. THE DATA WAS LOCATED APPROXIMATELY 1.5 FT ABOVE THE PUMP INLET.

RECOVERY	GW Pump	ON/OFF	OFF	OFF	ON	ON	ON	ON
	Pump Rate	gals/min	-	-	.91	.52	.54	.62
	Total Volume	gals	-	-	-	27	43	58
	NAPL	% Vol	-	-	-	-	-	-
	NAPL	Gals	-	-	-	-	-	-
EW	Data Logger Head -.11	ft	-.11	+1.92	+3.24	-.03	-.02	-.02
	GW Depression	ft	-	-	-2.0	-2.0	-2.0	-2.0
	Extraction Well	DTNAPL	-					
	Extraction Well	DTGW	31.35					

LNAPL Ø

AcuVac Remediation

OPERATING NOTES - EVENT # 1 PAGE # 2 ACUVAC MDP SYSTEM

Location: Miles Fed, San Juan County, NM Project Managers: Faucher / George /Hendley / Morris

NOTES

9/19/17

0645 ARRIVED ON SITE. PARKED THE VEHICLES AND WALKED THE SITE TO DECIDE LOCATION OF VEHICLES AND THE ACUVAC SYSTEM. HELD THE TAILGATE SAFETY MEETING.

POSITIONED THE ACUVAC SYSTEM NEAR WELL MW-1. GAUGED THE WELL. NO NAPL PRESENT, DEPTH TO GROUNDWATER 31.35 FT BTOC. TD OF WELL 33.0 FT BGS. OR 35.10 FT BTOC. IN WELL PUMP POSITIONED 1.5 FT ABOVE WELL BOTTOM OR 33.50 FT BTOC

MOBILIZED THE ACUVAC EQUIPMENT ON WELL MW-1. CONNECTED THE VACUUM HOSE TO THE SYSTEM AND THE WELL MANIFOLD. SEALED THE WELL AND STARTED THE VACUUM.

0730 EVENT STARTED WITH SVE ONLY. THE STANDBY COLLECTION TANK WAS NOT WITHIN REACH OF WELL MW-1. ACUVAC AND STANTEC REPOSITIONED THE TRAILER THAT HELD THE TANK SO THE HOSES COULD REACH WITHOUT CROSSING THE ROAD.

0830 IN-WELL PUMP STARTED. INITIAL GROUNDWATER PUMP RATE APPROXIMATELY .75 GPM.

AcuVac Remediation

OPERATING DATA – EVENT # 1A | PAGE # 3 | ACUVAC MDP SYSTEM

Location: Miles Fed #1A, San Juan County, NM | **Project Managers: Faucher / George / Hendley / Morris**

Well # MW-1

		Date	9/19/17					
		Time	1030	1100	1130	1200	1230	1300
		Hr Meter	8055.5	8056.0	8056.5	8057.0	8057.5	8058.0
ENGINE / BLOWER	Engine Speed	RPM	1900	1800	1800	1800	1800	1800
	Oil Pressure	psi	50	50	50	50	50	50
	Water Temp	°F	130	130	130	130	130	130
	Alternator	Volts	14	14	14	14	14	14
	Intake Vacuum	"Hg	18	18	18	18	18	18
	Gas Flow Fuel/Propane	cfh	100	100	100	100	100	100
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	150
	Extraction Well Flow	scfm	16.02	16.02	16.02	16.02	17.14	17.14
	Influent Vapor Temp.	°F	60	60	60	60	60	60
	Air Temp	°F	66	69	73	74	75	76
	Barometric Pressure	"Hg	29.88	29.88	29.80	29.88	29.88	29.86
VAPOR / INFLUENT	TPH	ppmv	-	1762	-	-	-	1680
	CO_2	%	-	1.68	-	-	-	1.56
	CO	%	-	0	-	-	-	0
	O_2	%	-	19.2	-	-	-	18.9
	H_2S	ppm	-	0	-	-	-	0

NOTES

WELL VAC STEADY DURING PERIOD. WVF ↑ TO 17.14 SCFM AT 1230 HRS.
TPH VAPOR CONCENTRATIONS ON A SLIGHTLY DECREASING TREND DURING PERIOD.
GW RECOVERY MOSTLY STEADY DURING THE PERIOD.

