2017 ANNUAL GROUNDWATER REPORT

K-27 Line Drip
NMOCD Case#: 3RP-204-0
Meter Code: LD072
T25N, R6W, Sec4, Unit E

SITE DETAILS

Site Location: Latitude: 36.430553 N, Longitude: -107.480164 W
Land Type: Federal
Operator: Enterprise

SITE BACKGROUND

Environmental Remediation activities at the K-27 Line Drip (Site) are being 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, LLC's (EPCGP's) program methods. The Site is not active, but continues to be crossed by a pipeline operated by Enterprise.

The Site is located on Federal land. An initial site assessment was completed in July 1994, and an excavation to approximately 12 feet below ground surface (bgs) was completed in August of 1994. Various site investigations have occurred since 1995. Monitoring wells were installed in 1995 (MW-1), 2000 (MW-2 and MW-3), 2006 (TMW-4, 2016 (MW-2R, MW-3R, MW-5, MW-6, MW-7, and MW-8), and 2017 (MW-9 and MW-10). TMW-4 was later re-designated MW-4. Free product has been periodically encountered and recovered at the Site. In 2017, free product was observed in monitoring wells MW-2R and newly-installed monitoring well MW-9. Currently, groundwater sampling is conducted on a semi-annual basis.

MONITORING WELL INSTALLATION ACTIVITIES

In November 2017, new monitoring well locations were staked and surveyed for permitting and utility locating purposes. The monitoring well advancement and installation activities were completed in accordance with the Monitoring Well Installation Work Plan, submitted on October 5, 2017. The NMOCD was notified of the monitoring well installation activities on October 6, 2017 (Appendix A).

Two new wells (MW-9 and MW-10) were advanced and installed in November 2017, to further characterize the extent of the dissolved-phase hydrocarbons at the Site. Following installation, ground surface and casing elevations of the new monitoring wells were surveyed in November 2017 by a licensed surveyor using state plane coordinates.

Monitoring wells were constructed of 2-inch diameter, Schedule 40 polyvinyl chloride (PVC), with 0.010-inch, continuous, factory-slotted PVC screen. The well screen was installed from 25 feet bgs to 50 feet bgs to bisect the observed water table. A 3-foot seal of bentonite chips was placed above the sandpack and hydrated, and the remaining annular space filled with bentonite grout. Well MW-9 was completed as a stick-up well with locking protective casing and a concrete surface completion. Four protective

bollards were installed around MW-9. Well MW-10 was located at the edge of the access road and was installed with a metal flush-mount well completion set in concrete. Borehole logs and well construction diagrams are provided in Appendix B.

During advancement of the monitoring wells, the soil sample interval exhibiting the highest photoionization detector (PID) reading was collected and placed in a 4-ounce jar for laboratory analysis. Retained sample jars were stored in an ice-filled cooler and shipped under standard chain-of-custody protocols to TestAmerica Laboratories, Inc. in Pensacola, Florida (TestAmerica). The soil samples were analyzed for the presence of benzene, toluene, ethylbenzene, and total xylenes (BTEX) according to United States Environmental Protection Agency (EPA) Method SW846 8021B, total petroleum hydrocarbons (TPH), gasoline range organics, diesel range organics, and motor oil range organics using EPA Method 8015B; and chloride according to EPA Method 300. The soil sample analytical report is provided in Appendix C.

Monitoring well development was performed using a well swab and downhole pump until visibly clear groundwater was observed. Purged groundwater was containerized and transported to Basin Disposal, Inc. in Bloomfield, NM for disposal. Soil drums were staged on site for later disposal at Envirotech, Inc. (Envirotech), located south of Bloomfield, NM. Waste disposal documentation is included as Appendix D.

GROUNDWATER SAMPLING ACTIVITIES

Pursuant to the Remediation Plan, Stantec provided field work notifications via email to 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-2R, MW-3R, MW-4, MW-5, MW-6, MW-7, and MW-8. New monitoring wells MW-9 and MW-10 were also gauged during the November 14, 2017 sampling event. Groundwater samples were collected from each well that did not contain free product using HydraSleeve™ (HydraSleeve) no-purge groundwater sampling devices. The HydraSleeves were set during the previous sampling event or after new well installation. HydraSleeves were suspended 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 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 is combined in a waste container and taken to Basin Disposal, Inc. for disposal. Waste disposal documentation is included as Appendix D.

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FREE PRODUCT RECOVERY

Free product was observed in monitoring well MW-2R during the 2017 semiannual monitoring events. Approximately 0.07 gallon was recovered via hand bailing methods in 2017. The recovered product was transported with wastewater generated during groundwater sampling activities to Basin for disposal.

A mobile dual phase extraction (MDPE) event was completed on July 26, 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 event was to evaluate more aggressive free product recovery methods from monitoring well MW-2R.

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 was used to create the induced vacuum for SVE.

One, 8-hour MDPE event was completed, using MW-2R as an extraction well. Based on field data collected by AcuVac, approximately 2.2 gallons of hydrocarbons were recovered from MW-2R. AcuVac's report summarizing the MDPE event at the Site is presented as Appendix E. Recovered fluids from the MDPE event where transported to Basin for disposal. Waste disposal documentation is included as Appendix D.

SUMMARY TABLES

Historic groundwater analytical results and well gauging data are summarized in Tables 1 and 2, respectively. Soil analytical results are summarized in Table 3.

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. Soil analytical results are shown on Figure 5.

ANALYTICAL LAB REPORTS

The soil and groundwater analytical lab reports are included as Appendices C and F, respectively.

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GROUNDWATER RESULTS

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

- Free product was observed in MW-2R and MW-9 in 2017. No groundwater samples were collected from these monitoring wells.

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

- 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 (620 µg/L) or not detected in the Site monitoring wells sampled in 2017.

SOIL RESULTS

- Soil samples were collected from the borings for monitoring wells MW-9 and MW-10. Sample locations were based on elevated soil screening results. Benzene concentrations were below reporting limits in MW-10 and 0.0017 milligrams per kilogram (mg/kg) in MW-9.

- Neither sample exceeded the NMOCD 2013 Pit Rule Guidance criteria for any of the contaminants of concern.

- TPH concentrations were 7.52 mg/kg for MW-9 and not detected for MW-10.

- Chloride was not detected in either of the soil samples collected.

PLANNED FUTURE ACTIVITIES

Groundwater monitoring events will continue to 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.

Air sparge feasibility testing is planned for 2018 in support of a site-wide plan to remediate the site. A work plan for these activities will be submitted under separate cover

for NMOCD approval.

The activities completed in 2018 and their results will be summarized in the 2018 Annual Report, completed for submittal in early 2019.

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TABLES

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

K-27 Line Drip					
Location	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**
NMWQCC Standards:		10	750	750	620
MW-1	11/04/96	996	2170	204	1520
MW-1	02/05/97	207	613	168	1010
MW-1	05/07/97	41.8	114	97.8	500
MW-1	08/08/97	1690	2980	298	1930
MW-1	11/07/97	533	1210	267	1720
MW-1	08/19/99	179	379	79.1	777
MW-1	11/10/99	39	95	56	390
MW-1	10/08/08	7.3	3.9	20.2	68.7
MW-1	11/03/09	355	69.3	45.8	259
MW-1	11/08/10	138	29.4	43.9	183
MW-1	11/10/11	71.8	57.5	5	62.2
MW-1	06/05/13	350	61	15	220
MW-1	09/10/13	150	32	7	83
MW-1	12/11/13	150	100	13	120
MW-1	04/04/14	220	51	20	150
MW-1	10/22/14	140	53	5.2	73
MW-1	05/28/15	110	75	13	97
MW-1	11/21/15	65	17	2.1	28
MW-1	04/17/16	6.1	5.9	<1.0	10
MW-1	10/15/16	2	<5.0	<1.0	6.9
MW-1	06/07/17	52	18	5.6	38
MW-1	11/14/17	190	98	8.9	87
MW-2	08/31/00	5500	14000	670	5800
MW-2	11/03/09	223	1070	532	2590
MW-2	11/08/10	152	547	471	2190
MW-2	11/10/11	31.9	101	156	446
MW-2 abandoned and replaced with MW-2R on September 26, 2016					

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

K-27 Line Drip					
Location	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**
NMWQCC Standards:		10	750	750	620
MW-3	09/05/00	<0.5	<0.5	<0.5	<0.5
MW-3	07/03/01	<0.5	<0.5	<0.5	<0.5
MW-3	10/21/05	<1	<1	<1	<2
MW-3	11/07/06	1.1	1.6	0.42 J	2.3
MW-3	10/25/07	<1	<1	<1	<2
MW-3	10/08/08	<2	<2	<2	<6
MW-3	11/03/09	<1	<1	<1	<2
MW-3	11/08/10	<2	<2	<2	<6
MW-3	11/10/11	<1	<1	<1	<3
MW-3	06/05/13	<0.14	<0.30	<0.20	<0.23
MW-3 abandoned and replaced with MW-3R on September 26, 2016					
MW-3R	10/15/16	<1.0	<5.0	<1.0	<5.0
MW-3R	06/07/17	<1.0	<5.0	<1.0	<5.0
MW-3R	11/14/17	<1.0	<1.0	<1.0	<10
MW-4	11/08/06	<1	<1	<1	<2
MW-4	10/25/07	<1	<1	<1	<2
MW-4	10/08/08	<2	<2	<2	<6
MW-4	11/03/09	<1	<1	<1	<2
MW-4	11/08/10	<2	<2	<2	<6
MW-4	11/10/11	<1	<1	<1	<3
MW-4	06/05/13	<0.14	<0.30	<0.20	<0.23
MW-4	09/10/13	<0.14	<0.30	<0.20	<0.23
MW-4	12/11/13	<0.20	<0.38	<0.20	<0.65
MW-4	04/14/14	<0.20	<0.38	<0.20	<0.65
MW-4	10/22/14	<0.38	<0.70	<0.50	<1.6
MW-4	05/28/15	<1.0	<5.0	<1.0	<5.0
MW-4	11/21/15	<1.0	<1.0	<1.0	<3.0
MW-4	04/17/16	<1.0	<5.0	<1.0	<5.0
MW-4	10/15/16	<1.0	<5.0	<1.0	<5.0
MW-4	06/07/17	<1.0	<5.0	<1.0	<5.0
MW-4	11/14/17	<1.0	<1.0	<1.0	<10
MW-5	10/15/16	<1.0	<5.0	<1.0	<5.0
MW-5	06/07/17	<1.0	<5.0	<1.0	<5.0
MW-5	11/14/17	<1.0	<1.0	<1.0	<10

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

K-27 Line Drip					
Location	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**
NMWQCC Standards:		10	750	750	620
MW-6	10/15/16	4.5	<5.0	4.5	59
MW-6	06/07/17	1.4	<5.0	<1.0	<5.0
MW-6	11/14/17	<1.0	<1.0	1.7	170
MW-7	10/15/16	2.2	<5.0	<1.0	<5.0
MW-7	06/07/17	<1.0	<5.0	<1.0	<5.0
MW-7	11/14/17	<1.0	<1.0	<1.0	<10
MW-8	10/15/16	4.8	42	23	230
MW-8	06/07/17	<1.0	<5.0	2	15
MW-8	11/14/17	<1.0	<1.0	<1.0	<10
MW-10	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

K-27 Line Drip						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	11/04/96	6261.93	37.44	NR		6224.49
MW-1	02/05/97	6261.93	36.89	NR		6225.04
MW-1	05/07/97	6261.93	36.73	NR		6225.20
MW-1	08/08/97	6261.93	37.61	NR		6224.32
MW-1	11/07/97	6261.93	37.33	37.21	0.12	6224.69
MW-1	02/26/98	6261.93	36.89	36.71	0.18	6225.18
MW-1	02/24/99	6261.93	36.39	36.27	0.12	6225.63
MW-1	08/19/99	6261.93	36.48	NR		6225.45
MW-1	11/10/99	6261.93	36.17	36.10	0.07	6225.81
MW-1	09/05/00	6261.93	37.22	NR		6224.71
MW-1	10/06/00	6261.93	37.42	NR		6224.51
MW-1	07/03/01	6261.93	36.64	36.49	0.15	6225.40
MW-1	09/04/01	6261.93	37.43	37.39	0.04	6224.53
MW-1	09/24/01	6261.93	37.45	37.40	0.05	6224.52
MW-1	04/01/02	6261.93	37.01	NR		6224.92
MW-1	07/15/02	6261.93	38.02	37.85	0.17	6224.04
MW-1	10/08/02	6261.93	38.01	38.00	0.01	6223.93
MW-1	01/27/03	6261.93	37.42	ND		6224.51
MW-1	04/26/03	6261.93	37.15	ND		6224.78
MW-1	07/17/03	6261.93	38.36	38.18	0.18	6223.71
MW-1	10/13/03	6261.93	38.29	ND		6223.64
MW-1	01/19/04	6261.93	37.69	37.68	0.01	6224.25
MW-1	04/20/04	6261.93	37.29	ND		6224.64
MW-1	07/27/04	6261.93	38.45	38.28	0.17	6223.61
MW-1	10/20/04	6261.93	38.71	38.68	0.03	6223.24
MW-1	01/25/05	6261.93	38.18	38.16	0.02	6223.77
MW-1	04/14/05	6261.93	37.84	37.75	0.09	6224.16
MW-1	07/19/05	6261.93	38.84	ND		6223.09
MW-1	10/12/05	6261.93	38.46	ND		6223.47
MW-1	10/21/05	6261.93	38.46	ND		6223.47
MW-1	01/23/06	6261.93	37.89	ND		6224.04
MW-1	04/28/06	6261.93	37.57	ND		6224.36
MW-1	07/26/06	6261.93	38.61	ND		6223.32
MW-1	11/07/06	6261.93	36.37	36.31	0.06	6225.61
MW-1	01/17/07	6261.93	35.91	ND		6226.02
MW-1	04/24/07	6261.93	35.53	ND		6226.40
MW-1	07/31/07	6261.93	36.57	ND		6225.36
MW-1	10/25/07	6261.93	36.04	ND		6225.89
MW-1	01/25/08	6261.93	35.90	ND		6226.03
MW-1	04/18/08	6261.93	35.47	ND		6226.46
MW-1	07/23/08	6261.93	36.43	ND		6225.50

