Stantec Consulting Services, Inc.
11153 Aurora Avenue TEL 515 253 0830
Des Moines, IA 50322 FAX 515 253 9592
www.mwhglobal.com

VIA ELECTRONIC SUBMITTAL

April 24, 2017

Mr. Randy Bayliss
New Mexico Oil Conservation Division
811 S. First Street
Artesia, New Mexico 88210

RE: Groundwater Monitoring Report and Request for Site Closure
Hamner #9 Site
NMOCD Case No. 3RP-190-0
METER CODE: 97213
T29N, R9W, Sec20, Unit A
Latitude: 36.714939 Longitude: -107.796150

Dear Mr. Bayliss:

MWH now part of Stantec (Stantec), on behalf of El Paso CGP Company, LLC (EPCGP), requests regulatory closure of the Hamner #9 site (NMOCD Case No. 3RP-190-0). This correspondence documents the analytical results from the final site monitoring event (fourth consecutive quarter with groundwater concentrations below NMOCD standards), completed in accordance with the Remediation Plan approved by the New Mexico Oil Conservation Division (OCD) on November 30, 1995. EPCGP is requesting closure of the Hamner #9 site (the Site) based on the data obtained and the closure criteria outlined in the Remediation Plan.

Site Background

The Site is located on Federal land managed by the Bureau of Land Management (BLM). Currently, the Site is operated by Burlington Resources Oil & Gas Company LP and is active. The Site was assessed in 1994 and 70 cubic yards of impacted soil was excavated from the former pit location to a depth of approximately 12 feet below ground surface. Injection of ORC® (oxygen releasing compound) into the subsurface was performed in 2002 to further remediate impacts in the subsurface. Monitoring wells were installed in 1995 (MW-1), 1999 (MW-2 and MW-3), 2006 (MW-4), and 2015 (MW-5, MW-6, and MW-7). Site groundwater monitoring activities have been conducted periodically since 1995. Soil boring SB-1 was advanced adjacent to monitoring well MW-1 in 2015. Monitoring well MW-2 was plugged and abandoned on October 23, 2015 as it had gone dry. Monitoring well MW-3 was found to be damaged on April 6, 2014, and it was also plugged and abandoned on October 23, 2015. Monitoring well and construction logs are provided in Attachment A.

Free product has not been observed at the Site. Soil sampling was completed in October 2015 during the advancement of soil boring SB-1, and monitoring wells MW-5 through MW-7. The soil sample results are summarized on Table 1. In response to results of total petroleum hydrocarbon (TPH) exceedances in soil samples collected during advancement of SB-1 and MW-7, groundwater samples were collected from monitoring wells MW-1 and MW-7 in April 2016 and analyzed for polynuclear aromatic hydrocarbons (PAHs). PAH results at MW-1 and MW-7 were below the NMWQCC standards, as summarized in Table 2.

Since the second quarter of 2016, groundwater monitoring has been conducted at the Site on a quarterly basis. BTEX concentrations in the site wells have been below the New Mexico Water Quality Control Commission (NMWQCC) standards in the past three calendar quarters. BTEX concentrations have not exceeded NMWQCC standards in groundwater samples collected from the Site since August 2007. The results of quarterly groundwater sampling completed in the second, third, and fourth calendar quarters of 2016 were presented in the Annual Groundwater Sampling Report submitted in March 2017.

2017 Groundwater Monitoring Data

The final of four quarterly groundwater monitoring events was completed on March 28, 2017. Prior to collecting groundwater samples, the Site monitoring wells were gauged with an oil-water interface probe to verify the absence of free product and determine groundwater elevations. Measureable free product was not detected in any of the monitoring wells gauged, as presented on Table 3. As presented on Figure 1, the groundwater elevation data indicate a groundwater flow direction to the southwest, which is consistent with previous gauging data.

Since June 2013, groundwater samples have been collected using HydraSleeve™ no-purge groundwater sampling devices (HydraSleeves). HydraSleeve sampling devices provide no-purge groundwater samples from the undisturbed water column, and have been proven in independent testing to provide groundwater quality data comparable to low-flow groundwater sampling methods. The HydraSleeves were set during the previous sampling events approximately 0.5 foot above termination depth of the monitoring wells, using a suspension tether and stainless steel weights. On the following sample event, field personnel returned to the Site and collected a direct, undisturbed sample from the water column in the screened interval of each well by pulling the HydraSleeve from the well. 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 constituents. The groundwater results are summarized on Table 4, and depicted in Figure 2. The laboratory analytical report is provided in Attachment B. Purged groundwater generated during the March 28, 2017 sampling event was disposed at Basin Disposal, Inc. in Bloomfield, New Mexico. Disposal documentation is provided in Attachment C.