RECOVERY	GW Pump	ON/OFF	ON	ON	ON	ON	ON	ON
	Pump Rate	gals/min	.37	.23	.35	.30	.22	
	Total Volume	gals	77	99	113	134	152	165
	NAPL	% Vol	-	-	-	-	-	-
	NAPL	Gals	-	-	-	-	-	-
EW	Data Logger Head	ft	-.02	-.02	-.02	-.03	-.02	-.03
	GW Depression	ft	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
	Extraction Well	DTNAPL						
	Extraction Well	DTGW						

AcuVac Remediation

OPERATING DATA – EVENT # 1A PAGE # 4 ACUVAC MDP SYSTEM

Location: Miles Fed #1A, San Juan County, NM **Project Managers: Faucher / George / Hendley / Morris**

Well # MW-1		Date	9/17/17					
		Time	1330	1400	1430	1500	1530	
		Hr Meter	8058.5	8059.0	8059.5	8060.0	8060.5	
ENGINE / BLOWER	Engine Speed	RPM	1800	1800	1800	1800	1800	
	Oil Pressure	psi	50	50	50	50	50	
	Water Temp	°F	140	140	140	140	140	
	Alternator	Volts	14	14	14	14	14	
	Intake Vacuum	"Hg	18	18	18	18	18	
	Gas Flow Fuel/Propane	cfh	100	100	100	100	100	
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	
	Extraction Well Flow	scfm	17.14	17.14	17.14	17.14	17.14	
	Influent Vapor Temp.	°F	60	60	60	60	60	
	Air Temp	°F	77	78	79	80	81	
	Barometric Pressure	"Hg	29.86	29.86	29.86	29.86	29.86	
VAPOR / INFLUENT	TPH	ppmv	-	-	-	986	-	
	CO_2	%	-	-	-	1.28	-	
	CO	%	-	-	-	0	-	
	O_2	%	-	-	-	18.8	-	
	H_2S	ppm	-	-	-	0	-	
NOTES	FINAL WELL VAPOR SAMPLE OBTAINED AT 1500 HRS. TPH VAPOR CONCENTRATION ON A CONTINUED DECREASING TREND. 1530 H_2S EVENT CONCLUDED. TOTAL GW RECOVERY 238 GALS W/ NO MEASURABLE LNAPL. SECURED SITE AND DEPARTED.							
RECOVERY	GW Pump	ON/OFF	ON	ON	ON	ON	OFF	
	Pump Rate	gals/min	.34	.12	.13	.08	-	
	Total Volume	gals	186	206	214	229	238	
	NAPL	% Vol	-	-	-	-	-	
	NAPL	Gals	-	-	-	-	-	
EW	Data Logger Head	ft	-.03	-.01	-.04	-.05	-.02	
	GW Depression	ft	-2.0	-2.0	-2.0	-2.0	-2.0	
	Extraction Well	DTNAPL					-	
	Extraction Well	DTGW					30.75	

AcuVac Remediation

OPERATING DATA – EVENT # 1B PAGE # 1 ACUVAC MDP SYSTEM

Location: Miles Fed #1A, San Juan County, NM **Project Managers: Faucher / George / Hendley / Morris**

Well # MW-1		Date	9/20/17					
		Time	0630	0700	0730	0800	0830	0900
		Hr Meter	8061.0	8061.5	8062.0	8062.5	8063.0	8063.5
ENGINE / BLOWER	Engine Speed	RPM	1800	1800	1800	1800	1800	1800
	Oil Pressure	psi	50	50	50	50	50	50
	Water Temp	°F	130	130	130	130	130	130
	Alternator	Volts	14	14	14	14	14	14
	Intake Vacuum	"Hg	18	18	18	18	18	18
	Gas Flow Fuel/Propane	cfh	105	105	105	105	105	105
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	150
	Extraction Well Flow	scfm	14.63	14.63	14.63	14.63	16.48	16.48
	Influent Vapor Temp.	°F	60	60	60	60	60	60
	Air Temp	°F	-	-	-	-	-	-
	Barometric Pressure	"Hg	-	-	-	-	-	-
VAPOR / INFLUENT	TPH	ppmv	-	108	-	-	-	744
	CO_2	%	-	0.68	-	-	-	1.30
	CO	%	-	0.0	-	-	-	0.0
	O_2	%	-	18.9	-	-	-	18.9
	H_2S	ppm	-	0.0	-	-	-	0.0
NOTES	ARRIVED ON SITE AT 0620. ACUVAC SYSTEM WAS IN-PLACE FROM 9/19. GAUGED WELL. POSITIONED IN-WELL PUMP AT 33.50 FT BTOC CONSISTENT W/EVENT 1A 0630 HRS EVENT STARTED. AT 0700 OBTAINED WELL VAPOR SAMPLE. TPH VAPORS WERE LOWER THAN EXPECTED AND CONSIDERED AS ANOMOLY. 0900 WELL VAPOR CONSISTENT W/EVENT #1A. WELL VAC SET AT 150" H_2O WVF 14.63, ↑ TO 16.48 AT 0830 HRS. GW PUMP RATE IN THE .75 TO 1.00 GPM RANGE DURING PERIOD. NO MEASURABLE NAPL.							
RECOVERY	TOTALIZER	GALS	4208.07	4208.07	4236.18	4258.20	4287.85	4312.47
	Pump Rate	gals/min	-	.94	.73	.99	.82	.79
	Total Volume	gals	-	-	28.11	50.13	79.78	104.40
	NAPL	% Vol	-	-	-	-	-	-
	NAPL	Gals	-	-	-	-	-	-
EW	Data Logger Head	ft	7.24		0.01	0.01	0.01	0.01
	GW Depression	ft	-	-	-2.0	-2.0	-2.0	-2.0
	Extraction Well	DTNAPL	-					
	Extraction Well	DTGW	31.40					