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	10/08/08	6261.93	36.95	ND		6224.98
MW-1	10/13/08	6261.93	36.93	ND		6225.00
MW-1	01/16/09	6261.93	36.77	ND		6225.16
MW-1	04/06/09	6261.93	36.30	ND		6225.63
MW-1	08/25/09	6261.93	37.53	ND		6224.40
MW-1	11/03/09	6261.93	37.58	ND		6224.35
MW-1	02/16/10	6261.93	37.32	ND		6224.61
MW-1	05/24/10	6261.93	36.97	ND		6224.96
MW-1	09/27/10	6261.93	37.98	ND		6223.95
MW-1	11/08/10	6261.93	37.70	ND		6224.23
MW-1	02/01/11	6261.93	37.35	ND		6224.58
MW-1	05/02/11	6261.93	37.26	ND		6224.67
MW-1	09/23/11	6261.93	38.45	ND		6223.48
MW-1	11/10/11	6261.93	38.30	ND		6223.63
MW-1	02/22/12	6261.93	37.82	ND		6224.11
MW-1	05/15/12	6261.93	37.81	ND		6224.12
MW-1	06/05/13	6261.93	38.16	ND		6223.77
MW-1	09/10/13	6261.93	38.85	ND		6223.08
MW-1	12/11/13	6261.93	38.05	ND		6223.88
MW-1	04/04/14	6261.93	37.54	ND		6224.39
MW-1	10/22/14	6261.93	38.36	ND		6223.57
MW-1	05/28/15	6261.93	37.30	ND		6224.63
MW-1	11/21/15	6261.93	37.72	ND		6224.21
MW-1	04/17/16	6261.93	37.29	ND		6224.64
MW-1	10/15/16	6261.93	40.48	ND		6221.45
MW-1	06/07/17	6261.93	37.45	ND		6224.48
MW-1	11/14/17	6261.93	37.96	ND		6223.97

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-2	08/31/00	6261.39	35.81	NR		6225.58
MW-2	09/05/00	6261.39	37.28	36.11	1.17	6224.99
MW-2	10/06/00	6261.39	37.31	36.04	1.27	6225.03
MW-2	07/03/01	6261.39	37.37	36.12	1.25	6224.96
MW-2	09/04/01	6261.39	36.52	36.25	0.27	6225.07
MW-2	09/24/01	6261.39	36.46	36.27	0.19	6225.07
MW-2	01/02/02	6261.39	36.97	35.87	1.10	6225.24
MW-2	04/01/02	6261.39	36.61	35.67	0.94	6225.48
MW-2	07/15/02	6261.39	38.00	NR		6223.39
MW-2	10/08/02	6261.39	37.01	36.94	0.07	6224.43
MW-2	01/27/03	6261.39	36.47	36.31	0.16	6225.04
MW-2	04/26/03	6261.39	36.88	35.85	1.03	6225.28
MW-2	07/17/03	6261.39	38.20	36.75	1.45	6224.28
MW-2	10/13/03	6261.39	37.64	37.07	0.57	6224.18
MW-2	01/19/04	6261.39	36.72	36.51	0.21	6224.83
MW-2	04/20/04	6261.39	36.93	35.91	1.02	6225.22
MW-2	07/27/04	6261.39	38.30	36.88	1.42	6224.15
MW-2	10/20/04	6261.39	38.23	37.37	0.86	6223.80
MW-2	01/25/05	6261.39	42.87	36.77	6.10	6223.09
MW-2	04/14/05	6261.39	36.55	36.55	0.00	6224.84
MW-2	07/19/05	6261.39	38.16	37.55	0.61	6223.69
MW-2	10/21/05	6261.39	38.31	37.06	1.25	6224.02
MW-2	01/23/06	6261.39	37.31	36.69	0.62	6224.54
MW-2	04/28/06	6261.39	37.01	36.33	0.68	6224.89
MW-2	07/26/06	6261.39	38.37	37.42	0.95	6223.73
MW-2	11/07/06	6261.39	35.28	35.21	0.07	6226.16
MW-2	01/17/07	6261.39	35.35	ND		6226.04
MW-2	04/24/07	6261.39	35.08	ND		6226.31
MW-2	07/31/07	6261.39	36.03	36.01	0.02	6225.37
MW-2	10/25/07	6261.39	35.53	ND		6225.86
MW-2	01/25/08	6261.39	35.37	35.34	0.03	6226.04
MW-2	04/18/08	6261.39	34.90	ND		6226.49
MW-2	07/23/08	6261.39	35.95	ND		6225.44
MW-2	10/13/08	6261.39	36.39	ND		6225.00
MW-2	01/16/09	6261.39	36.39	36.14	0.25	6225.19
MW-2	04/06/09	6261.39	35.98	35.94	0.04	6225.44
MW-2	08/25/09	6261.39	37.03	36.97	0.06	6224.40
MW-2	11/03/09	6261.39	37.00	36.96	0.04	6224.42
MW-2	02/16/10	6261.39	36.96	ND		6224.43
MW-2	05/24/10	6261.39	36.55	36.48	0.07	6224.89
MW-2	09/27/10	6261.39	37.58	37.57	0.01	6223.82

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-2	11/08/10	6261.39	37.72	ND		6223.67
MW-2	02/01/11	6261.39	36.92	ND		6224.47
MW-2	05/02/11	6261.39	36.71	ND		6224.68
MW-2	09/23/11	6261.39	38.01	ND		6223.38
MW-2	11/10/11	6261.39	37.70	37.69	0.01	6223.70
MW-2	02/22/12	6261.39	37.54	37.39	0.15	6223.96
MW-2	05/15/12	6261.39	37.48	37.37	0.11	6223.99
MW-2	06/05/13	6261.39	NA	ND		NA
MW-2	09/10/13	6261.39	NA	ND		NA
MW-2	12/11/13	6261.39	NA	ND		NA
MW-2	04/04/14	6261.39	NA	ND		NA
MW-2 abandoned and replaced with MW-2R on September 26, 2016						
MW-2R	10/15/16	6260.93	37.97	37.62	0.35	6223.22
MW-2R	06/07/17	6261.93	36.94	36.53	0.41	6224.30
MW-2R	11/14/17	6262.93	37.76	36.95	0.81	6223.78

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-3	09/05/00	6261.71	37.40	NR		6224.31
MW-3	07/03/01	6261.71	37.69	NR		6224.02
MW-3	09/04/01	6261.71	37.50	NR		6224.21
MW-3	09/24/01	6261.71	37.51	NR		6224.20
MW-3	04/01/02	6261.71	37.08	NR		6224.63
MW-3	07/15/02	6261.71	37.13	NR		6224.58
MW-3	10/08/02	6261.71	38.09	NR		6223.63
MW-3	07/17/03	6261.71	38.28	ND		6223.43
MW-3	10/13/03	6261.71	38.34	ND		6223.37
MW-3	01/19/04	6261.71	37.69	ND		6224.02
MW-3	04/20/04	6261.71	37.26	ND		6224.45
MW-3	07/27/04	6261.71	38.36	ND		6223.35
MW-3	10/20/04	6261.71	38.72	ND		6222.99
MW-3	01/25/05	6261.71	38.13	ND		6223.58
MW-3	04/14/05	6261.71	37.74	ND		6223.97
MW-3	07/19/05	6261.71	38.74	ND		6222.97
MW-3	10/21/05	6261.71	38.48	ND		6223.23
MW-3	01/23/06	6261.71	37.89	ND		6223.82
MW-3	04/28/06	6261.71	37.61	ND		6224.10
MW-3	07/26/06	6261.71	38.34	ND		6223.37
MW-3	11/07/06	6261.71	36.50	ND		6225.21
MW-3	01/17/07	6261.71	35.98	ND		6225.73
MW-3	04/24/07	6261.71	35.64	ND		6226.07
MW-3	07/31/07	6261.71	36.59	ND		6225.12
MW-3	10/25/07	6261.71	36.20	ND		6225.51
MW-3	01/25/08	6261.71	36.00	ND		6225.71
MW-3	04/18/08	6261.71	35.56	ND		6226.15
MW-3	07/23/08	6261.71	36.60	ND		6225.11
MW-3	10/08/08	6261.71	37.09	ND		6224.62
MW-3	10/13/08	6261.71	37.09	ND		6224.62
MW-3	01/16/09	6261.71	36.83	ND		6224.88
MW-3	04/06/09	6261.71	36.43	ND		6225.28
MW-3	08/25/09	6261.71	37.62	ND		6224.09
MW-3	11/03/09	6261.71	37.67	ND		6224.04
MW-3	02/16/10	6261.71	37.16	ND		6224.55
MW-3	05/24/10	6261.71	37.02	ND		6224.69
MW-3	09/27/10	6261.71	38.07	ND		6223.64
MW-3	11/08/10	6261.71	37.82	ND		6223.89
MW-3	02/01/11	6261.71	37.39	ND		6224.32
MW-3	05/02/11	6261.71	37.28	ND		6224.43
MW-3	09/23/11	6261.71	38.15	ND		6223.56

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-3	11/10/11	6261.71	38.13	ND		6223.58
MW-3	02/22/12	6261.71	37.85	ND		6223.86
MW-3	05/15/12	6261.71	37.87	ND		6223.84
MW-3	06/05/13	6261.71	38.26	ND		6223.45
MW-3	09/10/13	6261.71	38.95	ND		6222.76
MW-3	12/11/13	6261.71	DRY	ND		DRY
MW-3	04/04/14	6261.71	DRY	ND		DRY
MW-3	10/22/14	6261.71	DRY	ND		DRY
MW-3	05/28/15	6261.71	DRY	ND		DRY
MW-3	11/21/15	6261.71	DRY	ND		DRY
MW-3	04/17/16	6261.71	DRY	ND		DRY
MW-3 abandoned and replaced with MW-3R on September 26, 2016						
MW-3R	10/15/16	6261.09	37.92	ND		6223.17
MW-3R	06/07/17	6261.09	36.83	ND		6224.26
MW-3R	11/14/17	6261.09	37.37	ND		6223.72

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-4	11/08/06	6258.51	32.95	ND		6225.56
MW-4	01/17/07	6258.51	32.63	ND		6225.88
MW-4	04/24/07	6258.51	32.30	ND		6226.21
MW-4	07/31/07	6258.51	33.33	ND		6225.18
MW-4	10/25/07	6258.51	32.90	ND		6225.61
MW-4	01/25/08	6258.51	32.64	ND		6225.87
MW-4	04/18/08	6258.51	32.20	ND		6226.31
MW-4	07/23/08	6258.51	33.30	ND		6225.21
MW-4	10/08/08	6258.51	33.79	ND		6224.72
MW-4	10/13/08	6258.51	33.80	ND		6224.71
MW-4	01/16/09	6258.51	33.53	ND		6224.98
MW-4	04/06/09	6258.51	33.18	ND		6225.33
MW-4	08/25/09	6258.51	34.35	ND		6224.16
MW-4	11/03/09	6258.51	34.35	ND		6224.16
MW-4	02/16/10	6258.51	34.05	ND		6224.46
MW-4	05/24/10	6258.51	33.65	ND		6224.86
MW-4	09/27/10	6258.51	34.81	ND		6223.70
MW-4	11/08/10	6258.51	34.55	ND		6223.96
MW-4	02/01/11	6258.51	34.12	ND		6224.39
MW-4	05/02/11	6258.51	33.93	ND		6224.58
MW-4	09/23/11	6258.51	35.22	ND		6223.29
MW-4	11/10/11	6258.51	35.02	ND		6223.49
MW-4	02/22/12	6258.51	34.66	ND		6223.85
MW-4	05/15/12	6258.51	34.61	ND		6223.90
MW-4	06/05/13	6258.51	34.96	ND		6223.55
MW-4	09/10/13	6258.51	35.61	ND		6222.90
MW-4	12/11/13	6258.51	34.73	ND		6223.78
MW-4	04/14/14	6258.51	34.21	ND		6224.30
MW-4	10/22/14	6258.51	35.10	ND		6223.41
MW-4	05/28/15	6258.51	34.08	ND		6224.43
MW-4	11/21/15	6258.51	34.33	ND		6224.18
MW-4	04/17/16	6258.51	33.92	ND		6224.59
MW-4	10/15/16	6258.51	35.27	ND		6223.24
MW-4	06/07/17	6258.51	34.23	ND		6224.28
MW-4	11/14/17	6258.51	34.73	ND		6223.78

TABLE 2 - GROUNDWATER ELEVATION RESULTS

K-27 Line Drip						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-5	10/15/16	6264.51	41.24	ND		6223.27
MW-5	06/07/17	6264.51	40.14	ND		6224.37
MW-5	11/14/17	6264.51	40.70	ND		6223.81
MW-6	10/15/16	6263.51	40.14	ND		6223.37
MW-6	06/07/17	6263.51	39.07	ND		6224.44
MW-6	11/14/17	6263.51	39.69	ND		6223.82
MW-7	10/15/16	6262.84	39.32	ND		6223.52
MW-7	06/07/17	6262.84	37.34	ND		6225.50
MW-7	11/14/17	6262.84	37.88	ND		6224.96
MW-8	10/15/16	6260.37	37.10	ND		6223.27
MW-8	06/07/17	6260.37	36.08	ND		6224.29
MW-8	11/14/17	6260.37	36.56	ND		6223.81
MW-9	11/14/17	6261.66	38.14	37.75		6223.81
MW-10	11/14/17	6257.55	33.78	ND		6223.77

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

TABLE 3 - SOIL ANALYTICAL RESULTS

K27 Line Drip											
Location (depth in feet bgs)	**Date (mm/dd/yy)**	**Benzene (mg/kg)**	**Toluene (mg/kg)**	**Ethylbenzene (mg/kg)**	**Total Xylenes (mg/kg)**	**BTEX Total (mg/kg)**	**GRO C6-10 (mg/kg)**	**DRO C10-28 (mg/kg)**	**MRO C28-35 (mg/kg)**	**TPH (mg/kg)**	**Chloride (mg/kg)**
NMOCD Criteria:		10	NE	NE	NE	50	NE	NE	NE	100	600
MW-2R (32.5-33.5)	09/24/16	0.55	4.2	4.3	23	32.1	1100	190	BRL	**1290**	BRL
MW-3R (31-32)	09/24/16	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
MW-5 (36-37)	09/22/16	BRL	BRL	BRL	BRL	BRL	38	9.4	BRL	47	BRL
MW-6 (36.5-37.5)	09/23/16	0.91	2.2	3.1	21	27.2	640	150	BRL	**790**	BRL
MW-7 (34.5-35.5)	09/23/16	4.0	4.9	7.7	25	41.6	2000	110	BRL	**2110**	BRL
MW-8 (33-34)	09/25/16	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
MW-9 (32-33)	11/05/17	0.0017	BRL	BRL	0.011	0.0127	0.42	7.1	BRL	7.52	BRL
MW-10 (33-34)	11/06/17	BRL	BRL	BRL	0.0050	BRL	BRL	BRL	BRL	BRL	BRL
SB-1 (22.5-23.5)	09/25/16	BRL	BRL	0.07	0.37	0.44	21	36	BRL	57	BRL
SB-1 (24.5-25.5)	09/25/16	**20**	120	30	150	**320**	6900	220	24	**7144**	BRL
SB-1 (28.5-29.5)	09/25/16	**25**	120	24	120	**289**	6400	120	BRL	**6520**	BRL