Request for Site Closure

Based on the results of previous assessment, corrective action, and monitoring activities, EPCGP respectfully requests the NMOCD grant site closure for this case.

If you have any comments or questions concerning this correspondence, please contact me or Joseph Wiley with EPCGP at (713) 420-3475.

Sincerely,

Stantec Consulting Services, Inc.

Stephen Varsa, P.G.
Project Manager
Phone: (515) 251-1020
steve.varsa@stantec.com

/rsm:srv:leh

cc: Joseph Wiley, EPCGP
Brandon Powell, NMOCD
Jillian Aragon, BLM

Tables:

Table 1 – Soil Analytical Results
Table 2 – Groundwater PAH Analytical Results
Table 3 – Groundwater Elevation Results
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Figure 1 – Groundwater Elevation Map March 28, 2017
Figure 2 – Groundwater Analytical Results March 28, 2017

Attachments:

Attachment A – Soil Boring Logs and Monitoring Well Construction Reports
Attachment B – Laboratory Analytical Report
Attachment C – Groundwater Disposal Documentation

TABLES

TABLE 1 - SOIL ANALYTICAL RESULTS

HAMNER #9											
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-5 (27-28.7)	10/22/15	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
MW-6 (26.5-28.3)	10/22/15	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL
MW-7 (26-27.6)	10/23/15	BRL	BRL	BRL	BRL	BRL	16	910	54	**980**	BRL
SB-1 (20-21.3)	10/23/15	BRL	BRL	5.8	58	**63.8**	1300	1400	51	**2751**	BRL
SB-1 (26.5-28.1)	10/23/15	BRL	BRL	11	87	**98**	2100	4000	83	**6183**	BRL

Notes:

mg/kg	Milligrams per kilogram
bgs	Below ground surface
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

TABLE 2 - GROUNDWATER PAH ANALYTICAL RESULTS

HAMNER #9						
Location	**Date**	**1-Methylnaphthalene (µg/L)**	**2-Methylnaphthalene (µg/L)**	**Naphthalenes (µg/L)**	**Total Naphthalenes (µg/L)**	**Benzo(a)pyrene (µg/L)**
NMWQCC Standards:		NE	NE	NE	30	0.7
MW-1	04/18/16	2.5	<0.20	<0.20	2.5	<0.20
MW-7	04/18/16	<0.20	<0.20	<0.20	BRL	<0.20

Notes:

µg/L	Micrograms per liter
BRL	Analyte was not detected at the indicated reporting limit in the compounds comprising the Total Naphthalenes.
NE	NMWQCC standard not established
NMWQCC	New Mexico Water Quality Control Commission (NMWQCC)