AcuVac Remediation

OPERATING DATA – EVENT # 13 PAGE # 2 ACUVAC MDP SYSTEM

Location: Knight, San Juan County, NM **Project Managers: Faucher / George**

Well # MW-1

		Date	9.20.17					
		Time	0930	1000	1030	1100	1130	1200
		Hr Meter	8064.0	8064.5	8065.0	8065.5	8066.0	8066.5
ENGINE / BLOWER	Engine Speed	RPM	1800	1800	1800	1800	1800	1800
	Oil Pressure	psi	50	50	50	50	50	50
	Water Temp	°F	130	130	130	130	130	130
	Alternator	Volts	14	14	14	14	14	14
	Intake Vacuum	"Hg	18	18	18	18	18	18
	Gas Flow Fuel/Propane	cfh	105	105	105	105	105	105
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	150
	Extraction Well Flow	scfm	20.43	20.43	20.43	20.43	20.43	20.43
	Influent Vapor Temp.	°F	60	60	60	60	60	60
	Air Temp	°F	-	-	-	-	-	-
	Barometric Pressure	"Hg	-	-	-	-	-	-
VAPOR / INFLUENT	TPH	ppmv	—	—	—	1038	—	—
	CO_2	%	—	—	—	1.46	—	—
	CO	%	—	—	—	0.0	—	—
	O_2	%	—	—	—	18.9	—	—
	H_2S	ppm	—	—	—	0.0	—	—

NOTES

1100 WELL VAPOR SAMPLE ↑ TO 1038 PPMV INDICATING PREFERENTIAL PATHWAYS MAY BE DEVELOPING. WVF ↑ TO 20.43 SCFM AT 0930 HRS. WELL VAC STEADY GW RECOVERY DECREASED TO THE .40 GPM RANGE

RECOVERY	TOTALIZER	GALS.	4336.30	4360.15	4383.30	4408.00	4432.20	4451.20
	Pump Rate	gals/min	.40	.39	.41	.40	.32	.40
	Total Volume	gals	128.23	152.08	175.23	199.93	224.13	267.33
	NAPL	% Vol	-	-	-	-	-	-
	NAPL	Gals	-	-	-	-	-	-
EW	Data Logger Head	ft	0.01	0.01	0.01	0.01	0.01	0.01
	GW Depression	ft						
	Extraction Well	DTNAPL						
	Extraction Well	DTGW						

AcuVac Remediation

OPERATING DATA – EVENT # 18 PAGE # 3 ACUVAC MDP SYSTEM

Location: Miles Fed #1A, San Juan County, NM **Project Managers: Faucher / George / Hendley / Morris**

Well #		Date	9/20/17					
		Time	1230	1300	1330	1400	1430	
		Hr Meter	8067.0	8067.5	8068.0	8068.5	8069.0	
ENGINE / BLOWER	Engine Speed	RPM	1800	1800	1800	1800	1800	
	Oil Pressure	psi	50	50	80	80	80	
	Water Temp	°F	140	140	140	140	140	
	Alternator	Volts	14	14	14	14	14	
	Intake Vacuum	"Hg	18	18	18	18	18	
	Gas Flow Fuel/Propane	cfh	105	105	105	105	105	
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	
	Extraction Well Flow	scfm	22.41	22.41	22.41	22.41	22.41	
	Influent Vapor Temp.	°F	60	60	60	60	60	
	Air Temp	°F	-	-	-	-	-	
	Barometric Pressure	"Hg	-	-	-	-	-	
VAPOR / INFLUENT	TPH	ppmv	-	1022	-	730	-	
	CO_2	%	-	1.22	-	.88	-	
	CO	%	-	0	-	0	-	
	O_2	%	-	18.9	-	18.9	-	
	H_2S	ppm	-	0	-	0	-	

NOTES

WELL VAC AND WVF STEADY DURING PERIOD. FINAL WELL VAPOR SAMPLE TPH CONCENTRATIONS ↓. GW RECOVERY DECREASED AT 1330 HRS. GW RECOVERY FOR EV #1B WAS HIGHER THAN #1A INDICATING THAT IT IS LIKELY PREFERENTIAL PATHWAYS MAY HAVE BEEN CREATED. AT 1430 HRS EVENT CONCLUDED. DEMOBED ACUVAC SYSTEM AND EQUIPMENT, SECURED SITE, DEPARTED.