Notes:

mg/kg	Milligrams per kilogram
BRL	Below Reporting Limits
NE	New Mexico Oil Conservation Division (NMOCD) Standard Not Established
BTEX	Benzene, toluene, ethylbenzene, xylenes
GRO	Gasoline range organics
DRO	Diesel range organics
MRO	Motor oil range organics
Total BTEX	Sum of the detectable concentrations of individual BTEX constituents
TPH	Total Petroleum Hydrocarbon concentration is calculated by adding GRO, DRO, and MRO and rounded to the nearest mg/kg.
NMOCD Criteria	New Mexico Oil Conservation Division closure criteria for groundwater ≤50 feet below bottom of pit to groundwater less than 10,000 mg/L TDS Results bolded and highlighted yellow exceed their respective NMOCD Standards

FIGURES

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\K-27 LD072\2017 MAPS\1 SA 2017\K-27_GARM_1SA_2017.mxd

LEGEND:

- 6257 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- —X— — FENCE
- GAS — NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- SOIL BORING
- SMA BENCHMARK

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
NS = NOT SAMPLED
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 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	2/7/2018	SLG	SLG	SRV

TITLE:

GROUNDWATER ANALYTICAL RESULTS
JUNE 7, 2017

PROJECT: ***K27 LD072***
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

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Figure No.: 1

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\K-27 LD072\2017 MAPS\1 SA 2017\K-27_GECM_1SA_2017.mxd

LEGEND:

- 6257 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- FENCE
- GAS — NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- SMA BENCHMARK

NOTES:

5962.23 — GROUNDWATER ELEVATION (CORRECTED FOR PRODUCT THICKNESS WHEN PRESENT) FEET ABOVE MEAN SEA LEVEL

5962.4 — CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL)

DIRECTION OF APPARENT GROUNDWATER FLOW

N

SCALE IN FEET

0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/7/2018	SLG	SLG	SRV

TITLE:

GROUNDWATER ELEVATION MAP
JUNE 7, 2017

PROJECT:

K27 LD072
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

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Figure No.: 2

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\K-27 LD072\2017 MAPS\K-27_GARM_2SA_2017.mxd

LEGEND:

- 6257 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- FENCE
- GAS — NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- SOIL BORING
- SMA BENCHMARK

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
NS = NOT SAMPLED
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 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	2/7/2018	SLG	SLG	SRV

TITLE:

GROUNDWATER ANALYTICAL RESULTS
NOVEMBER 14, 2017

PROJECT:
K27 LD072
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

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Figure No.:
3

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\K-27 LD072\2017 MAPS\K-27_GECM_2SA_2017.mxd

MW-4
MW-4
6223.78
TMW-4
MW-10
6223.77
MW-10
MW-8
MW-8
6223.81
MW-3R
MW-3R
6223.72
MW-3
MW-2
MW-2R
6223.78
MW-2R
6224
6224.25
6224.5
6224.75
6223.75
MW-9
6223.81
MW-9
MW-7
MW-7
6224.96
MW-1
6223.97
MW-1
6230
MW-5
6223.81
MW-5
FORMER CORRAL
FORMER EPC PIT EXCAVATED TO 12 FEET
MW-6
6223.82
MW-6
DRIP LINE
6235
SMA BENCHMARK
ELEV. 6260.32'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO CENTRAL
FORMER TANK & FENCE LOCATION
AERIAL IMAGERY FROM GOOGLE EARTH, DATED 5/16/2016.

LEGEND:

- 6257 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- —X— — FENCE
- GAS — NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- SMA BENCHMARK

NOTES:

- 5962.23 — GROUNDWATER ELEVATION (CORRECTED FOR PRODUCT THICKNESS WHEN PRESENT) FEET ABOVE MEAN SEA LEVEL
- 5962.4 — CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL)
- DIRECTION OF APPARENT GROUNDWATER FLOW

N

SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/7/2018	SLG	SLG	SRV

TITLE:

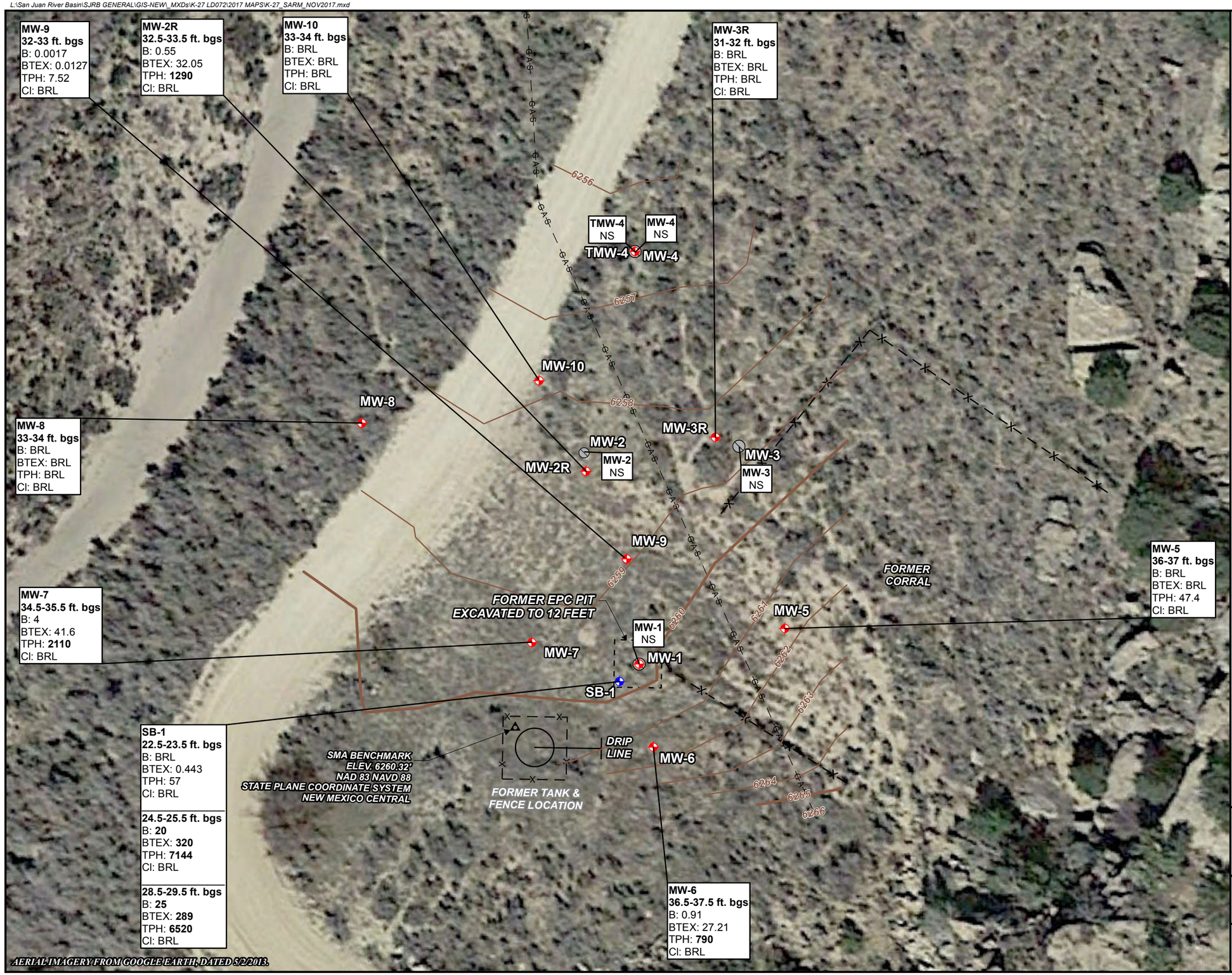
GROUNDWATER ELEVATION MAP
NOVEMBER 14, 2017

PROJECT:
K27 LD072
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

Stantec

Figure No.: 4

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\K-27 LD072\2017 MAPS\K-27_SARM_NOV2017.mxd



LEGEND:

- 6257 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- FENCE
- GAS — NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- SOIL BORING
- SMA BENCHMARK

NOTES:

MW-5 SAMPLES COLLECTED 9/22/2016; MW-6 AND MW-7 9/23/2016; MW-2R AND MW-3R 9/24/2016; MW-8 AND SB-1 9/25/2016; MW-9 11/5/2017; MW-10 11/6/2017.

UTILITY LOCATIONS ARE APPROXIMATE.

ft. bgs = FEET BELOW GROUND SURFACE
NS = NOT SAMPLED

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF APPLICABLE NEW MEXICO OIL CONSERVATION DIVISION SOIL CRITERIA FOR THAT ANALYTE.
mg/kg = MILLIGRAM/KILOGRAM
BRL = BELOW REPORTING LIMITS

ANALYTE	NMOCD STANDARDS
B = Benzene	10 mg/kg
BTEX = Benzene, toluene, ethylbenzene, xylenes	50 mg/kg
TPH = Total Petroleum Hydrocarbons	100 mg/kg
Cl = Chloride	600 mg/kg

N

SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	2/7/2018	SLG	SLG	SRV

TITLE:

SOIL ANALYTICAL RESULTS

PROJECT:
K27 LD072
SAN JUAN RIVER BASIN
RIO ARRIBA COUNTY, NEW MEXICO

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Figure No.: **5**

APPENDICES

APPENDIX A – NMOCD NOTIFICATION OF SITE ACTIVITIES

APPENDIX B – BOREHOLE AND WELL CONSTRUCTION LOGS

APPENDIX C – SOIL ANALYTICAL REPORT

APPENDIX D – WASTE DISPOSAL DOCUMENTATION

APPENDIX E – MDPE REPORT

APPENDIX F – JUNE 9, 2017 GROUNDWATER SAMPLING ANALYTICAL REPORT
NOVEMBER 12, 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:	3RP-204 - K-27 LD072 - Work Plan for Additional Delineation Activities
Date:	Friday, October 06, 2017 5:15:00 PM
Attachments:	2017-10_Monitoring Well Installation Work Plan (K27).pdf

Hi Randy –

Please find attached the above-referenced work plan for your review and files. Drilling for the well installation activities are planned to begin on Saturday, November 4, 2017, and conclude the following week. Utility clearing activities are to be completed on Monday, October 16, 2017).

Please feel free to contact Joseph Wiley or me if you have any questions or need additional information.

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: 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

Drilling Log

Monitoring Well **MW-9**

Project *K-27 Line Drip* Client *El Paso CGP Company, LLC*

Location *Rio Arriba County, New Mexico* Project Number *193710219*

Surface Elev. *6259.12 ft* North *1978361.45500* East *1278607.79300*

Top of Casing *6261.66 ft* Water Level Initial ▽ *6225.66* 11/05/17 00:00 Static ▼ *6223.52* 11/14/17 00:00

Hole Depth *49.6 ft* Screen: Diameter *2 in* Length *25.0 ft* Type/Size *PVC/0.01 in*

Hole Diameter *8.25 in* Casing: Diameter *2 in* Length *27.2 ft* Type *PVC*

Drill Co. *Cascade Drilling* Drilling Method *Hollow-Stem Auger* Sand Pack *10/20 Silica*

Driller *Matt Cain* Driller Reg. # *WD-1210* Log By *Andy Riemer*

Start Date *11/5/2017* Completion Date *11/6/2017* Checked By *S. Varsa*

COMMENTS
Surface is dirt with minor vegetation.

Bentonite Grout | Bentonite Granules | Grout | Portland Cement | Sand Pack | Sand Pack

Depth (ft)	PID (ppm)	% Recovery	Blow Count Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.
0	NM					
	0.0	100%			SC	Sand, brown, slightly moist, slightly clayey, fine-grained. (Borehole hydro-excavated to 8'9" on 10/16/2017).
	0.0				SM	Sand, tan to light gray, dry, hard, slightly silty, very fine-grained.
5	0.0					
	NR					No recovery.
	NM					
	NM	50%			SM	Sand, silty, 7.5YR 5/4 brown, medium dense, fine-grained, moist, no odor.
10	1.4					
	NR	60%				
	NR				ML	Silt, 7.5YR 6/3 light brown, hard, dry, no odor.
	1.3					
	1.1				SM	Sand, silty, 7.5YR 5/4 brown, medium dense, fine-grained, moist, no odor.
15	1.5					
	0.6	100%				
	1.0					At 17', becomes 10YR 6/4 light yellowish-brown.
	3.5					
	5.5					
20	5.5					At 20', becomes loose.
	NR	80%				
	6.1					At 22', becomes dense.
	3.1					
	22.3					
25	22.5					At 24', becomes damp to moist at 26', medium dense, slight hydrocarbon odor noted at 24', 10YR 5/4 yellowish-brown at 26'.
	2.8	100%				
	4.6					
	11.6					
	44.2					
30						

Continued Next Page

Well Completion

Drilling Log

Monitoring Well **MW-9**

Project *K-27 Line Drip* Client *El Paso CGP Company, LLC*

Location *Rio Arriba County, New Mexico* Project Number *193710219*

Depth (ft)	PID (ppm)	% Recovery	Blow Count Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Well Completion
						Continued	
30	93.3					At 30', becomes loose again.	
	NR	40%					
	NR						
	NR				SM		
	305.5	MW-9 33-34'				At 34', becomes very moist to wet at 36', moderate hydrocarbon odor at 34' to strong at 36', 2.5Y 2.5/1 black, dense, low plasticity.	
35	1704						
	NR	40%					
	NR					Sand, 2.5Y 2.5/1 black becoming 10YR 5/2 grayish brown at 39', dense, fine-grained, wet, slight hydrocarbon odor.	
	NR						
	1057						
40	1258						
	NR	40%			SP		
	NR						
	NR						
	14.7					At 44', little silt present.	
45	22.2						
	NR	60%				Sand, clayey, 10YR 5/2 grayish-brown, medium dense, fine-grained, low plasticity, no odor.	
	NR				SC		
	5.5					Sandstone, 10YR 7/2 light gray with 10YR 5/8 yellowish-brown striations, lightly cemented, no odor.	
	NM						
50	15.5					End of boring - 50'.	
55							
60							
65							
70							

Drilling Log

Monitoring Well **MW-10**

Project *K-27 Line Drip* Client *El Paso CGP Company, LLC*

Location *Rio Arriba County, New Mexico* Project Number *193710219*

Surface Elev. *6257.53 ft* North *1978417.05600* East *1278580.44000*

Top of Casing *6257.53 ft* Water Level Initial ▽ *6223.53* 11/06/17 00:00 Static ▼ *6223.75* 11/14/17 00:00

Hole Depth *50.3 ft* Screen: Diameter *2 in* Length *25.0 ft* Type/Size *PVC/0.01 in*

Hole Diameter *8.25 in* Casing: Diameter *2 in* Length *25.4 ft* Type *PVC*

Drill Co. *Cascade Drilling* Drilling Method *Hollow-Stem Auger* Sand Pack *10/20 Silica*

Driller *Matt Cain* Driller Reg. # *WD-1210* Log By *Andy Riemer*

Start Date *11/6/2017* Completion Date *11/6/2017* Checked By *S. Varsa*

COMMENTS
Surface is dirt with minor vegetation. Well completed as a flushmount due to location at site.