TABLE 3 - GROUNDWATER ELEVATION RESULTS

HAMNER #9						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	08/25/95	5597.36	29.53	NR		5567.83
MW-1	11/08/96	5597.36	30.30	NR		5567.06
MW-1	02/10/97	5597.36	30.07	NR		5567.29
MW-1	05/08/97	5597.36	29.99	NR		5567.37
MW-1	08/05/97	5597.36	30.16	NR		5567.20
MW-1	11/04/97	5597.36	30.21	NR		5567.15
MW-1	02/03/98	5597.36	32.48	NR		5564.88
MW-1	05/07/98	5597.36	32.38	NR		5564.98
MW-1	08/04/98	5597.36	32.54	NR		5564.82
MW-1	11/03/98	5597.36	32.62	NR		5564.74
MW-1	02/02/99	5597.36	32.42	NR		5564.94
MW-1	05/19/99	5597.36	32.28	NR		5565.08
MW-1	08/04/99	5597.36	32.28	NR		5565.08
MW-1	11/09/99	5597.36	32.19	NR		5565.17
MW-1	02/25/00	5597.36	32.05	NR		5565.31
MW-1	05/24/00	5597.36	31.96	NR		5565.40
MW-1	08/01/00	5597.36	32.08	NR		5565.28
MW-1	11/06/00	5597.36	32.19	NR		5565.17
MW-1	02/12/01	5597.36	32.12	NR		5565.24
MW-1	05/30/01	5597.36	32.06	NR		5565.30
MW-1	08/07/01	5597.36	32.28	NR		5565.08
MW-1	12/04/01	5597.36	32.40	NR		5564.96
MW-1	02/25/02	5597.36	32.39	NR		5564.97
MW-1	05/14/02	5597.36	32.37	NR		5564.99
MW-1	11/04/02	5597.36	32.67	NR		5564.69
MW-1	05/19/03	5597.36	32.45	ND		5564.91
MW-1	11/15/03	5597.36	32.76	ND		5564.60
MW-1	05/11/04	5597.36	32.61	ND		5564.75
MW-1	11/16/04	5597.36	32.88	ND		5564.48
MW-1	05/18/05	5597.36	32.67	ND		5564.69
MW-1	08/23/05	5597.36	33.05	ND		5564.31
MW-1	11/08/05	5597.36	32.93	ND		5564.43
MW-1	02/23/06	5597.36	32.81	ND		5564.55
MW-1	05/23/06	5597.36	32.83	ND		5564.53
MW-1	08/23/06	5597.36	33.06	ND		5564.30
MW-1	11/08/06	5597.36	33.09	ND		5564.27
MW-1	02/26/07	5597.36	32.94	ND		5564.42
MW-1	05/24/07	5597.36	32.86	ND		5564.50
MW-1	08/21/07	5597.36	33.13	ND		5564.23
MW-1	11/13/07	5597.36	33.21	ND		5564.15
MW-1	02/12/08	5597.36	33.10	ND		5564.26
MW-1	05/07/08	5597.36	32.98	ND		5564.38
MW-1	05/08/08	5597.36	32.98	ND		5564.38
MW-1	08/26/08	5597.36	33.25	ND		5564.11
MW-1	11/06/08	5597.36	33.29	ND		5564.07
MW-1	04/06/14	5597.36	33.33	ND		5564.03
MW-1	10/24/14	5597.36	33.70	ND		5563.66
MW-1	05/30/15	5597.36	33.24	ND		5564.12
MW-1	11/20/15	5597.36	33.54	ND		5563.82
MW-1	04/18/16	5597.36	33.34	ND		5564.02
MW-1	08/09/16	5597.36	33.47	ND		5563.89
MW-1	10/12/16	5597.36	33.55	ND		5563.81
MW-1	03/28/17	5597.36	33.36	ND		5564.00

TABLE 3 - GROUNDWATER ELEVATION RESULTS

HAMNER #9						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-2	10/15/99	5596.69	29.57	NR		5567.12
MW-2	08/28/00	5596.69	31.65	NR		5565.04
MW-2	05/30/01	5596.69	31.57	NR		5565.12
MW-2	08/07/01	5596.69	31.80	NR		5564.89
MW-2	02/25/02	5596.69	31.85	NR		5564.84
MW-2	05/14/02	5596.69	31.85	NR		5564.84
MW-2	05/19/03	5596.69	31.92	ND		5564.77
MW-2	04/06/14	5596.69	DRY	ND		DRY
MW-2	10/24/14	5596.69	DRY	ND		DRY
MW-2	05/30/15	5596.69	DRY	ND		DRY
MW-2	10/23/15		MW-2 Plugged and Abandoned			
MW-3	10/15/99	5597.41	28.34	NR		5569.07
MW-3	08/28/00	5597.41	30.96	NR		5566.45
MW-3	05/30/01	5597.41	30.87	NR		5566.54
MW-3	08/07/01	5597.41	31.10	NR		5566.31
MW-3	02/25/02	5597.41	31.21	NR		5566.20
MW-3	05/14/02	5597.41	31.23	NR		5566.18
MW-3	06/13/02	5597.41	31.33	NR		5566.08
MW-3	11/12/02	5597.41	31.45	NR		5565.96
MW-3	05/19/03	5597.41	31.33	ND		5566.08
MW-3	11/15/03	5597.41	31.64	ND		5565.77
MW-3	05/11/04	5597.41	31.51	ND		5565.90
MW-3	11/16/04	5597.41	31.77	ND		5565.64
MW-3	05/18/05	5597.41	31.63	ND		5565.78
MW-3	08/23/05	5597.41	31.82	ND		5565.59
MW-3	11/08/05	5597.41	38.03	ND		5559.38
MW-3	02/23/06	5597.41	31.70	ND		5565.71
MW-3	05/23/06	5597.41	31.73	ND		5565.68
MW-3	08/23/06	5597.41	31.97	ND		5565.44
MW-3	11/08/06	5597.41	31.96	ND		5565.45
MW-3	02/26/07	5597.41	31.82	ND		5565.59
MW-3	04/06/14		MW-3 damaged, and can no longer be gauged			
MW-3	10/23/15		MW-3 Plugged and Abandoned			
MW-4	11/08/06	5594.55	30.32	ND		5564.23
MW-4	02/26/07	5594.55	30.15	ND		5564.40
MW-4	05/24/07	5594.55	30.07	ND		5564.48
MW-4	08/21/07	5594.55	30.31	ND		5564.24
MW-4	11/13/07	5594.55	30.41	ND		5564.14
MW-4	02/12/08	5594.55	30.31	ND		5564.24
MW-4	05/07/08	5594.55	30.18	ND		5564.37
MW-4	05/08/08	5594.55	30.18	ND		5564.37
MW-4	08/26/08	5594.55	30.42	ND		5564.13
MW-4	11/06/08	5594.55	30.50	ND		5564.05
MW-4	04/06/14	5594.55	30.49	ND		5564.06
MW-4	10/24/14	5594.55	36.83	ND		5557.72
MW-4	05/30/15	5594.55	30.31	ND		5564.24
MW-4	11/21/15	5594.55	30.71	ND		5563.84
MW-4	04/18/16	5594.55	30.49	ND		5564.06
MW-4	08/09/16	5594.55	30.64	ND		5563.91
MW-4	10/12/16	5594.55	30.72	ND		5563.83
MW-4	03/28/17	5594.55	30.53	ND		5564.02