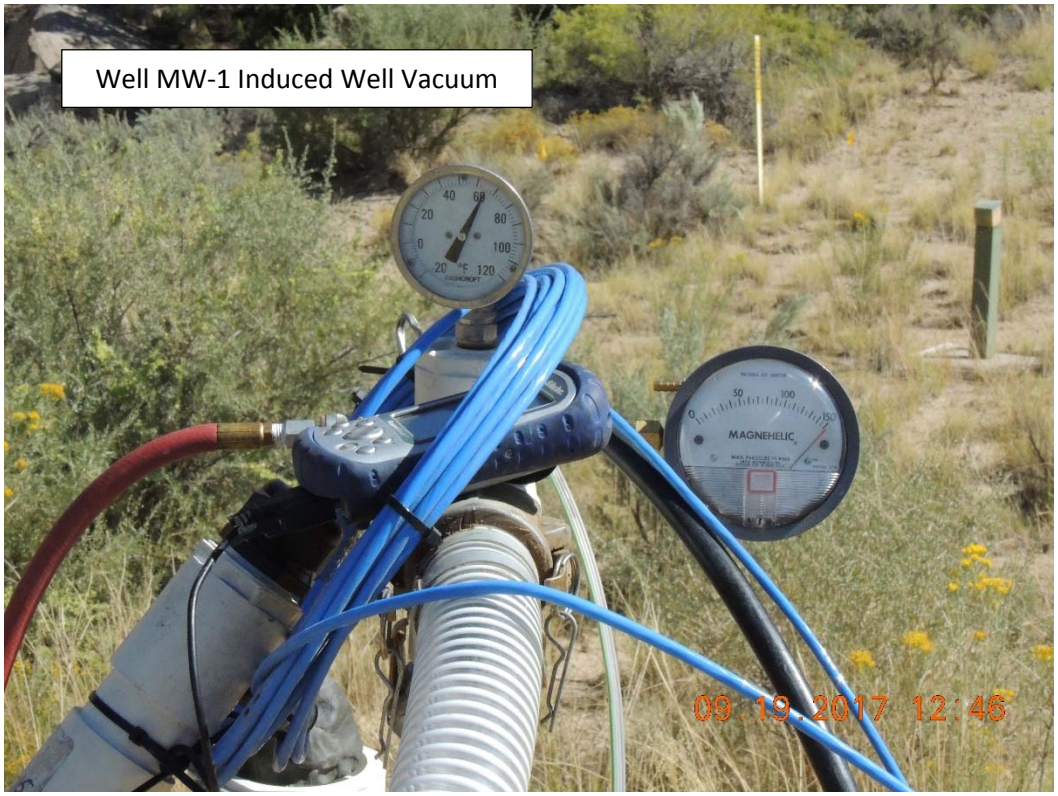
RECOVERY	TOTALIZER	GALS	4475.40	4496.10	4518.28	4536.50	4553.17	
	Pump Rate	gals/min	.35	.37	.16	.14	-	
	Total Volume	gals	267.33	288.03	310.21	328.83	345.10	
	NAPL	% Vol	-	-	-	-	-	
	NAPL	Gals	-	-	-	-	-	
EW	Data Logger Head	ft	.01	.01	.01	.01	.01	
	GW Depression	ft	-2.0	-2.0	-2.0	-2.0	-2.0	
	Extraction Well	DTNAPL					-	
	Extraction Well	DTGW					30.50	

MILES FEDERAL #1A
SAN JUAN COUNTY, NM

AcuVac MDP System Well MW-1

AcuVac MDP System Well MW-1

MILES FEDERAL #1A
SAN JUAN COUNTY, NM



APPENDIX D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-139054-1
Client Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

For:
Stantec Consulting Services Inc
1560 Broadway
Suite 1800
Denver, Colorado 80202

Attn: Ms. Sarah Gardner

Carol M Webb

Authorized for release by:
6/15/2017 2:51:37 PM

Carol Webb, Project Manager II
(850)471-6250
carol.webb@testamericainc.com

Table of Contents

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 400-139054-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-139054-1

Comments
No additional comments.

Receipt
The samples were received on 6/9/2017 11:11 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.1º C.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Client Sample ID: MW-1 — Lab Sample ID: 400-139054-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	9.5		2.0		ug/L	2		8021B	Total/NA
Ethylbenzene	32		2.0		ug/L	2		8021B	Total/NA
Xylenes, Total	95		10		ug/L	2		8021B	Total/NA

Client Sample ID: MW-2 — Lab Sample ID: 400-139054-2

No Detections.

Client Sample ID: MW-3 — Lab Sample ID: 400-139054-3

No Detections.

Client Sample ID: TRIP BLANK — Lab Sample ID: 400-139054-4

No Detections.

This Detection Summary does not include radiochemical test results.