Bentonite Grout | Bentonite Granules | Grout | Portland Cement | Sand Pack | Sand Pack

Depth (ft)	PID (ppm)	% Recovery	Blow Count Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Well Completion
0	NM						
	0.0					Sand, clayey, dense, fine-grained. (Borehole hydro-excavated to 8' on 10/17/2017).	
	0.0				SC		
5	0.0						
	NR					No recovery.	
	NM						
	NR	50%				Sand, silty, 10YR 5/4 yellowish-brown, medium dense, fine-grained, moist, no odor.	
10	4.8						
	NR	60%					
	NR				SM		
	21.6						
	8.5						
15	2.9					At 15', becomes 10YR 6/3 pale brown, dry.	
	NR	60%					
	NR				ML	Silt, 10YR 5/4 yellowish-brown, medium dense, damp no odor.	
	2.7					Sand, silty, 10YR 5/4 yellowish-brown, hard, fine-grained, dry, no odor.	
	1.7				SM		
20	0.9						
	NR	80%				Silt, 10YR 6/4 light yellowish-brown, dense, dry, no odor	
	1.2				ML	At 22', becomes 10YR 5/4 yellowish-brown, hard.	
	2.0					At 23', becomes 10YR 6/4 light yellowish-brown again, soft.	
	1.8					Sand, silty, 10YR 5/4 yellowish-brown, medium dense, fine-grained, damp, no odor.	
25	2.9						
	NR	80%					
	1.1				SM	At 27', becomes moist.	
	4.1					At 28', becomes 10YR 4/6 dark yellowish-brown, slightly cohesive.	
	2.6						
30							

Continued Next Page

Drilling Log

Monitoring Well **MW-10**

Project *K-27 Line Drip* Client *El Paso CGP Company, LLC*

Location *Rio Arriba County, New Mexico* Project Number *193710219*

Depth (ft)	PID (ppm)	% Recovery	Blow Count Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Well Completion
						Continued	
30	2.4				SM		
	NR	60%					
	NR				SP	Sand, 10YR 5/6 yellowish-brown, fine-grained, very moist, no odor.	
	2.3	MW-10 32-33'					
	1.7				SC	Sand. clayey, 10YR 5/6 yellowish-brown, fine-grained, low plasticity, very moist, no odor.	
35	1.2						
	NR	60%				At 36', becomes 10YR 5/4 yellowish-brown, wet.	
	NR				ML	Silt, clayey, 10YR 5/2 grayish-brown, medium dense, low plasticity, wet, no odor.	
	0.7						
	1.1						
40	1.3				SC	Sand, clayey, 10YR 5/4 yellowish-brown, soft, fine-grained, low plasticity, wet, no odor.	
	NR	60%					
	NR						
	0.8						
	0.3				SW	Sand, 10YR 6/4 light yellowish-brown, fine to medium grained, loose, wet, well-graded, no odor.	
45	0.5						
	0.9	100%					
	1.4						
	2.0					At 48.5', becomes 10YR 5/4 yellowish-brown.	
	3.3						
50	5.1					End of boring = 50'.	
55							
60							
65							
70							

APPENDIX C

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: 400-145697-1
Client Project/Site: ElPaso CGP Company, LLC - K27 LD072

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

Attn: Ms. Sarah Gardner

Carol M Webb

Authorized for release by:
11/16/2017 2:17:02 PM

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

Table of Contents

Definitions/Glossary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

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)

Case Narrative

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

Job ID: 400-145697-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-145697-1

Comments
No additional comments.

Receipt
The samples were received on 11/8/2017 8:42 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.1º C.

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

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

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

Organic Prep
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.

Lab Admin
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 - K27 LD072

TestAmerica Job ID: 400-145697-1

Client Sample ID: MW-9 (33-34') — Lab Sample ID: 400-145697-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
C6-C10	0.42		0.11		mg/Kg	1	☼	8015B	Total/NA
Benzene	0.0017		0.0011		mg/Kg	1	☼	8021B	Total/NA
Xylenes, Total	0.011		0.0053		mg/Kg	1	☼	8021B	Total/NA
C10-C28	7.1		5.6		mg/Kg	1	☼	8015B	Total/NA

Client Sample ID: MW-10 (32-33') — Lab Sample ID: 400-145697-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.0050		0.0050		mg/Kg	1	☼	8021B	Total/NA

This Detection Summary does not include radiochemical test results.

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-145697-1	MW-9 (33-34')	Solid	11/05/17 14:40	11/08/17 08:42
400-145697-2	MW-10 (32-33')	Solid	11/06/17 10:50	11/08/17 08:42

Client Sample ID: MW-9 (33-34')
Date Collected: 11/05/17 14:40
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-1
Matrix: Solid
Percent Solids: 87.9

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	**0.42**		0.11		mg/Kg	☼	11/14/17 11:00	11/14/17 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*100*		*65 - 125*	*11/14/17 11:00*	*11/14/17 12:59*	*1*

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.0017**		0.0011		mg/Kg	☼	11/14/17 11:00	11/14/17 12:59	1
Ethylbenzene	<0.0011		0.0011		mg/Kg	☼	11/14/17 11:00	11/14/17 12:59	1
Toluene	<0.0053		0.0053		mg/Kg	☼	11/14/17 11:00	11/14/17 12:59	1
Xylenes, Total	**0.011**		0.0053		mg/Kg	☼	11/14/17 11:00	11/14/17 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*98*		*40 - 150*	*11/14/17 11:00*	*11/14/17 12:59*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	**7.1**		5.6		mg/Kg	☼	11/09/17 11:45	11/09/17 21:21	1
C28-C35	<5.6		5.6		mg/Kg	☼	11/09/17 11:45	11/09/17 21:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*61*		*27 - 151*	*11/09/17 11:45*	*11/09/17 21:21*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<23		23		mg/Kg	☼		11/14/17 07:24	1

Client Sample ID: MW-10 (32-33')

Date Collected: 11/06/17 10:50
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-2

Matrix: Solid
Percent Solids: 93.8

Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<0.10		0.10		mg/Kg	☼	11/14/17 11:00	11/14/17 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*98*		*65 - 125*	*11/14/17 11:00*	*11/14/17 13:35*	*1*

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0010		0.0010		mg/Kg	☼	11/14/17 11:00	11/14/17 13:35	1
Ethylbenzene	<0.0010		0.0010		mg/Kg	☼	11/14/17 11:00	11/14/17 13:35	1
Toluene	<0.0050		0.0050		mg/Kg	☼	11/14/17 11:00	11/14/17 13:35	1
Xylenes, Total	**0.0050**		0.0050		mg/Kg	☼	11/14/17 11:00	11/14/17 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*96*		*40 - 150*	*11/14/17 11:00*	*11/14/17 13:35*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	<5.3		5.3		mg/Kg	☼	11/09/17 11:45	11/09/17 21:32	1
C28-C35	<5.3		5.3		mg/Kg	☼	11/09/17 11:45	11/09/17 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*68*		*27 - 151*	*11/09/17 11:45*	*11/09/17 21:32*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<21		21		mg/Kg	☼		11/14/17 08:32	1

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

GC VOA

Analysis Batch: 375813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Total/NA	Solid	8021B	375857
400-145697-2	MW-10 (32-33')	Total/NA	Solid	8021B	375857
MB 400-375813/4	Method Blank	Total/NA	Solid	8021B	
LCS 400-375857/2-A	Lab Control Sample	Total/NA	Solid	8021B	375857
400-145697-2 MS	MW-10 (32-33')	Total/NA	Solid	8021B	375857
400-145697-2 MSD	MW-10 (32-33')	Total/NA	Solid	8021B	375857

Analysis Batch: 375814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Total/NA	Solid	8015B	375857
400-145697-2	MW-10 (32-33')	Total/NA	Solid	8015B	375857
MB 400-375814/4	Method Blank	Total/NA	Solid	8015B	
LCS 400-375857/3-A	Lab Control Sample	Total/NA	Solid	8015B	375857
400-145697-2 MS	MW-10 (32-33')	Total/NA	Solid	8015B	375857
400-145697-2 MSD	MW-10 (32-33')	Total/NA	Solid	8015B	375857

Prep Batch: 375857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Total/NA	Solid	5035	
400-145697-2	MW-10 (32-33')	Total/NA	Solid	5035	
LCS 400-375857/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 400-375857/3-A	Lab Control Sample	Total/NA	Solid	5035	
400-145697-2 MS	MW-10 (32-33')	Total/NA	Solid	5035	
400-145697-2 MS	MW-10 (32-33')	Total/NA	Solid	5035	
400-145697-2 MSD	MW-10 (32-33')	Total/NA	Solid	5035	
400-145697-2 MSD	MW-10 (32-33')	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 375282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Total/NA	Solid	3546	
400-145697-2	MW-10 (32-33')	Total/NA	Solid	3546	
MB 400-375282/1-A	Method Blank	Total/NA	Solid	3546	
LCS 400-375282/2-A	Lab Control Sample	Total/NA	Solid	3546	
400-145698-A-2-A MS	Matrix Spike	Total/NA	Solid	3546	
400-145698-A-2-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	

Analysis Batch: 375377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Total/NA	Solid	8015B	375282
400-145697-2	MW-10 (32-33')	Total/NA	Solid	8015B	375282
MB 400-375282/1-A	Method Blank	Total/NA	Solid	8015B	375282
LCS 400-375282/2-A	Lab Control Sample	Total/NA	Solid	8015B	375282
400-145698-A-2-A MS	Matrix Spike	Total/NA	Solid	8015B	375282
400-145698-A-2-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B	375282

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

HPLC/IC

Leach Batch: 375725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Soluble	Solid	DI Leach	
400-145697-2	MW-10 (32-33')	Soluble	Solid	DI Leach	
MB 400-375725/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 400-375725/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 400-375725/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
400-145697-1 MS	MW-9 (33-34')	Soluble	Solid	DI Leach	
400-145697-1 MSD	MW-9 (33-34')	Soluble	Solid	DI Leach	

Analysis Batch: 375895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Soluble	Solid	300.0	375725
400-145697-2	MW-10 (32-33')	Soluble	Solid	300.0	375725
MB 400-375725/1-A	Method Blank	Soluble	Solid	300.0	375725
LCS 400-375725/2-A	Lab Control Sample	Soluble	Solid	300.0	375725
LCSD 400-375725/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	375725
400-145697-1 MS	MW-9 (33-34')	Soluble	Solid	300.0	375725
400-145697-1 MSD	MW-9 (33-34')	Soluble	Solid	300.0	375725

General Chemistry

Analysis Batch: 375339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-145697-1	MW-9 (33-34')	Total/NA	Solid	Moisture	
400-145697-2	MW-10 (32-33')	Total/NA	Solid	Moisture	
400-145615-A-6 DU	Duplicate	Total/NA	Solid	Moisture	

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 400-375814/4
Matrix: Solid
Analysis Batch: 375814

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<0.10		0.10		mg/Kg			11/14/17 12:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid)	*95*		*65 - 125*		*11/14/17 12:22*	*1*

Lab Sample ID: LCS 400-375857/3-A
Matrix: Solid
Analysis Batch: 375814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375857

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C6-C10			1.00	1.11		mg/Kg		111	62 - 141		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*100*		*65 - 125*

Lab Sample ID: 400-145697-2 MS
Matrix: Solid
Analysis Batch: 375814

Client Sample ID: MW-10 (32-33')
Prep Type: Total/NA
Prep Batch: 375857

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
C6-C10	<0.10		1.03	1.09		mg/Kg	☼	101	10 - 150		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*99*		*65 - 125*

Lab Sample ID: 400-145697-2 MSD
Matrix: Solid
Analysis Batch: 375814

Client Sample ID: MW-10 (32-33')
Prep Type: Total/NA
Prep Batch: 375857

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C6-C10	<0.10		1.02	1.10		mg/Kg	☼	102	10 - 150	0	32

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid)	*99*		*65 - 125*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-375813/4
Matrix: Solid
Analysis Batch: 375813

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0010		0.0010		mg/Kg			11/14/17 12:22	1
Ethylbenzene	<0.0010		0.0010		mg/Kg			11/14/17 12:22	1
Toluene	<0.0050		0.0050		mg/Kg			11/14/17 12:22	1
Xylenes, Total	<0.0050		0.0050		mg/Kg			11/14/17 12:22	1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 400-375813/4
Matrix: Solid
Analysis Batch: 375813

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	94		40 - 150		11/14/17 12:22	1

Lab Sample ID: LCS 400-375857/2-A
Matrix: Solid
Analysis Batch: 375813

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375857

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.0457		mg/Kg		91	74 - 127
Ethylbenzene	0.0500	0.0455		mg/Kg		91	79 - 131
Toluene	0.0500	0.0462		mg/Kg		92	76 - 127
Xylenes, Total	0.150	0.136		mg/Kg		91	80 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	97		40 - 150