TABLE 3 - GROUNDWATER ELEVATION RESULTS

HAMNER #9						
Location	**Date**	**TOC**	**Depth to Water (ft.)**	**Depth to LNAPL (ft.)**	**LNAPL Thickness (ft.)**	**GW Elevation (ft.)**
MW-5	11/21/15	5598.31	33.09	ND		5565.22
MW-5	04/18/16	5598.31	33.04	ND		5565.27
MW-5	08/09/16	5598.31	33.27	ND		5565.04
MW-5	10/12/16	5598.31	33.27	ND		5565.04
MW-5	03/28/17	5598.31	33.00	ND		5565.31
MW-6	11/21/15	5597.09	32.38	ND		5564.71
MW-6	04/18/16	5597.09	32.25	ND		5564.84
MW-6	08/09/16	5597.09	32.40	ND		5564.69
MW-6	10/12/16	5597.09	32.43	ND		5564.66
MW-6	03/28/17	5597.09	32.26	ND		5564.83
MW-7	11/21/15	5593.43	29.58	ND		5563.85
MW-7	04/18/16	5593.43	29.38	ND		5564.05
MW-7	08/09/16	5593.43	29.51	ND		5563.92
MW-7	10/12/16	5593.43	29.58	ND		5563.85
MW-7	03/28/17	5593.43	29.39	ND		5564.04

Notes:

TOC	Top of casing
ft.	Feet
LNAPL	Light non-aqueous phase liquid
ND	LNAPL not detected
NR	LNAPL not reported