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-139054-1	MW-1	Water	06/07/17 16:10	06/09/17 11:11
400-139054-2	MW-2	Water	06/07/17 16:00	06/09/17 11:11
400-139054-3	MW-3	Water	06/07/17 16:05	06/09/17 11:11
400-139054-4	TRIP BLANK	Water	06/07/17 15:50	06/09/17 11:11

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Client Sample ID: MW-1
Date Collected: 06/07/17 16:10
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139054-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**9.5**		2.0		ug/L			06/14/17 05:43	2
Ethylbenzene	**32**		2.0		ug/L			06/14/17 05:43	2
Toluene	<10		10		ug/L			06/14/17 05:43	2
Xylenes, Total	**95**		10		ug/L			06/14/17 05:43	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*100*		*78 - 124*		*06/14/17 05:43*	*2*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Client Sample ID: MW-2
Date Collected: 06/07/17 16:00
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139054-2
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			06/13/17 19:10	1
Ethylbenzene	<1.0		1.0		ug/L			06/13/17 19:10	1
Toluene	<5.0		5.0		ug/L			06/13/17 19:10	1
Xylenes, Total	<5.0		5.0		ug/L			06/13/17 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*96*		*78 - 124*		*06/13/17 19:10*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Client Sample ID: MW-3
Date Collected: 06/07/17 16:05
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139054-3
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			06/13/17 20:13	1
Ethylbenzene	<1.0		1.0		ug/L			06/13/17 20:13	1
Toluene	<5.0		5.0		ug/L			06/13/17 20:13	1
Xylenes, Total	<5.0		5.0		ug/L			06/13/17 20:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*94*		*78 - 124*		*06/13/17 20:13*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Client Sample ID: TRIP BLANK
Date Collected: 06/07/17 15:50
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139054-4
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			06/13/17 23:23	1
Ethylbenzene	<1.0		1.0		ug/L			06/13/17 23:23	1
Toluene	<5.0		5.0		ug/L			06/13/17 23:23	1
Xylenes, Total	<5.0		5.0		ug/L			06/13/17 23:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*96*		*78 - 124*		*06/13/17 23:23*	*1*

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

GC VOA

Analysis Batch: 356745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-139054-1	MW-1	Total/NA	Water	8021B	
400-139054-2	MW-2	Total/NA	Water	8021B	
400-139054-3	MW-3	Total/NA	Water	8021B	
400-139054-4	TRIP BLANK	Total/NA	Water	8021B	
MB 400-356745/2	Method Blank	Total/NA	Water	8021B	
LCS 400-356745/1001	Lab Control Sample	Total/NA	Water	8021B	
400-139054-3 MS	MW-3	Total/NA	Water	8021B	
400-139054-3 MSD	MW-3	Total/NA	Water	8021B	

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-356745/2
Matrix: Water
Analysis Batch: 356745

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			06/13/17 12:39	1
Ethylbenzene	<1.0		1.0		ug/L			06/13/17 12:39	1
Toluene	<5.0		5.0		ug/L			06/13/17 12:39	1
Xylenes, Total	<5.0		5.0		ug/L			06/13/17 12:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*100*		*78 - 124*		*06/13/17 12:39*	*1*

Lab Sample ID: LCS 400-356745/1001
Matrix: Water
Analysis Batch: 356745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	46.8		ug/L		94	85 - 115		
Ethylbenzene			50.0	47.9		ug/L		96	85 - 115		
Toluene			50.0	46.1		ug/L		92	85 - 115		
Xylenes, Total			150	141		ug/L		94	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*100*		*78 - 124*

Lab Sample ID: 400-139054-3 MS
Matrix: Water
Analysis Batch: 356745

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<1.0		50.0	47.3		ug/L		95	44 - 150		
Ethylbenzene	<1.0		50.0	47.6		ug/L		95	70 - 142		
Toluene	<5.0		50.0	46.6		ug/L		93	69 - 136		
Xylenes, Total	<5.0		150	143		ug/L		95	68 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*97*		*78 - 124*

Lab Sample ID: 400-139054-3 MSD
Matrix: Water
Analysis Batch: 356745

Client Sample ID: MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<1.0		50.0	48.3		ug/L		97	44 - 150	2	16
Ethylbenzene	<1.0		50.0	48.5		ug/L		97	70 - 142	2	16
Toluene	<5.0		50.0	46.7		ug/L		93	69 - 136	0	16
Xylenes, Total	<5.0		150	147		ug/L		98	68 - 142	3	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*96*		*78 - 124*

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Client Sample ID: MW-1

Lab Sample ID: 400-139054-1

Date Collected: 06/07/17 16:10

Matrix: Water

Date Received: 06/09/17 11:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		2	5 mL	5 mL	356745	06/14/17 05:43	MKA	TAL PEN
	Instrument ID: CH_CAROL									