Lab Sample ID: 400-145697-2 MS
Matrix: Solid
Analysis Batch: 375813

Client Sample ID: MW-10 (32-33')
Prep Type: Total/NA
Prep Batch: 375857

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.0010		0.0516	0.0506		mg/Kg	☼	98	10 - 150
Ethylbenzene	<0.0010		0.0516	0.0515		mg/Kg	☼	100	10 - 150
Toluene	<0.0050		0.0516	0.0512		mg/Kg	☼	96	10 - 150
Xylenes, Total	0.0050		0.155	0.154		mg/Kg	☼	97	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	97		40 - 150

Lab Sample ID: 400-145697-2 MSD
Matrix: Solid
Analysis Batch: 375813

Client Sample ID: MW-10 (32-33')
Prep Type: Total/NA
Prep Batch: 375857

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.0010		0.0511	0.0489		mg/Kg	☼	96	10 - 150	3	34
Ethylbenzene	<0.0010		0.0511	0.0500		mg/Kg	☼	98	10 - 150	3	66
Toluene	<0.0050		0.0511	0.0493		mg/Kg	☼	93	10 - 150	4	44
Xylenes, Total	0.0050		0.153	0.150		mg/Kg	☼	94	50 - 150	3	46

Surrogate	MSD %Recovery	MSD Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	97		40 - 150

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 400-375282/1-A
Matrix: Solid
Analysis Batch: 375377

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 375282

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
C10-C28	<5.0		5.0		mg/Kg		11/09/17 11:45	11/09/17 20:22	1
C28-C35	<5.0		5.0		mg/Kg		11/09/17 11:45	11/09/17 20:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*78*		*27 - 151*	*11/09/17 11:45*	*11/09/17 20:22*	*1*

Lab Sample ID: LCS 400-375282/2-A
Matrix: Solid
Analysis Batch: 375377

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 375282

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C28			327	234		mg/Kg		72	63 - 153		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*74*		*27 - 151*

Lab Sample ID: 400-145698-A-2-A MS
Matrix: Solid
Analysis Batch: 375377

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 375282

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
C10-C28	530	F1	423	753	F1	mg/Kg	☼	53	62 - 204		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*75*		*27 - 151*

Lab Sample ID: 400-145698-A-2-B MSD
Matrix: Solid
Analysis Batch: 375377

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 375282

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C28	530	F1	425	784	F1	mg/Kg	☼	60	62 - 204	4	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl	*73*		*27 - 151*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-375725/1-A
Matrix: Solid
Analysis Batch: 375895

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<20		20		mg/Kg			11/14/17 06:15	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 400-375725/2-A
Matrix: Solid
Analysis Batch: 375895

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			99.6	95.1		mg/Kg		95	80 - 120		

Lab Sample ID: LCSD 400-375725/3-A
Matrix: Solid
Analysis Batch: 375895

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			98.8	93.6		mg/Kg		95	80 - 120	2	15

Lab Sample ID: 400-145697-1 MS
Matrix: Solid
Analysis Batch: 375895

Client Sample ID: MW-9 (33-34')
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	<23		115	121		mg/Kg	☼	93	80 - 120		

Lab Sample ID: 400-145697-1 MSD
Matrix: Solid
Analysis Batch: 375895

Client Sample ID: MW-9 (33-34')
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<23		115	122		mg/Kg	☼	93	80 - 120	1	15

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

Client Sample ID: MW-9 (33-34')
Date Collected: 11/05/17 14:40
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			375339	11/09/17 14:26	MEP	TAL PEN
	Instrument ID: NOEQUIP									

Client Sample ID: MW-9 (33-34')
Date Collected: 11/05/17 14:40
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-1
Matrix: Solid
Percent Solids: 87.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.36 g	5.0 g	375857	11/14/17 11:00	GRK	TAL PEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	375814	11/14/17 12:59	GRK	TAL PEN
	Instrument ID: CH_JOAN									
Total/NA	Prep	5035			5.36 g	5.0 g	375857	11/14/17 11:00	GRK	TAL PEN
Total/NA	Analysis	8021B		1	5 mL	5 mL	375813	11/14/17 12:59	GRK	TAL PEN
	Instrument ID: CH_JOAN									
Total/NA	Prep	3546			15.21 g	1.0 mL	375282	11/09/17 11:45	KLR	TAL PEN
Total/NA	Analysis	8015B		1			375377	11/09/17 21:21	TAJ	TAL PEN
	Instrument ID: Eva									
Soluble	Leach	DI Leach			2.48 g	50 mL	375725	11/13/17 14:24	JAW	TAL PEN
Soluble	Analysis	300.0		1			375895	11/14/17 07:24	JAW	TAL PEN
	Instrument ID: IC2									

Client Sample ID: MW-10 (32-33')
Date Collected: 11/06/17 10:50
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			375339	11/09/17 14:26	MEP	TAL PEN
	Instrument ID: NOEQUIP									

Client Sample ID: MW-10 (32-33')
Date Collected: 11/06/17 10:50
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-2
Matrix: Solid
Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.29 g	5.0 g	375857	11/14/17 11:00	GRK	TAL PEN
Total/NA	Analysis	8015B		1	5 mL	5 mL	375814	11/14/17 13:35	GRK	TAL PEN
	Instrument ID: CH_JOAN									
Total/NA	Prep	5035			5.29 g	5.0 g	375857	11/14/17 11:00	GRK	TAL PEN
Total/NA	Analysis	8021B		1	5 mL	5 mL	375813	11/14/17 13:35	GRK	TAL PEN
	Instrument ID: CH_JOAN									
Total/NA	Prep	3546			15.20 g	1.0 mL	375282	11/09/17 11:45	KLR	TAL PEN
Total/NA	Analysis	8015B		1			375377	11/09/17 21:32	TAJ	TAL PEN
	Instrument ID: Eva									

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

Client Sample ID: MW-10 (32-33')
Date Collected: 11/06/17 10:50
Date Received: 11/08/17 08:42

Lab Sample ID: 400-145697-2
Matrix: Solid
Percent Solids: 93.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			2.49 g	50 mL	375725	11/13/17 14:24	JAW	TAL PEN
Soluble	Analysis	300.0		1			375895	11/14/17 08:32	JAW	TAL PEN
	Instrument ID: IC2									

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: 400-145697-1
Project/Site: ElPaso CGP Company, LLC - K27 LD072

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: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-145697-1

Method	Method Description	Protocol	Laboratory
8015B	Gasoline Range Organics - (GC)	SW846	TAL PEN
8021B	Volatile Organic Compounds (GC)	SW846	TAL PEN
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL PEN
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
Moisture	Percent Moisture	EPA	TAL PEN

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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: ANDREW RIEMER	Lab PM: Webb, Carol M	Carrier Tracking No(s):	COC No: 400-68718-27870.1
Client Contact: Clint Oberbroeckling	Phone: 651.600.2308	E-Mail: carol.webb@testamericainc.com		Page: Page 1 of 1
Company: Stantec Consulting Services Inc		Analysis Requested		Job #: 193710219
Address: 11153 Aurora Avenue	Due Date Requested: PER ARF			Preservation Codes:
City: Des Moines	TAT Requested (days): PER ARF			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: IA, 50322-7904				Other:
Phone: 303-291-2239(Tel)	PO #: Purchase Order Requested			
Email: clint.w.oberbroeckling@mwhglobal.com	WO #:			
Project Name: K-27 LD072 Soil	Project #: 40005479			
Site: COUNSELOR, NEW MEXICO	SSOW#:			

400-145697 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)	8015B_DRO - TPH DRO ORO, Chloride (Method 300)	8015B_GRO, 8021B	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N		
MW-9 (33-34')	11/05/17	1440	G	S			N	N		
MW-10 (32-33')	11/06/17	1050	G	S			N	N		

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
Andrew C. Riemer	11/07/2017 @ 1445	STANTEC		11-8-17 0842	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
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: 0.1 C IR7 JJ

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 400-145697-1

Login Number: 145697
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	0.1°C IR-7
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

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. 691305
NMOCD PERMIT: NM -001-0005
Oil Field Waste Document, Form C138
INVOICE:

DATE 7-27-17
GENERATOR: EPCSU
HAULING CO. Sierra
ORDERED BY: Joseph Valley

DEL. TKT#.
BILL TO: EPCSU
DRIVER: Calvin
(Print Full Name)
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	79	K27-CD002	60	25°			60	
2							'17 JUL 27	9:29AM
3								
4								
5								

I, Calvin Davis 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

envirotech

Bill of Lading

MANIFEST # 58485
GENERATOR El Paso
POINT OF ORIGIN K27-LD 072
TRANSPORTER Sierra oil Field
DATE 11·29·17 JOB # 14073-0027

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 • FARMINGTON, NEW MEXICO 87401

LOAD NO.	COMPLETE DESCRIPTION OF SHIPMENT					TRANSPORTING COMPANY			
	DESTINATION	MATERIAL	GRID	YDS	BBLS	TKT#	TRK#	TIME	DRIVER SIGNATURE
1	LF II	Con't soil	Q10		6	-	22	1326	
					6				

RESULTS			LANDFARM EMPLOYEE	NOTES
<295	CHLORIDE TEST	1	Gray Robinson EL	
	PAINT FILTER TEST	1	Certification of above receival & placement	

By signing as the driver/transporter, I certify the material hauled from the above location has not been added to or tampered with. I certify the material is from the above mentioned Generator/Point of Origin and that no additional material has been added or mixed into the load.

Generator Onsite Contact _____ Phone _____

Signatures required prior to distribution of the legal document. DISTRIBUTION: **White** - Company Records, **Yellow** - Billing, **Pink** - Customer, **Goldenrod** - LF Copy

san juan reproduction 578-126

(6)

envirotech

BOL# 58485

CHLORIDE TESTING / PAINT FILTER TESTING

DATE 11-29-17 TIME 1326

Attach test strip here

CUSTOMER El Paso

SITE K27 LD072 Property

DRIVER [redacted]

SAMPLE (Soil) Straight ✓ With Dirt _____

CHLORIDE TEST 295 mg/Kg

ACCEPTED YES ✓ NO _____

PAINT FILTER TEST Time started 1326 Time completed 1340

PASS YES ✓ NO _____

SAMPLER/ANALYST Cory Kalinsons

5796 US Hwy 64, Farmington, NM 87401 Ph (505) 632-0615 Fr (800) 362-1879 Fx (505) 632-1865 info@envirotech-inc.com envirotech

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. 700108

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. Seirra Oil feild

DRIVER: Ryan

(Print Full Name)

ORDERED BY: Joseph Wilya

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	06	K-27 Line Drip 072	10	704			7.00	
2						'17 NOV 14		5:46PM
3								
4								
5								

I, [signature] 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 Mike Dunwell

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 E

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

August 15, 2017

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

Dear Stephen:

Re: K-27 LD072, San Juan County, NM (Event #1)

At your request, AcuVac Remediation, LLC (AcuVac) performed one 8.0-hour Mobile Dual Phase Extraction (MDPE) Event #1 on well MW-2R on July 26, 2017, at the above referenced site (Site). 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 event 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 event at the Site was 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	
	Event #1
	MW-2R
Event Hours	8.0
GW Recovery	302
NAPL Recovery	
Liquid	0
Vapor	2.2
Total	2.2
Gallons/Hour	**0.28**

SUMMARY OF MDPE EVENT #1- WELL MW-2R

- The total Event time was 8.0 hours. The event was conducted on July 26, 2017. This was the first event completed from well MW-2R, and therefore, there was no comparative data from this well.
- The total liquid volume recovered was 302 gals with no measureable liquid LNAPL recovered.
- Based on the HORIBA® data, total vapor LNAPL burned as IC engine fuel was 2.2 gals, for a total liquid and vapor LNAPL recovery of 2.2 gals, or 0.28 gals per hour.

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

Influent Vapor Data Well MW-2R		
Data Element		**Event #1**
TPH- Maximum	ppmv	19,640
TPH- Average	ppmv	13,855
TPH- Minimum	ppmv	10,960
TPH- Initial	ppmv	19,640
TPH- Ending	ppmv	11,410
CO_2	%	3.32
CO	%	0.05
O_2	%	15.0
H_2S	Ppm	10

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

Well Vacuum and Well Vapor Flow Well MW-2R		
Data Element		**Event #1**
Well Vacuum- Maximum	"H_2O	150.00
Well Vacuum- Average	"H_2O	146.47
Well Vacuum- Minimum	"H_2O	130.00
Well Vapor Flow- Maximum	scfm	10.71
Well Vapor Flow- Average	scfm	9.28
Well Vapor Flow- Minimum	scfm	6.17

- The groundwater pump inlet was set at 48.5 ft BTOC in well MW-2R. The average groundwater pump rate during the course of Event #1 was 0.63 gpm, and the maximum groundwater pump rate was 0.74 gpm.
- The average groundwater depression, based on the positioning of the groundwater pump in well MW-2R, was 11.0 ft below the hydro-equivalent static level.
- LNAPL with a measured thickness of 0.57 ft was recorded in well MW-2R prior to the start of Event #1, and no measureable LNAPL was recorded at the conclusion of the Event #1.

The total LNAPL removed, including liquid and vapor, during the 8.0 hour Event #1, Well MW-2R, was 2.2 gals.

ADDITIONAL INFORMATION

- Well MW-2R produced a mostly steady amount of liquid volume during the course of Event #1. However, no quantifiable liquid LNAPL was recovered from well MW-2R.
- All LNAPL volume recovered, 2.2 gals, was burned as IC engine fuel.

- The TPH vapor concentrations were on a steadily decreasing trend during Event #1. The initial TPH reading was 19,640 ppmv, the average reading was 13,855 ppmv, and the lowest reading, 10,960 ppmv, was recorded at event hour 4.5. The final reading, at event hour 7.0 was 11,410 ppmv.

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, Well MW-2R.