TABLE 4 GROUNDWATER BTEX ANALYTICAL RESULTS

HAMNER #9					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-1	08/25/95	198	1480	146	2250
MW-1	11/08/96	559	499	395	933
MW-1	02/10/97	350	101	233	476
MW-1	05/08/97	266	9.75	230	308
MW-1	08/05/97	272	228	172	370
MW-1	11/04/97	216	72.1	133	260
MW-1	02/03/98	245	276	109	375
MW-1	05/07/98	166	6.02	110	202
MW-1	08/04/98	171	74.4	86.1	209
MW-1	11/03/98	151	58.7	76.4	204
MW-1	02/02/99	153	64.8	89.7	217
MW-1	05/19/99	137	89.4	67.3	141
MW-1	08/04/99	105	32.6	63	113
MW-1	11/09/99	120	39	75	170
MW-1	02/25/00	130	70	78	190
MW-1	05/24/00	110	130	56	200
MW-1	08/01/00	120	39	80	210
MW-1	11/06/00	84	120	56	190
MW-1	02/12/01	95	44	60	150
MW-1	05/30/01	110	36	78	200
MW-1	08/07/01	99	43	58	150
MW-1	12/04/01	150	53	50	110
MW-1	02/25/02	83	25	59	120
MW-1	05/14/02	57	78	46	150
MW-1	11/04/02	72.5	50	47	178.6
MW-1	05/19/03	31.1	24.4	23.9	158
MW-1	11/15/03	65.5	65	44.5	190
MW-1	05/11/04	57.6	44.5	52.1	153
MW-1	11/16/04	38	26.4	34.7	126
MW-1	05/18/05	74	27.9	93.1	340
MW-1	08/23/05	28.6	7	46.3	175
MW-1	11/08/05	26.2	5.5	35.5	137
MW-1	02/23/06	22.1	7.1	28.2	102
MW-1	05/23/06	21.6	4.2	28.3	76.6
MW-1	08/23/06	18.9	5	29.1	76.7
MW-1	11/08/06	20.4	8.2	28.8	71.9
MW-1	02/26/07	14.8	4.7	23.7	72.1
MW-1	05/24/07	12.5	1.5	24.6	45.1
MW-1	08/21/07	10.1	0.75	22.2	38
MW-1	11/13/07	5.7	0.79	13.3	16.5
MW-1	02/12/08	7.5	1.6	19.6	32.9
MW-1	05/07/08	NS	NS	NS	NS
MW-1	05/08/08	4.3	5.8	17.4	51
MW-1	08/26/08	3.7	1.5	15.6	17.2
MW-1	11/06/08	3.8	3.1	17.5	22.2
MW-1	04/06/14	<1.0	5.1 J	26	13
MW-1	10/24/14	0.94 J	<0.70	28	8.8 J
MW-1	05/30/15	1.1	<5.0	23	12
MW-1	11/20/15	<1.0	1	21	4.1
MW-1	04/18/16	<1.0	<5.0	13	6.1
MW-1	08/09/16	1.9	<5.0	24	11
MW-1	10/12/16	<1.0	6.2	19	<5.0
MW-1	03/28/17	<1.0	12	25	<5.0

TABLE 4 GROUNDWATER BTEX ANALYTICAL RESULTS

HAMNER #9					
Location	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**
NMWQCC Standards:		10	750	750	620
MW-2	10/15/99	0.5	0.5	0.5	0.5
MW-2	08/28/00	0.5	0.5	0.5	0.5
MW-2	05/30/01	0.5	0.5	0.5	0.5
MW-2	08/07/01	NS	NS	NS	NS
MW-2	02/25/02	NS	NS	NS	NS
MW-2	05/14/02	0.5	0.5	0.5	1
MW-2	05/19/03	NS	NS	NS	NS
MW-2	04/06/14	NS	NS	NS	NS
MW-2	10/24/14	NS	NS	NS	NS
MW-2	05/30/15	NS	NS	NS	NS
MW-2	10/23/15	MW-2 Plugged and Abandoned			
MW-3	10/15/99	0.5	0.5	0.5	0.5
MW-3	08/28/00	0.5	0.5	0.5	0.5
MW-3	05/30/01	0.5	0.5	0.5	0.5
MW-3	08/07/01	NS	NS	NS	NS
MW-3	02/25/02	NS	NS	NS	NS
MW-3	05/14/02	NS	NS	NS	NS
MW-3	06/13/02	0.5	0.5	0.5	1
MW-3	11/12/02	NS	NS	NS	NS
MW-3	05/19/03	NS	NS	NS	NS
MW-3	11/15/03	NS	NS	NS	NS
MW-3	05/11/04	NS	NS	NS	NS
MW-3	11/16/04	NS	NS	NS	NS
MW-3	05/18/05	NS	NS	NS	NS
MW-3	08/23/05	NS	NS	NS	NS
MW-3	11/08/05	NS	NS	NS	NS
MW-3	02/23/06	NS	NS	NS	NS
MW-3	05/23/06	NS	NS	NS	NS
MW-3	08/23/06	NS	NS	NS	NS
MW-3	11/08/06	NS	NS	NS	NS
MW-3	02/26/07	NS	NS	NS	NS
MW-3	04/06/14	MW-3 damaged, and can no longer be sampled			
MW-3	05/23/15	MW-3 plugged and abandoned			
MW-4	11/08/06	1	0.28	1	0.36
MW-4	02/26/07	NS	NS	NS	NS
MW-4	05/24/07	NS	NS	NS	NS
MW-4	08/21/07	1	1	1	2
MW-4	11/13/07	2	2	2	6
MW-4	02/12/08	2	2	2	6
MW-4	05/07/08	NS	NS	NS	NS
MW-4	05/08/08	NS	NS	NS	NS
MW-4	08/26/08	1	1	1	3
MW-4	11/06/08	NS	NS	NS	NS
MW-4	04/06/14	<0.20	<0.38	<0.20	<0.65
MW-4	10/24/14	<0.38	<0.70	<0.50	<1.6
MW-4	05/30/15	<1.0	<5.0	<1.0	1.7J
MW-4	11/21/15	<1.0	<1.0	<1.0	<3.0
MW-4	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-4	08/09/16	<1.0	<5.0	<1.0	<5.0
MW-4	10/12/16	<1.0	<5.0	<1.0	<5.0
MW-4	03/28/17	<1.0	<5.0	<1.0	<5.0