Client Sample ID: MW-2

Lab Sample ID: 400-139054-2

Date Collected: 06/07/17 16:00

Matrix: Water

Date Received: 06/09/17 11:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	356745	06/13/17 19:10	MKA	TAL PEN
	Instrument ID: CH_CAROL									

Client Sample ID: MW-3

Lab Sample ID: 400-139054-3

Date Collected: 06/07/17 16:05

Matrix: Water

Date Received: 06/09/17 11:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	356745	06/13/17 20:13	MKA	TAL PEN
	Instrument ID: CH_CAROL									

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-139054-4

Date Collected: 06/07/17 15:50

Matrix: Water

Date Received: 06/09/17 11:11

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	356745	06/13/17 23:23	MKA	TAL PEN
	Instrument ID: CH_CAROL									

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Stantec Consulting Services Inc
TestAmerica Job ID: 400-139054-1
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-17
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-17
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-17
Massachusetts	State Program	1	M-FL094	06-30-17
Michigan	State Program	5	9912	06-30-17
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-17
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-17
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-16-10	09-30-17
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-17

Method Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - Miles Fed 1A

TestAmerica Job ID: 400-139054-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	TAL PEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: S. Gardner / J. Garvey	Lab PM: Webb, Carol M	Carrier Tracking No(s):	COC No: 400-65869-26944.1
Client Contact: Ms. Sarah Gardner	Phone: 303 291 2239	E-Mail: carol.webb@testamericainc.com		Page: Page 1 of 1
Company: Stantec Consulting Services Inc				Job #:

Address: 1560 Broadway Suite 1800	Due Date Requested:
City: Denver	TAT Requested (days): Standard
State, Zip: CO, 80202	PO #: Purchase Order Requested
Phone: 303-291-2239(Tel)	WO #:
Email: sarah.gardner@mwhglobal.com	Project #: 40005479
Project Name: Miles Fed 1A	SSOW#:
Site: Miles Fed 1A	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

400-139054 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B - BTEX 8021	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
MW-1	June 7, 2017	1610	G	W	N	N	2	2	Unpreserved
MW-2	June 7, 2017	1600	G	W	N	N	2	2	
MW-3	June 7, 2017	1605	G	W	N	N	2	2	
TRIP BLANK	June 7, 2017	1550		W	N	N	2	2	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	6/8/2017 845	Stantec			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			[signature]	6-9-17 1111	

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		3.1°, 2.7°, IR2

Page 16 of 17

6/15/2017

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 400-139054-1

Login Number: 139054

List Source: TestAmerica Pensacola

List Number: 1

Creator: Johnson, Jeremy N

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1°C,2.7°C IR2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-146064-1
Client Project/Site: El Paso CGP COmpany - Miles Fed 1A

For:
Stantec Consulting Services Inc
1560 Broadway
Suite 1800
Denver, Colorado 80202

Attn: Ms. Sarah Gardner

Carol M Webb

Authorized for release by:
11/24/2017 9:34:58 AM

Carol Webb, Project Manager II
(850)471-6250
carol.webb@testamericainc.com

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 400-146064-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-146064-1

Comments
No additional comments.

Receipt
The samples were received on 11/15/2017 8:12 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Client Sample ID: TRIP BLANK — Lab Sample ID: 400-146064-1

No Detections.

Client Sample ID: MW-1 — Lab Sample ID: 400-146064-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	42		5.0		ug/L	5		8260C	Total/NA
Toluene	74		5.0		ug/L	5		8260C	Total/NA
Ethylbenzene	68		5.0		ug/L	5		8260C	Total/NA
Xylenes, Total	570		50		ug/L	5		8260C	Total/NA

Client Sample ID: MW-2 — Lab Sample ID: 400-146064-3

No Detections.

Client Sample ID: MW-3 — Lab Sample ID: 400-146064-4

No Detections.

This Detection Summary does not include radiochemical test results.

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-146064-1	TRIP BLANK	Water	11/14/17 12:20	11/15/17 08:12
400-146064-2	MW-1	Water	11/14/17 12:40	11/15/17 08:12
400-146064-3	MW-2	Water	11/14/17 12:34	11/15/17 08:12
400-146064-4	MW-3	Water	11/14/17 12:25	11/15/17 08:12

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Client Sample ID: TRIP BLANK

Date Collected: 11/14/17 12:20
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			11/21/17 12:54	1
Toluene	<1.0		1.0		ug/L			11/21/17 12:54	1
Ethylbenzene	<1.0		1.0		ug/L			11/21/17 12:54	1
Xylenes, Total	<10		10		ug/L			11/21/17 12:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*101*		*81 - 121*		*11/21/17 12:54*	*1*
4-Bromofluorobenzene	*114*		*78 - 118*		*11/21/17 12:54*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*11/21/17 12:54*	*1*