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		1
WELL NO.		**MW-2R**
Total Event Hours		8.0
TD	ft BGS	50.0
Well Screen	ft BGS	25.0 – 50.0
Well Size	in	2.0
Well Data		
DTGW - Static - Start Event	ft BTOC	32.81
DTLNAPL - Static - Start Event	ft BTOC	32.24
LNAPL	ft BTOC	0.57
Hydro-Equivalent- Beginning	ft BTOC	32.39
DTGW - End Event	ft BTOC	43.94
DTLNAPL - End Event	ft BTOC	-
LNAPL	ft BTOC	-
Hydro-Equivalent- Ending	ft BTOC	43.94
Extraction Data		
Maximum Extraction Well Vacuum	"H_2O	150.00
Average Extraction Well Vacuum	"H_2O	146.47
Minimum Extraction Well Vacuum	"H_2O	130.00
Maximum Extraction Well Vapor Flow	scfm	10.71
Average Extraction Well Vapor Flow	scfm	9.28
Minimum Extraction Well Vapor Flow	scfm	6.17
Maximum GW / LNAPL Pump Rate	gpm	0.74
Average GW / LNAPL Pump Rate	gpm	0.63
Influent Data		
Maximum TPH	ppmv	19,640
Average TPH	ppmv	13,855
Maximum TPH	ppmv	10,960
Initial TPH	ppmv	19,640
Final TPH	ppmv	11,410
Average CO_2	%	3.32
Average CO	%	0.05
Average O_2	%	15.0
Average H_2S	ppm	10

Summary Recovery Data
Table #2

Event		1
WELL NO.		**MW-2R**
Recovery Data- Current Event		
Total Liquid Volume Recovered	gals	302
Total Liquid LNAPL Recovered	gals	-
Total Liquid LNAPL Recovered / Total Liquid	%	-
Total Liquid LNAPL Recovered / Total LNAPL	%	-
Total Vapor LNAPL Recovered	gals	2.2
Total Vapor LNAPL Recovered / Total LNAPL	%	100.00
Total Vapor and Liquid LNAPL Recovered	gals	2.2
Average LNAPL Recovery	gals/hr	0.28
Total LNAPL Recovered	lbs	16
Total Volume of Well Vapors	cu. ft	4,454
Recovery Data- Cumulative		
Total Liquid Volume Recovered	gals	302
Total Liquid LNAPL Recovered	gals	-
Total Vapor LNAPL Recovered	gals	2.2
Total Vapor and Liquid LNAPL Recovered	gals	2.2
Average LNAPL Recovery	gals/hr	0.28
Total LNAPL Recovered	lbs	16
Total Volume of Well Vapors	cu. ft	4,454

AcuVac Remediation

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

Location: C-27 San Juan County, NM **Project Managers:** Faucher / George

TD 53.5

Well # MW-2R

		Date	7/26/17					
		Time	0745	0815	0845	0915	0945	1015
		Hr Meter	8044.0	8044.5	8045.0	8045.5	8046.0	8046.5
ENGINE / BLOWER	Engine Speed	RPM	1900	1900	1800	1800	1800	1800
	Oil Pressure	psi	50	50	50	50	50	50
	Water Temp	°F	130	130	140	140	140	140
	Alternator	Volts	14	14	14	14	14	14
	Intake Vacuum	"Hg	18	18	18	18	18	18
	Gas Flow Fuel/Propane	cfh	120	120	120	120	120	120
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	130	130	130	150	150	150
	Extraction Well Flow	scfm	6.17	6.17	6.17	8.12	8.12	8.12
	Influent Vapor Temp.	°F	70	70	70	70	70	70
	Air Temp	°F	-	-	-	-	-	-
	Barometric Pressure	"Hg	-	-	-	-	-	-
VAPOR / INFLUENT	TPH	ppmv	-	19,640	-	-	-	13,410
	CO_2	%	-	3.96	-	-	-	3.54
	CO	%	-	.13	-	-	-	.04
	O_2	%	-	13.8	-	-	-	14.9
	H_2S	ppm	-	6.0	-	-	-	11.4

NOTES

ARRIVED ON SITE AT 0720 HRS. HELD TAILGATE SAFETY MEETING. GAUGED WELL DTNAPL 37.24, DTGW 37.81, .57 FT LNAPL. POSITIONED IN WELL PUMP AT APPROXIMATELY 48.5 FT BTOC. INITIAL WELL VAC SET AT 130 "H_2O RESULTING IN WVF OF 6.17 SCFM. AT 0915 HRS WELL VAC ↑ 150 "H_2O RESULTING IN WVF OF 8.12 SCFM. AT 0945 ↑ PUMP RATE TO MAINTAIN CONSTANT DRAWDOWN. TPH VAPOR CONCENTRATIONS ↓ TO 13,410 PPMV AT 1015 HRS.

RECOVERY	TOTALIZER	GAL	8112.97	8134.93	8153.59	8174.58	8191.72	8213.95
	Pump Rate	gals/min	.73	.62	.70	.57	.74	.57
	Total Volume	gals	-	21.96	40.62	61.61	78.75	100.98
	NAPL	% Vol	-	SHEEN	SHEEN	SHEEN	SHEEN	SHEEN
	NAPL	Gals	-	-	-	-	-	-
EW	Data Logger Head 12.29	ft	4.18	.44	.67	2.41	1.02	.16
	GW Depression	ft	-8.11	-11.85	-11.67	-9.88	11.27	12.13
	Extraction Well	DTNAPL	37.24					
	Extraction Well	DTGW	37.81					

.57

AcuVac Remediation

OPERATING DATA – EVENT # 1 | PAGE # 2 | ACUVAC MDP SYSTEM

Location: 16-27 San Juan County, NM | Project Managers: Faucher / George

Well # MW-27

		Date	7/26/17					
		Time	1045	1115	1145	1215	1245	1315
		Hr Meter	8047.0	8047.5	8048.0	8048.5	8049.0	849.5
ENGINE / BLOWER	Engine Speed	RPM	1800	1800	1800	1800	1800	1800
	Oil Pressure	psi	50	50	50	50	50	50
	Water Temp	°F	150	150	150	150	150	150
	Alternator	Volts	14	14	14	14	14	14
	Intake Vacuum	"Hg	18	18	18	18	18	18
	Gas Flow Fuel/Propane	cfh	120	120	120	120	120	120
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	150
	Extraction Well Flow	scfm	9.74	9.74	9.74	10.71	10.71	10.71
	Influent Vapor Temp.	°F	70	70	70	70	70	70
	Air Temp	°F	–	–	–	–	–	–
	Barometric Pressure	"Hg	–	–	–	–	–	–
VAPOR / INFLUENT	TPH	ppmv	–	–	–	10,960	–	–
	CO_2	%	–	–	–	2.84	–	–
	CO	%	–	–	–	.01	–	–
	O_2	%	–	–	–	15.2	–	–
	H_2S	ppm	–	–	–	11.7	–	–

NOTES

AT 1045 HRS WVF ↑ TO 9.74 SCFM. AT 1215 HRS WVF ↑ 10.71 SCFM. VAC REMAINED STEADY. TPH CONCENTRATIONS CONTINUE ON DECREASING TREND. GW DEPRESSION MOSTLY STEADY DURING PERIOD.

RECOVERY	TOTALIZER	GALS:	8231.03	8250.66	8270.82	8286.29	8303.21	8323.57
	Pump Rate	gals/min	.65	.67	.52	.56	.68	.59
	Total Volume	gals	118.05	137.69	157.85	173.32	190.24	210.60
	NAPL	% Vol	SHEEN	SHEEN	SHEEN	SHEEN	SHEEN	SHEEN
	NAPL	Gals	–	–	–	–	–	–
EW	Data Logger Head 12.29	ft	2.01	1.15	.16	1.42	1.10	.17
	GW Depression	ft	-10.28	-11.14	-12.13	-10.87	-11.19	-12.12
	Extraction Well	DTNAPL						
	Extraction Well	DTGW						

AcuVac Remediation

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

Location: K-27 San Juan County, NM | Project Managers: Faucher / George

Well # MW-2R

		Date	7/25/17					
		Time	1345	1415	1445	1515	1545	
		Hr Meter	8047.0	8047.5	8048.0	8048.5	8049.0	
ENGINE / BLOWER	Engine Speed	RPM	1800	1800	1800	1800	1800	
	Oil Pressure	psi	50	50	50	50	50	
	Water Temp	°F	160	160	160	160	160	
	Alternator	Volts	14	14	14	14	14	
	Intake Vacuum	"Hg	18	18	18	18	18	
	Gas Flow Fuel/Propane	cfh	120	120	120	120	120	
ATMOSPHERE VACUUM / AIR	Extraction Well Vac.	"H_2O	150	150	150	150	150	
	Extraction Well Flow	scfm	10.71	10.71	10.71	10.71	10.71	
	Influent Vapor Temp.	°F	70	70	70	70	70	
	Air Temp	°F	–	–	–	–	–	
	Barometric Pressure	"Hg	–	–	–	–	–	
VAPOR / INFLUENT	TPH	ppmv	–	11,410	–	–	–	
	CO_2	%	–	2.92	–	–	–	
	CO	%	–	.02	–	–	–	
	O_2	%	–	15.9	–	–	–	
	H_2S	ppm	–	10.1	–	–	–	

NOTES

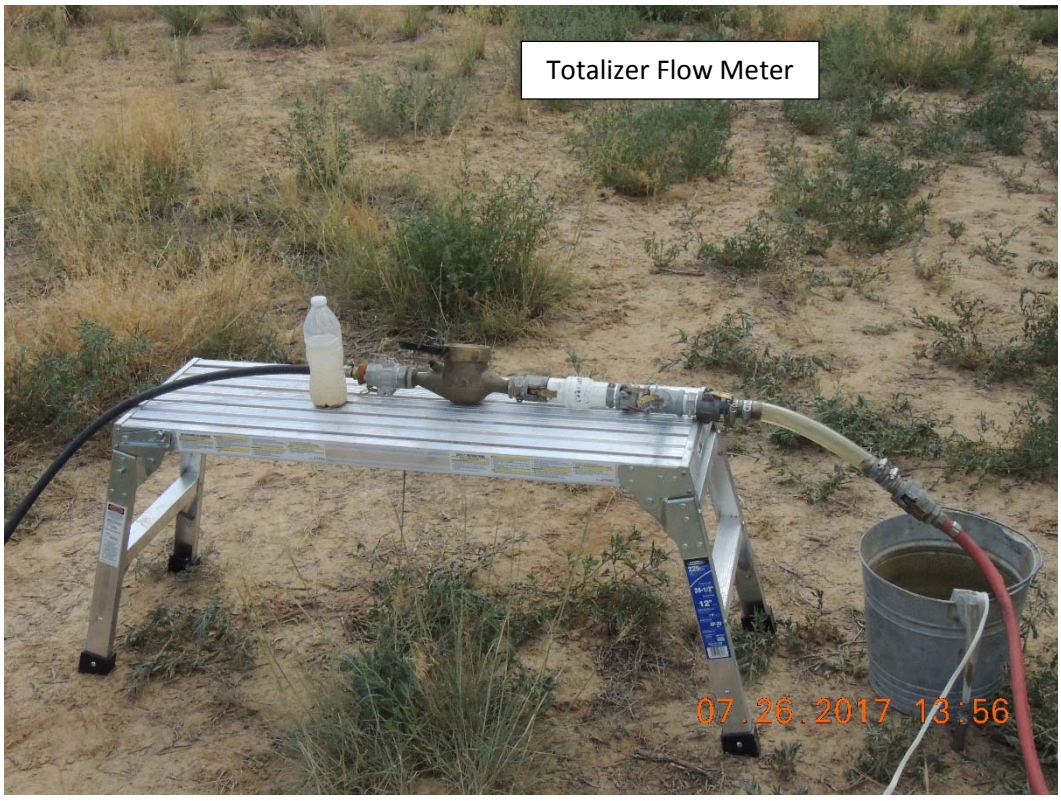
WELL VAC & INF STEADY DURING PERIOD. TPH VAPOR CONCENTRATIONS ON A DECREASING TREND FROM PREVIOUS PERIOD. GW PUMP RATE MOSTLY STEADY DURING PERIOD, ALTHOUGH NO MEASURABLE LNAPL RECOVERED. AT 1545 EVENT CONCLUDED. WELL GAUGED NO MEASURABLE LNAPL PRESENT.

RECOVERY	TOTALIZER	GALS	8341.35	8358.93	8373.28	8392.60	8414.52	
	Pump Rate	gals/min	.59	.48	.64	.73	–	
	Total Volume	gals	228.38	245.96	260.31	279.63	301.55	
	NAPL	% Vol	SHEEN	SHEEN	SHEEN	SHEEN	SHEEN	
	NAPL	Gals	–	–	–	–	–	
EW	Data Logger Head 12.29	ft	.48	.18	.19	.19	–	
	GW Depression	ft	-11.81	-12.11	-12.10	-12.10	–	
	Extraction Well	DTNAPL					–	
	Extraction Well	DTGW					43.94	

9

K-27
SAN JUAN COUNTY, NM

K-27
SAN JUAN COUNTY, NM



K-27
SAN JUAN COUNTY, NM

APPENDIX F

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: 400-139063-1
Client Project/Site: ElPaso CGP Company, LLC - K27 LD072

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

Attn: Ms. Sarah Gardner

Madonna Myers

Authorized for release by:
6/22/2017 12:11:00 PM
Madonna Myers, Project Manager II
(615)796-1870
madonna.myers@testamericainc.com

Designee for

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

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

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)

Case Narrative

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Job ID: 400-139063-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-139063-1

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
Method 8021B: The continuing calibration verification (CCV) associated with batch 400-356920 recovered above the upper control limit for Xylenes, Total. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or 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 - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-1 — Lab Sample ID: 400-139063-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	52		1.0		ug/L	1		8021B	Total/NA
Ethylbenzene	5.6		1.0		ug/L	1		8021B	Total/NA
Toluene	18		5.0		ug/L	1		8021B	Total/NA
Xylenes, Total	38		5.0		ug/L	1		8021B	Total/NA

Client Sample ID: MW-3R — Lab Sample ID: 400-139063-3

No Detections.

Client Sample ID: MW-4 — Lab Sample ID: 400-139063-4

No Detections.

Client Sample ID: MW-5 — Lab Sample ID: 400-139063-5

No Detections.

Client Sample ID: MW-6 — Lab Sample ID: 400-139063-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	1.4		1.0		ug/L	1		8021B	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 400-139063-7

No Detections.

Client Sample ID: MW-8 — Lab Sample ID: 400-139063-8

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2.0		1.0		ug/L	1		8021B	Total/NA
Xylenes, Total	15		5.0		ug/L	1		8021B	Total/NA

Client Sample ID: TRIPBLANK — Lab Sample ID: 400-139063-9

No Detections.