TABLE 4 GROUNDWATER BTEX ANALYTICAL RESULTS

HAMNER #9					
Location	**Date**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**
NMWQCC Standards:		10	750	750	620
MW-5	11/21/15	<1.0	<5.0	<1.0	<5.0
MW-5	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-5	08/09/16	<1.0	<5.0	<1.0	<5.0
MW-5	10/12/16	<1.0	<5.0	<1.0	<5.0
MW-5	03/28/17	<1.0	<5.0	<1.0	<5.0
MW-6	11/21/15	<1.0	<5.0	<1.0	<5.0
MW-6	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-6	08/09/16	<1.0	<5.0	<1.0	<5.0
MW-6	10/12/16	<1.0	<5.0	<1.0	<5.0
MW-6	03/28/17	<1.0	<5.0	<1.0	<5.0
MW-7	11/21/15	<1.0	<5.0	<1.0	<5.0
MW-7	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-7	08/09/16	<1.0	<5.0	<1.0	<5.0
MW-7	10/12/16	<1.0	<5.0	<1.0	<5.0
MW-7	03/28/17	<1.0	<5.0	<1.0	<5.0

Notes:

µg/L	Micrograms per liter
NS	Not sampled.
NMWQCC	New Mexico Water Quality Control Commission (NMWQCC)
	Results bolded and highlighted yellow exceed their respective NMQCC 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.
BTEX	Benezene, toluene, ethylbenzene, total xylenes

FIGURES

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\HAMNER #9\2017 MAPS\Hamner_#9_GECM_1Q_2017.mxd

MW-5
5565.31
MW-4
5564.02
MW-1
5564.00
MW-6
5564.83
MW-7
5564.04
MW-2
MW-3
PIT
FORMER EPC PIT - EXCAVATED TO 12 FEET
METER HOUSE
HAMNER #9 WELLHEAD
COMPRESSOR
MOTOR OIL DRUM
SOLAR PANEL
SEPARATOR
SMA BENCHMARK
ELEV. 5593.57'
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

5599 5598 5597 5596 5595 5594 5593 5592 5591 5590 5589 5565 5564.5 5564

LEGEND:

- 5594 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FENCE
- GAS — NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- RIG ANCHOR
- SMA BENCHMARK
- WELLHEAD

NOTES:

- 5564.71 — GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- 5564.5 — WATER LEVEL ELEVATION CONTOUR (DASHED WHERE INFERRED FEET ABOVE MEAN SEA LEVEL, 0.5 FOOT CONTOUR LEVEL)
- DIRECTION OF GROUNDWATER FLOW

N

SCALE IN FEET
0 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	4/24/2017	CCL	CCL	SRV

TITLE:

GROUNDWATER ELEVATION MAP
MARCH 28, 2017

PROJECT:

HAMNER #9
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO

Stantec

Figure No.: 1

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\HAMNER #9\2017 MAPS\Hamner_#9_GARM_1Q_2017.mxd

LEGEND:

- 5595 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FENCE
- NATURAL GAS LINE
- ABANDONED MONITORING WELL
- MONITORING WELL
- RIG ANCHOR
- SMA BENCHMARK
- WELLHEAD

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

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

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

N

SCALE IN FEET
0 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	4/24/2017	SLG	SLG	SRV

TITLE:

GROUNDWATER ANALYTICAL RESULTS
MARCH 28, 2017

PROJECT:
HAMNER #9
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO

Stantec

Figure No.:
2

ATTACHMENT A

SOIL BORING LOGS AND MONITORING WELL CONSTRUCTION REPORTS

J-22 Blanco

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1
Well #
Page 1 of 1

PHILIP ENVIRONMENTAL
3000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location Hamner #9 97212

Elevation
Borehole Location QA-S20-T29-R9
GWL Depth
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 8/22/95-0800
Date/Time Completed 8/22/95-1040

Well Logged By CM Chance
Personnel On-Site K Padilla, F. Rivera, D. Chadie
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4" ID HSA / 8¼ ID HSA
Air Monitoring Method PID, CGI

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S HS	Drilling Conditions & Blow Counts
0				Backfill to 12'						
15	1	15-17	4"	Gry clayey SAND, vf sand, loose, sl moist			0	40	640/1046	-0817 hr
20	2	20-22	16"	Gry silty SAND, vf sand, loose, sl moist			0	36	250/1033	-0822
25	3	25-27	8"	AA			8	24	301/879	-0830
30	4	30-32	6"	Gry SAND, f-med sand, tr fine, very loose, saturated			0	18	0/NA	-0837 -Cannot get a GW level. Will drill 5' more -GW 30' -Cobbles @ 32' -Refusal 32' w/ 4¼
35				Cttgs-AA						-Refusal @ 37' w/ 8¼ I.D. augers
40				TDB 37'						

Comments: GW@30'. CMC88 (25-27') sent to lab (BTEX, TPH). Will drill w/ 8¼ ID augers to 40' & set well. Refusal @ 32' w/ 4¼ I.D. augers. Refusal @ 37' w/ 8¼ I.D. augers. Will set well @ 37'.

Geologist Signature Cory Chance

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(606) 326-2262 FAX (606) 326-2388

Borehole # BH-1
Well # MW 1
Page 1 of 1

Project Name EPNG Pits
Project Number 14509 Phase 60077
Project Location Hamner #9 97213

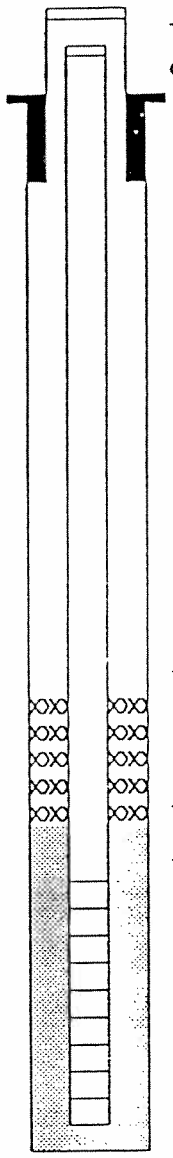
On-Site Geologist C M Chance
Personnel On-Site F. Rivera, D. Charlie
Contractors On-Site
Client Personnel On-Site

Elevation
Well Location QA-S20-T29-R9
GWL Depth
Installed By K. Padilla

Date/Time Started 8/22/95 - 1050
Date/Time Completed 8/22/95 - 1630

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		NA
Bottom of Protective Casing		NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout	8 - 94# bags cement TYPE I-II	0'
Bottom of Grout	.5 - 50# bags powder bentonite	20'
Top of Well Riser	28' Sch 40 - 4" dia PVC Flush thread	+3'
Bottom of Well Riser		25'
Top of Well Screen	10' Sch 40 - 4" dia Flush thread	25'
Bottom of Well Screen	PVC. 0.010 slot	37'
Top of Peltonite Seal	4 - 50# bags Enviroplug Bentonite	20'
Bottom of Peltonite Seal		22'
Top of Gravel Pack	17 - 50# bags	22'
Bottom of Gravel Pack	10-20 silica Sand	35'
Top of Natural Cave-In		35'
Bottom of Natural Cave-In		37'
Top of Groundwater		30'
Total Depth of Borehole		37'



Top of Protective Casing NA
Top of Riser +3'
Ground Surface 0'
Top of Seal 20'
Top of Gravel Pack 22'
Top of Screen 25'
Bottom of Screen 35'
Bottom of Borehole 37'

Comments: Hydrated bentonite w/ 10 gal potable water. Note: Formation may have been "smeared" while pulling augers. Could not get a water level after drilling to 37'. Well was set based on 2' of head in augers at 30' (30-32') while drilling. Refusal was encountered at 37' w/ 2' of cave-in. Only 10' of screen was used due to refusal, which will allow for a 5' seasonal fluctuation