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Client Sample ID: MW-1
Date Collected: 11/14/17 12:40
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	42		5.0		ug/L			11/20/17 20:26	5
Toluene	74		5.0		ug/L			11/20/17 20:26	5
Ethylbenzene	68		5.0		ug/L			11/20/17 20:26	5
Xylenes, Total	570		50		ug/L			11/20/17 20:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*105*		*81 - 121*		*11/20/17 20:26*	*5*
4-Bromofluorobenzene	*108*		*78 - 118*		*11/20/17 20:26*	*5*
Toluene-d8 (Surr)	*111*		*80 - 120*		*11/20/17 20:26*	*5*

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Client Sample ID: MW-2
Date Collected: 11/14/17 12:34
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			11/20/17 16:46	1
Toluene	<1.0		1.0		ug/L			11/20/17 16:46	1
Ethylbenzene	<1.0		1.0		ug/L			11/20/17 16:46	1
Xylenes, Total	<10		10		ug/L			11/20/17 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*103*		*81 - 121*		*11/20/17 16:46*	*1*
4-Bromofluorobenzene	*110*		*78 - 118*		*11/20/17 16:46*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/20/17 16:46*	*1*

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Client Sample ID: MW-3
Date Collected: 11/14/17 12:25
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			11/20/17 17:08	1
Toluene	<1.0		1.0		ug/L			11/20/17 17:08	1
Ethylbenzene	<1.0		1.0		ug/L			11/20/17 17:08	1
Xylenes, Total	<10		10		ug/L			11/20/17 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*105*		*81 - 121*		*11/20/17 17:08*	*1*
4-Bromofluorobenzene	*109*		*78 - 118*		*11/20/17 17:08*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/20/17 17:08*	*1*

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

GC/MS VOA

Analysis Batch: 376632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-146064-2	MW-1	Total/NA	Water	8260C	
400-146064-3	MW-2	Total/NA	Water	8260C	
400-146064-4	MW-3	Total/NA	Water	8260C	
MB 400-376632/4	Method Blank	Total/NA	Water	8260C	
LCS 400-376632/1002	Lab Control Sample	Total/NA	Water	8260C	
680-145565-B-5 MS	Matrix Spike	Total/NA	Water	8260C	
680-145565-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	

Analysis Batch: 376725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-146064-1	TRIP BLANK	Total/NA	Water	8260C	
MB 400-376725/4	Method Blank	Total/NA	Water	8260C	
LCS 400-376725/1002	Lab Control Sample	Total/NA	Water	8260C	
400-146063-B-6 MS	Matrix Spike	Total/NA	Water	8260C	
400-146063-B-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 400-376632/4
Matrix: Water
Analysis Batch: 376632

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			11/20/17 12:08	1
Toluene	<1.0		1.0		ug/L			11/20/17 12:08	1
Ethylbenzene	<1.0		1.0		ug/L			11/20/17 12:08	1
Xylenes, Total	<10		10		ug/L			11/20/17 12:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*102*		*81 - 121*		*11/20/17 12:08*	*1*
4-Bromofluorobenzene	*113*		*78 - 118*		*11/20/17 12:08*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*11/20/17 12:08*	*1*

Lab Sample ID: LCS 400-376632/1002
Matrix: Water
Analysis Batch: 376632

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	42.2		ug/L		84	70 - 130		
Toluene			50.0	44.0		ug/L		88	70 - 130		
Ethylbenzene			50.0	45.5		ug/L		91	70 - 130		
Xylenes, Total			100	91.7		ug/L		92	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*105*		*81 - 121*
4-Bromofluorobenzene	*106*		*78 - 118*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: 680-145565-B-5 MS
Matrix: Water
Analysis Batch: 376632

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<1.0		50.0	42.6		ug/L		85	56 - 142		
Toluene	<1.0		50.0	42.5		ug/L		85	65 - 130		
Ethylbenzene	<1.0		50.0	41.3		ug/L		83	58 - 131		
Xylenes, Total	<10		100	81.2		ug/L		81	59 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane	*104*		*81 - 121*
4-Bromofluorobenzene	*104*		*78 - 118*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: 680-145565-B-5 MSD
Matrix: Water
Analysis Batch: 376632

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<1.0		50.0	43.1		ug/L		86	56 - 142	1	30
Toluene	<1.0		50.0	45.3		ug/L		91	65 - 130	6	30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 680-145565-B-5 MSD
Matrix: Water
Analysis Batch: 376632

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	<1.0		50.0	44.9		ug/L		90	58 - 131	8	30
Xylenes, Total	<10		100	88.3		ug/L		88	59 - 130	8	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane	*105*		*81 - 121*
4-Bromofluorobenzene	*108*		*78 - 118*
Toluene-d8 (Surr)	*108*		*80 - 120*