This Detection Summary does not include radiochemical test results.

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-139063-1	MW-1	Water	06/07/17 14:10	06/09/17 11:11
400-139063-3	MW-3R	Water	06/07/17 14:00	06/09/17 11:11
400-139063-4	MW-4	Water	06/07/17 14:05	06/09/17 11:11
400-139063-5	MW-5	Water	06/07/17 13:50	06/09/17 11:11
400-139063-6	MW-6	Water	06/07/17 14:25	06/09/17 11:11
400-139063-7	MW-7	Water	06/07/17 14:20	06/09/17 11:11
400-139063-8	MW-8	Water	06/07/17 14:30	06/09/17 11:11
400-139063-9	TRIPBLANK	Water	06/07/17 13:35	06/09/17 11:11

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-1
Date Collected: 06/07/17 14:10
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	52		1.0		ug/L			06/14/17 21:27	1
Ethylbenzene	5.6		1.0		ug/L			06/14/17 21:27	1
Toluene	18		5.0		ug/L			06/14/17 21:27	1
Xylenes, Total	38		5.0		ug/L			06/14/17 21:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*106*		*78 - 124*		*06/14/17 21:27*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-3R
Date Collected: 06/07/17 14:00
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-3
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			06/14/17 21:58	1
Ethylbenzene	<1.0		1.0		ug/L			06/14/17 21:58	1
Toluene	<5.0		5.0		ug/L			06/14/17 21:58	1
Xylenes, Total	<5.0		5.0		ug/L			06/14/17 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*109*		*78 - 124*		*06/14/17 21:58*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-4
Date Collected: 06/07/17 14:05
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-4
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			06/14/17 23:30	1
Ethylbenzene	<1.0		1.0		ug/L			06/14/17 23:30	1
Toluene	<5.0		5.0		ug/L			06/14/17 23:30	1
Xylenes, Total	<5.0		5.0		ug/L			06/14/17 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*109*		*78 - 124*		*06/14/17 23:30*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-5
Date Collected: 06/07/17 13:50
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-5
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			06/15/17 00:00	1
Ethylbenzene	<1.0		1.0		ug/L			06/15/17 00:00	1
Toluene	<5.0		5.0		ug/L			06/15/17 00:00	1
Xylenes, Total	<5.0		5.0		ug/L			06/15/17 00:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*102*		*78 - 124*		*06/15/17 00:00*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-6
Date Collected: 06/07/17 14:25
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-6
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.4**		1.0		ug/L			06/15/17 18:30	1
Ethylbenzene	<1.0		1.0		ug/L			06/15/17 18:30	1
Toluene	<5.0		5.0		ug/L			06/15/17 18:30	1
Xylenes, Total	<5.0		5.0		ug/L			06/15/17 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*104*		*78 - 124*		*06/15/17 18:30*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-7
Date Collected: 06/07/17 14:20
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-7
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			06/15/17 01:01	1
Ethylbenzene	<1.0		1.0		ug/L			06/15/17 01:01	1
Toluene	<5.0		5.0		ug/L			06/15/17 01:01	1
Xylenes, Total	<5.0		5.0		ug/L			06/15/17 01:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*110*		*78 - 124*		*06/15/17 01:01*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-8
Date Collected: 06/07/17 14:30
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-8
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			06/20/17 00:30	1
Ethylbenzene	**2.0**		1.0		ug/L			06/20/17 00:30	1
Toluene	<5.0		5.0		ug/L			06/20/17 00:30	1
Xylenes, Total	**15**		5.0		ug/L			06/20/17 00:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*110*		*78 - 124*		*06/20/17 00:30*	*1*

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: TRIPBLANK
Date Collected: 06/07/17 13:35
Date Received: 06/09/17 11:11

Lab Sample ID: 400-139063-9
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			06/14/17 18:24	1
Ethylbenzene	<1.0		1.0		ug/L			06/14/17 18:24	1
Toluene	<5.0		5.0		ug/L			06/14/17 18:24	1
Xylenes, Total	<5.0		5.0		ug/L			06/14/17 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*109*		*78 - 124*		*06/14/17 18:24*	*1*

GC VOA

Analysis Batch: 356920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-139063-1	MW-1	Total/NA	Water	8021B	
400-139063-3	MW-3R	Total/NA	Water	8021B	
400-139063-4	MW-4	Total/NA	Water	8021B	
400-139063-5	MW-5	Total/NA	Water	8021B	
400-139063-7	MW-7	Total/NA	Water	8021B	
400-139063-9	TRIPBLANK	Total/NA	Water	8021B	
MB 400-356920/2	Method Blank	Total/NA	Water	8021B	
LCS 400-356920/1001	Lab Control Sample	Total/NA	Water	8021B	
400-139062-B-5 MS	Matrix Spike	Total/NA	Water	8021B	
400-139062-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Analysis Batch: 357175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-139063-6	MW-6	Total/NA	Water	8021B	
MB 400-357175/2	Method Blank	Total/NA	Water	8021B	
LCS 400-357175/1001	Lab Control Sample	Total/NA	Water	8021B	
400-139063-6 MS	MW-6	Total/NA	Water	8021B	
400-139063-6 MSD	MW-6	Total/NA	Water	8021B	

Analysis Batch: 357549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-139063-8	MW-8	Total/NA	Water	8021B	
MB 400-357549/4	Method Blank	Total/NA	Water	8021B	
LCS 400-357549/1003	Lab Control Sample	Total/NA	Water	8021B	
400-139224-A-3 MS	Matrix Spike	Total/NA	Water	8021B	
400-139224-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-356920/2
Matrix: Water
Analysis Batch: 356920

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			06/14/17 10:25	1
Ethylbenzene	<1.0		1.0		ug/L			06/14/17 10:25	1
Toluene	<5.0		5.0		ug/L			06/14/17 10:25	1
Xylenes, Total	<5.0		5.0		ug/L			06/14/17 10:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*107*		*78 - 124*		*06/14/17 10:25*	*1*

Lab Sample ID: LCS 400-356920/1001
Matrix: Water
Analysis Batch: 356920

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	55.6		ug/L		111	85 - 115		
Ethylbenzene			50.0	55.2		ug/L		110	85 - 115		
Toluene			50.0	54.2		ug/L		108	85 - 115		
Xylenes, Total			150	166		ug/L		111	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*108*		*78 - 124*

Lab Sample ID: 400-139062-B-5 MS
Matrix: Water
Analysis Batch: 356920

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	12		50.0	71.2		ug/L		118	44 - 150		
Ethylbenzene	<1.0		50.0	61.5		ug/L		123	70 - 142		
Toluene	<5.0		50.0	60.1		ug/L		118	69 - 136		
Xylenes, Total	<5.0		150	189		ug/L		124	68 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*106*		*78 - 124*

Lab Sample ID: 400-139062-B-5 MSD
Matrix: Water
Analysis Batch: 356920

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	12		50.0	71.2		ug/L		118	44 - 150	0	16
Ethylbenzene	<1.0		50.0	62.0		ug/L		124	70 - 142	1	16
Toluene	<5.0		50.0	60.6		ug/L		119	69 - 136	1	16
Xylenes, Total	<5.0		150	191		ug/L		124	68 - 142	1	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*106*		*78 - 124*

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 400-357175/2
Matrix: Water
Analysis Batch: 357175

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			06/15/17 17:50	1
Ethylbenzene	<1.0		1.0		ug/L			06/15/17 17:50	1
Toluene	<5.0		5.0		ug/L			06/15/17 17:50	1
Xylenes, Total	<5.0		5.0		ug/L			06/15/17 17:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*99*		*78 - 124*		*06/15/17 17:50*	*1*

Lab Sample ID: LCS 400-357175/1001
Matrix: Water
Analysis Batch: 357175

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	45.9		ug/L		92	85 - 115		
Ethylbenzene			50.0	45.1		ug/L		90	85 - 115		
Toluene			50.0	46.0		ug/L		92	85 - 115		
Xylenes, Total			150	132		ug/L		88	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*99*		*78 - 124*

Lab Sample ID: 400-139063-6 MS
Matrix: Water
Analysis Batch: 357175

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	1.4		50.0	56.3		ug/L		110	44 - 150		
Ethylbenzene	<1.0		50.0	56.2		ug/L		112	70 - 142		
Toluene	<5.0		50.0	55.8		ug/L		112	69 - 136		
Xylenes, Total	<5.0		150	170		ug/L		111	68 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*101*		*78 - 124*

Lab Sample ID: 400-139063-6 MSD
Matrix: Water
Analysis Batch: 357175

Client Sample ID: MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.4		50.0	59.4		ug/L		116	44 - 150	5	16
Ethylbenzene	<1.0		50.0	58.9		ug/L		118	70 - 142	5	16
Toluene	<5.0		50.0	58.5		ug/L		117	69 - 136	5	16
Xylenes, Total	<5.0		150	177		ug/L		116	68 - 142	4	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*101*		*78 - 124*

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 400-357549/4
Matrix: Water
Analysis Batch: 357549

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			06/19/17 13:57	1
Ethylbenzene	<1.0		1.0		ug/L			06/19/17 13:57	1
Toluene	<5.0		5.0		ug/L			06/19/17 13:57	1
Xylenes, Total	<5.0		5.0		ug/L			06/19/17 13:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*106*		*78 - 124*		*06/19/17 13:57*	*1*

Lab Sample ID: LCS 400-357549/1003
Matrix: Water
Analysis Batch: 357549

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			20.0	17.8		ug/L		89	85 - 115		
Ethylbenzene			20.0	18.3		ug/L		92	85 - 115		
Toluene			20.0	18.0		ug/L		90	85 - 115		
Xylenes, Total			60.0	56.2		ug/L		94	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*104*		*78 - 124*

Lab Sample ID: 400-139224-A-3 MS
Matrix: Water
Analysis Batch: 357549

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	2.2		50.0	62.4		ug/L		120	44 - 150		
Ethylbenzene	<1.0		50.0	61.9		ug/L		124	70 - 142		
Toluene	<5.0		50.0	60.4		ug/L		121	69 - 136		
Xylenes, Total	<5.0		150	189		ug/L		126	68 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*108*		*78 - 124*

Lab Sample ID: 400-139224-A-3 MSD
Matrix: Water
Analysis Batch: 357549

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	2.2		50.0	59.9		ug/L		116	44 - 150	4	16
Ethylbenzene	<1.0		50.0	59.6		ug/L		119	70 - 142	4	16
Toluene	<5.0		50.0	58.1		ug/L		116	69 - 136	4	16
Xylenes, Total	<5.0		150	182		ug/L		122	68 - 142	4	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*108*		*78 - 124*

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-1

Lab Sample ID: 400-139063-1

Date Collected: 06/07/17 14:10

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		1	5 mL	5 mL	356920	06/14/17 21:27	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Client Sample ID: MW-3R

Lab Sample ID: 400-139063-3

Date Collected: 06/07/17 14:00

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	356920	06/14/17 21:58	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Client Sample ID: MW-4

Lab Sample ID: 400-139063-4

Date Collected: 06/07/17 14:05

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	356920	06/14/17 23:30	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Client Sample ID: MW-5

Lab Sample ID: 400-139063-5

Date Collected: 06/07/17 13:50

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	356920	06/15/17 00:00	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Client Sample ID: MW-6

Lab Sample ID: 400-139063-6

Date Collected: 06/07/17 14:25

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	357175	06/15/17 18:30	GRK	TAL PEN
	Instrument ID: CH_RITA									

Client Sample ID: MW-7

Lab Sample ID: 400-139063-7

Date Collected: 06/07/17 14:20

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	356920	06/15/17 01:01	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

Client Sample ID: MW-8

Lab Sample ID: 400-139063-8

Date Collected: 06/07/17 14:30

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	357549	06/20/17 00:30	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Client Sample ID: TRIPBLANK

Lab Sample ID: 400-139063-9

Date Collected: 06/07/17 13:35

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	356920	06/14/17 18:24	CMW	TAL PEN
	Instrument ID: CH_PAULA									

Laboratory References:

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

Accreditation/Certification Summary

Client: Stantec Consulting Services Inc
Project/Site: ElPaso CGP Company, LLC - K27 LD072

TestAmerica Job ID: 400-139063-1

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	09-01-17
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-18
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 - K27 LD072

TestAmerica Job ID: 400-139063-1

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: 400-65864-26939.1
Client Contact: Ms. Sarah Gardner	Phone: 3032912239	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:	Analysis 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: K27 LD072	SSOW#:	
Site: K27 LD072		

400-139063 COC

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:

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	1410	G	W	N	N	2	2	
MW-2R	June 7, 2017	1400	G	W	N	N	2	2	
MW-3R	June 7, 2017	1400	G	W	N	N	2	2	
MW-4	June 7, 2017	1405	G	W	N	N	2	2	
MW-5	June 7, 2017	1350	G	W	N	N	2	2	
MW-6	June 7, 2017	1425	G	W	N	N	2	2	
MW-7	June 7, 2017	1420	G	W	N	N	2	2	
MW-8	June 7, 2017	1430	G	W	N	N	2	2	
Trip Blank	June 7, 2017	1335		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
Sarah Gardner	6/8/2017 845	Stantec			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 6-9-17 1111	Company

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

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 400-139063-1

Login Number: 139063

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: 400-146063-1
Client Project/Site: El Paso CGP Company - K27 LD072

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

Attn: Ms. Sarah Gardner

Carol M Webb

Authorized for release by:
11/27/2017 10:19:01 AM

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

Table of Contents

Definitions/Glossary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.

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)

Case Narrative

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Job ID: 400-146063-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-146063-1

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.

Receipt Exceptions

The following sample was listed on the Chain of Custody (COC); however, no sample was received: MW-2R (400-146063-3).

The client informed us that the sample was left on the COC by mistake.
The COC has been ameded to show this.

GC/MS VOA
Method 8260C: Surrogate recovery for the following sample was outside the upper control limit: MW-7 (400-146063-8). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: The matrix spike (MS) recoveries for analytical batch 400-377093 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or 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 - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: TRIP BLANK — Lab Sample ID: 400-146063-1

No Detections.

Client Sample ID: MW-1 — Lab Sample ID: 400-146063-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Benzene	190		2.0		ug/L	2		8260C	Total/NA
Toluene	98		2.0		ug/L	2		8260C	Total/NA
Ethylbenzene	8.9		2.0		ug/L	2		8260C	Total/NA
Xylenes, Total	87		20		ug/L	2		8260C	Total/NA

Client Sample ID: MW-3R — Lab Sample ID: 400-146063-4

No Detections.

Client Sample ID: MW-4 — Lab Sample ID: 400-146063-5

No Detections.

Client Sample ID: MW-5 — Lab Sample ID: 400-146063-6

No Detections.

Client Sample ID: MW-6 — Lab Sample ID: 400-146063-7

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1.7		1.0		ug/L	1		8260C	Total/NA
Xylenes, Total	170		10		ug/L	1		8260C	Total/NA

Client Sample ID: MW-7 — Lab Sample ID: 400-146063-8

No Detections.

Client Sample ID: MW-8 — Lab Sample ID: 400-146063-9

No Detections.

Client Sample ID: MW-10 — Lab Sample ID: 400-146063-10

No Detections.

This Detection Summary does not include radiochemical test results.

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-146063-1	TRIP BLANK	Water	11/14/17 09:15	11/15/17 08:12
400-146063-2	MW-1	Water	11/14/17 10:40	11/15/17 08:12
400-146063-4	MW-3R	Water	11/14/17 09:48	11/15/17 08:12
400-146063-5	MW-4	Water	11/14/17 09:38	11/15/17 08:12
400-146063-6	MW-5	Water	11/14/17 09:54	11/15/17 08:12
400-146063-7	MW-6	Water	11/14/17 10:13	11/15/17 08:12
400-146063-8	MW-7	Water	11/14/17 10:01	11/15/17 08:12
400-146063-9	MW-8	Water	11/14/17 10:07	11/15/17 08:12
400-146063-10	MW-10	Water	11/14/17 10:26	11/15/17 08:12

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: TRIP BLANK
Date Collected: 11/14/17 09:15
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-1
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			11/20/17 13:49	1
Toluene	<1.0		1.0		ug/L			11/20/17 13:49	1
Ethylbenzene	<1.0		1.0		ug/L			11/20/17 13:49	1
Xylenes, Total	<10		10		ug/L			11/20/17 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*100*		*81 - 121*		*11/20/17 13:49*	*1*
4-Bromofluorobenzene	*108*		*78 - 118*		*11/20/17 13:49*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*11/20/17 13:49*	*1*

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-1
Date Collected: 11/14/17 10:40
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-2
Matrix: Water

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	190		2.0		ug/L			11/20/17 19:42	2
Toluene	98		2.0		ug/L			11/20/17 19:42	2
Ethylbenzene	8.9		2.0		ug/L			11/20/17 19:42	2
Xylenes, Total	87		20		ug/L			11/20/17 19:42	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*105*		*81 - 121*		*11/20/17 19:42*	*2*
4-Bromofluorobenzene	*111*		*78 - 118*		*11/20/17 19:42*	*2*
Toluene-d8 (Surr)	*108*		*80 - 120*		*11/20/17 19:42*	*2*

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-3R
Date Collected: 11/14/17 09:48
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-4
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 18:58	1
Toluene	<1.0		1.0		ug/L			11/20/17 18:58	1
Ethylbenzene	<1.0		1.0		ug/L			11/20/17 18:58	1
Xylenes, Total	<10		10		ug/L			11/20/17 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*109*		*81 - 121*		*11/20/17 18:58*	*1*
4-Bromofluorobenzene	*110*		*78 - 118*		*11/20/17 18:58*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/20/17 18:58*	*1*

Client Sample ID: MW-4
Date Collected: 11/14/17 09:38
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-5
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 19:20	1
Toluene	<1.0		1.0		ug/L			11/20/17 19:20	1
Ethylbenzene	<1.0		1.0		ug/L			11/20/17 19:20	1
Xylenes, Total	<10		10		ug/L			11/20/17 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*102*		*81 - 121*		*11/20/17 19:20*	*1*
4-Bromofluorobenzene	*113*		*78 - 118*		*11/20/17 19:20*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*11/20/17 19:20*	*1*

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-5
Date Collected: 11/14/17 09:54
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-6
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 09:34	1
Toluene	<1.0		1.0		ug/L			11/21/17 09:34	1
Ethylbenzene	<1.0		1.0		ug/L			11/21/17 09:34	1
Xylenes, Total	<10		10		ug/L			11/21/17 09:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*106*		*81 - 121*		*11/21/17 09:34*	*1*
4-Bromofluorobenzene	*118*		*78 - 118*		*11/21/17 09:34*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*11/21/17 09:34*	*1*

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-6
Date Collected: 11/14/17 10:13
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-7
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 13:16	1
Toluene	<1.0		1.0		ug/L			11/21/17 13:16	1
Ethylbenzene	**1.7**		1.0		ug/L			11/21/17 13:16	1
Xylenes, Total	**170**		10		ug/L			11/21/17 13:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*106*		*81 - 121*		*11/21/17 13:16*	*1*
4-Bromofluorobenzene	*116*		*78 - 118*		*11/21/17 13:16*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*11/21/17 13:16*	*1*

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-7
Date Collected: 11/14/17 10:01
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-8
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 13:38	1
Toluene	<1.0		1.0		ug/L			11/21/17 13:38	1
Ethylbenzene	<1.0		1.0		ug/L			11/21/17 13:38	1
Xylenes, Total	<10		10		ug/L			11/21/17 13:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*102*		*81 - 121*		*11/21/17 13:38*	*1*
4-Bromofluorobenzene	*119*	*X*	*78 - 118*		*11/21/17 13:38*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*11/21/17 13:38*	*1*

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-8
Date Collected: 11/14/17 10:07
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-9
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 14:00	1
Toluene	<1.0		1.0		ug/L			11/21/17 14:00	1
Ethylbenzene	<1.0		1.0		ug/L			11/21/17 14:00	1
Xylenes, Total	<10		10		ug/L			11/21/17 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*101*		*81 - 121*		*11/21/17 14:00*	*1*
4-Bromofluorobenzene	*117*		*78 - 118*		*11/21/17 14:00*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*11/21/17 14:00*	*1*

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-10
Date Collected: 11/14/17 10:26
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-10
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			11/24/17 18:07	1
Toluene	<1.0		1.0		ug/L			11/24/17 18:07	1
Ethylbenzene	<1.0		1.0		ug/L			11/24/17 18:07	1
Xylenes, Total	<10		10		ug/L			11/24/17 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*100*		*81 - 121*		*11/24/17 18:07*	*1*
4-Bromofluorobenzene	*98*		*78 - 118*		*11/24/17 18:07*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*11/24/17 18:07*	*1*

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

GC/MS VOA

Analysis Batch: 376632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-146063-1	TRIP BLANK	Total/NA	Water	8260C	
400-146063-2	MW-1	Total/NA	Water	8260C	
400-146063-4	MW-3R	Total/NA	Water	8260C	
400-146063-5	MW-4	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
400-146063-6	MW-5	Total/NA	Water	8260C	
400-146063-7	MW-6	Total/NA	Water	8260C	
400-146063-8	MW-7	Total/NA	Water	8260C	
400-146063-9	MW-8	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	
400-146063-6 MS	MW-5	Total/NA	Water	8260C	
400-146063-6 MSD	MW-5	Total/NA	Water	8260C	

Analysis Batch: 377093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-146063-10	MW-10	Total/NA	Water	8260C	
MB 400-377093/4	Method Blank	Total/NA	Water	8260C	
LCS 400-377093/1020	Lab Control Sample	Total/NA	Water	8260C	
400-146238-A-1 MS	Matrix Spike	Total/NA	Water	8260C	
400-146238-A-1 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: 400-146063-6 MS
Matrix: Water
Analysis Batch: 376725

Client Sample ID: MW-5
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: 400-146063-6 MS
Matrix: Water
Analysis Batch: 376725

Client Sample ID: MW-5
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: 400-146063-6 MSD
Matrix: Water
Analysis Batch: 376725

Client Sample ID: MW-5
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 Sample ID: MB 400-377093/4
Matrix: Water
Analysis Batch: 377093

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			11/24/17 10:45	1
Toluene	<1.0		1.0		ug/L			11/24/17 10:45	1
Ethylbenzene	<1.0		1.0		ug/L			11/24/17 10:45	1
Xylenes, Total	<10		10		ug/L			11/24/17 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*101*		*81 - 121*		*11/24/17 10:45*	*1*
4-Bromofluorobenzene	*98*		*78 - 118*		*11/24/17 10:45*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*11/24/17 10:45*	*1*

Lab Sample ID: LCS 400-377093/1020
Matrix: Water
Analysis Batch: 377093

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	46.6		ug/L		93	70 - 130		
Toluene			50.0	42.9		ug/L		86	70 - 130		
Ethylbenzene			50.0	44.5		ug/L		89	70 - 130		
Xylenes, Total			100	89.2		ug/L		89	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*104*		*81 - 121*
4-Bromofluorobenzene	*99*		*78 - 118*

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

Lab Sample ID: LCS 400-377093/1020
Matrix: Water
Analysis Batch: 377093

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	93		80 - 120

Lab Sample ID: 400-146238-A-1 MS
Matrix: Water
Analysis Batch: 377093

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	39.1		ug/L		78	56 - 142
Toluene	<1.0	F1	50.0	31.1	F1	ug/L		62	65 - 130
Ethylbenzene	<1.0	F1	50.0	27.2	F1	ug/L		54	58 - 131
Xylenes, Total	<10	F1	100	55.2	F1	ug/L		55	59 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane	105		81 - 121
4-Bromofluorobenzene	99		78 - 118
Toluene-d8 (Surr)	95		80 - 120

Lab Sample ID: 400-146238-A-1 MSD
Matrix: Water
Analysis Batch: 377093

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	44.1		ug/L		88	56 - 142	12	30
Toluene	<1.0	F1	50.0	38.2		ug/L		76	65 - 130	20	30
Ethylbenzene	<1.0	F1	50.0	36.8		ug/L		74	58 - 131	30	30
Xylenes, Total	<10	F1	100	74.1		ug/L		74	59 - 130	29	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane	103		81 - 121
4-Bromofluorobenzene	99		78 - 118
Toluene-d8 (Surr)	97		80 - 120

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: TRIP BLANK
Date Collected: 11/14/17 09:15
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-1
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	376632	11/20/17 13:49	S1K	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-1
Date Collected: 11/14/17 10:40
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-2
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		2	5 mL	5 mL	376632	11/20/17 19:42	S1K	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-3R
Date Collected: 11/14/17 09:48
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-4
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 18:58	S1K	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-4
Date Collected: 11/14/17 09:38
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-5
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 19:20	S1K	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-5
Date Collected: 11/14/17 09:54
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-6
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 09:34	CAR	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-6
Date Collected: 11/14/17 10:13
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-7
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 13:16	CAR	TAL PEN
	Instrument ID: Darwin									

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company - K27 LD072

TestAmerica Job ID: 400-146063-1

Client Sample ID: MW-7

Date Collected: 11/14/17 10:01
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-8

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 13:38	CAR	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-8

Date Collected: 11/14/17 10:07
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-9

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 14:00	CAR	TAL PEN
	Instrument ID: Darwin									

Client Sample ID: MW-10

Date Collected: 11/14/17 10:26
Date Received: 11/15/17 08:12

Lab Sample ID: 400-146063-10

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	377093	11/24/17 18:07	RS	TAL PEN
	Instrument ID: CH_WASP									

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: 400-146063-1
Project/Site: El Paso CGP Company - K27 LD072

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 - K27 LD072

TestAmerica Job ID: 400-146063-1

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

400-146063 COC

Client Information	Sampler: SMS	Lab PM: Webb, Carol M	Carrier Tracking No(s):	COC No: 400-69061-27995.1
Client Contact: Ms. Sarah Gardner	Phone: 515-~~00~~ 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 Std			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	PO #: Purchase Order Requested			
Phone: 303-291-2239(Tel)	~~WO#:~~ W-ERG-STN-05-17-M-JLG-10			
Email: sarah.gardner@mwhglobal.com	Project #: 40005479 K27 LD07			
Project Name: K27 LD072 Nov 2017	SSOW#:			Other:
Site:		8260		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	8260 - BTEX 8021	Special Instructions/Note:
Trip Blank	11/14/17	915	G	W	A 2	
MW-1		1040			A 2	
MW-2R		1034			A 2	
MW-3R		0948			A 2	
MW-4		0938			A 2	
MW-5		0954			A 2	
MW-6		1013			A 2	
~~MW-7~~ MW-7		1001			A 2	
MW-8		1007			A 2	
MW-10	11/14/17	1026			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		11/14/17 1700	Stantec		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 IR8 NH

Ver: 08/04/2016

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11/27/2017

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: SMS	Lab PM: Webb, Carol M	Carrier Tracking No(s):	COC No: 400-69061-27995.1
Client Contact: Ms. Sarah Gardner	Phone: 515-~~00~~ 306 - 1353	E-Mail: carol.webb@testamericainc.com		Page: Page 1 of 1
Company: Stantec Consulting Services Inc				Job #: 203720281
Address: 1560 Broadway Suite 1800	Due Date Requested:	Analysis Requested		Preservation Codes: 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)
City: Denver	TAT Requested (days): 10 day Std			
State, Zip: CO, 80202	PO #: Purchase Order Requested			
Phone: 303-291-2239(Tel)	WO#: ~~MRF~~ W-ER-G-STN-05-17-M-SLG-10			
Email: sarah.gardner@mwhglobal.com	Project #: 40005479 K27 LD07			Other:
Project Name: K27 LD072 Nov 2017	SSOW#:			
Site:				

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	8021H - BTEX 8021		Special Instructions/Note:
Trip Blank	11/14/17	915	G	W	A	2	
MW-1		1040			A	2	
~~MW-2R~~		~~1034~~			A	2	
MW-3R		0948			A	2	
MW-4		0938			A	2	
MW-5		0954			A	2	
MW-6		1013			A	2	
~~MW-7~~ MW-7		1001			A	2	
MW-8		1007			A	2	
MW-10	11/14/17	1026			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
[signature]	11/14/17 1700	Stantec	[signature]	11.15.17 0812	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
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 -0.8 NH

Ver: 08/04/2016

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11-16-17
11/27/2017

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 400-146063-1

Login Number: 146063
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.	False	Refer to Job Narrative for details.
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	