Lab Sample ID: MB 400-376725/4
Matrix: Water
Analysis Batch: 376725

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			11/21/17 09:12	1
Toluene	<1.0		1.0		ug/L			11/21/17 09:12	1
Ethylbenzene	<1.0		1.0		ug/L			11/21/17 09:12	1
Xylenes, Total	<10		10		ug/L			11/21/17 09:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*101*		*81 - 121*		*11/21/17 09:12*	*1*
4-Bromofluorobenzene	*106*		*78 - 118*		*11/21/17 09:12*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*11/21/17 09:12*	*1*

Lab Sample ID: LCS 400-376725/1002
Matrix: Water
Analysis Batch: 376725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	47.3		ug/L		95	70 - 130		
Toluene			50.0	49.6		ug/L		99	70 - 130		
Ethylbenzene			50.0	54.0		ug/L		108	70 - 130		
Xylenes, Total			100	105		ug/L		105	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*103*		*81 - 121*
4-Bromofluorobenzene	*113*		*78 - 118*
Toluene-d8 (Surr)	*106*		*80 - 120*

Lab Sample ID: 400-146063-B-6 MS
Matrix: Water
Analysis Batch: 376725

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<1.0		50.0	48.9		ug/L		96	56 - 142		
Toluene	<1.0		50.0	50.1		ug/L		100	65 - 130		
Ethylbenzene	<1.0		50.0	54.0		ug/L		107	58 - 131		
Xylenes, Total	<10		100	108		ug/L		108	59 - 130		

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-146063-B-6 MS
Matrix: Water
Analysis Batch: 376725

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane	*105*		*81 - 121*
4-Bromofluorobenzene	*110*		*78 - 118*
Toluene-d8 (Surr)	*104*		*80 - 120*

Lab Sample ID: 400-146063-B-6 MSD
Matrix: Water
Analysis Batch: 376725

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<1.0		50.0	48.9		ug/L		96	56 - 142	0	30
Toluene	<1.0		50.0	51.1		ug/L		102	65 - 130	2	30
Ethylbenzene	<1.0		50.0	53.7		ug/L		106	58 - 131	1	30
Xylenes, Total	<10		100	106		ug/L		106	59 - 130	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane	*101*		*81 - 121*
4-Bromofluorobenzene	*118*		*78 - 118*
Toluene-d8 (Surr)	*107*		*80 - 120*

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Client Sample ID: TRIP BLANK
Date Collected: 11/14/17 12:20
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	376725	11/21/17 12:54	CAR	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-1
Date Collected: 11/14/17 12:40
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		5	5 mL	5 mL	376632	11/20/17 20:26	S1K	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-2
Date Collected: 11/14/17 12:34
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	376632	11/20/17 16:46	S1K	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-3
Date Collected: 11/14/17 12:25
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146064-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	376632	11/20/17 17:08	S1K	TAL PEN
	Instrument ID: Darwin									

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Stantec Consulting Services Inc
TestAmerica Job ID: 400-146064-1
Project/Site: El Paso CGP COmpany - Miles Fed 1A

Laboratory: TestAmerica Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-18
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	12-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
Maryland	State Program	3	233	09-30-18
Massachusetts	State Program	1	M-FL094	06-30-18
Michigan	State Program	5	9912	06-30-18
New Jersey	NELAP	2	FL006	06-30-18
North Carolina (WW/SW)	State Program	4	314	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
South Carolina	State Program	4	96026	06-30-18
Tennessee	State Program	4	TN02907	06-30-18
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

Method Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP COmpany - Miles Fed 1A

TestAmerica Job ID: 400-146064-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL PEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

00-146064 COC

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: SMS	Lab PM: Webb, Carol M	Carrier Tracking No(s):	COC No: 400-69065-27999.1
Client Contact: Ms. Sarah Gardner	Phone: 515-306-1353	E-Mail: carol.webb@testamericainc.com		Page: Page 1 of 1
Company: Stantec Consulting Services Inc		Analysis Requested		Job #: 203720281
Address: 1560 Broadway Suite 1800	Due Date Requested:			Preservation Codes:
City: Denver	TAT Requested (days): 10 day 5+d.			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: CO, 80202				
Phone: 303-291-2239(Tel)	PO #: Purchase Order Requested			
Email: sarah.gardner@mwhglobal.com	WO#: ~~MAF~~ N-ERG-STN-05-17.17-SLG-15 Miles Fed 1A			Other:
Project Name: Miles Fed 1A Nov 2017	Project #: 40005479	8260		
Site:	SSOW#:	8021B - BTEX 8021		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)			Special Instructions/Note:
Trip Blank	11/14/17	1220	G	W	A	2	Per ARF
MW-1	11/14/17	1240	"	"	A	2	"
MW-2	11/14/17	1234	"	"	A	2	"
MW-3	11/14/17	1225	"	"	A	2	"

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	11/14/17 1700	Stantec	[signature]	11.15.17 0812	TA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		0.7C TRBNK

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 400-146064-1

Login Number: 146064
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	