Geologist Signature C M Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # 1
Well # MW2
Page 1 of 2

Phillip Environmental Services Corp.
2000 Monroe Road
[illegible], New Mexico 87401
[illegible] 2262 FAX (505) 326-2388

Project Name EPFS GROUNDWATER
Project Number 628000 Phase
Project Location HAMNER #9

Elevation
Borehole Location T29N R9W S 20 A
GWL Depth 29.31'
Logged By C. CULLICOTT
Drilled By K. PADILLA & D. PADILLA
Date/Time Started 9/24/99 8:10am
Date/Time Completed 9/24/99 10:30 am
Meter 97213

Well Logged By C. CULLICOTT
Personnel On-Site K. PADILLA & D. PADILLA
Contractors On-Site 0
Client Personnel On-Site 0

Drilling Method AUGER
Air Monitoring Method PID

Depth (Feet)		Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0										
5	(1)	5-7½'		(1) FULL RECOVERY. LOOSE ORANGISH BROWN POORLY SORTED SAND (FINE-COARSE) WITH SMALL GRAVEL. CLEAN.						(1) 14 BLOWS SS 0.0 PPM HS PPM
10	(2)	90-12'		(2) 10" RECOVERY SILTY FINE SAND W/ SOME COARSE GRAINS, CONSOLIDATED. CLEAN						(2) 10 BLOWS SS 0.0 PPM
15	(3)	15-17'		(3) 12" RECOVERY CONSOLIDATED SILTY FINE SAND W/ SOME COARSE GRAINS TAN, CLEAN.						(3) 14 BLOWS SS 0.0 PPM
20	(4)	20-22'		(4) FULL RECOVERY - ALL CLEAN UPPER 6": DAMP BROWN LOOSE POORLY SORTED SAND W/SILT MIDDLE 12": DAMP TAN LOOSE POORLY SORTED SAND BOTTOM 6": DAMP BROWN SOMEWHAT PLASTIC SANDY SILT.						(4) 13 BLOWS SS 0.0 PPM
25	(5)	25-27'								(5) 31 BLOWS SS 0.0 PPM
30	(6)	30-32'								(6) 55+ BLOWS SS PPM
	(7)	33-35'		(5) FULL RECOVERY LOOSE TAN SAND, DAMP POORLY SORTED CLEAN.						(7) 35+ BLOWS SS 0.0 PPM
35				(6) OVER						
40										

Comments: FOGGY, COOL, BREEZY

TD 34' - WENT THROUGH PERCHED WATERTABLE

Geologist Signature Cathy Cullicott

ONITORING WELL INSTALLATION RECORD

Borehole # 1
Well # MW2
Page 2 of 2

...vironmental Services Corp.
...ic Road
... New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GROUNDWATER
Project Number 628000 Phase
Project Location HAMNER #9

On-Site Geologist C. CULLICOTT
Personnel On-Site K. PADILLA & D. PADILLA
Contractors On-Site Ø
Client Personnel On-Site Ø

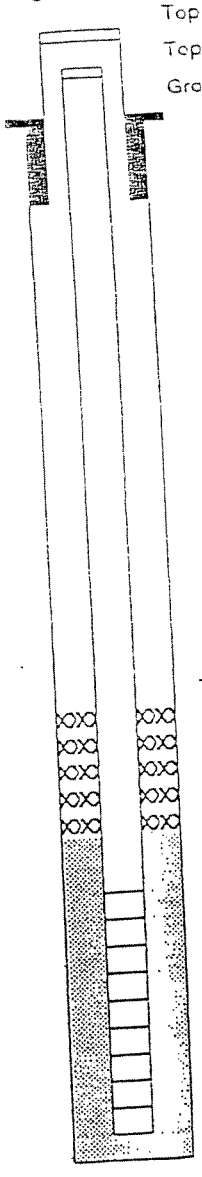
Elevation
Well Location T29N R9W S20 A
GWL Depth 29.31
Installed By K. PADILLA & D. PADILLA

Date/Time Started 9/24/99 8:10 am
Date/Time Completed 9/24/99 10:30 am

Meter 97213 Temporary well was completed 7/18/00 fwinn

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		+3.5
Bottom of Protective Casing		+1.5
Top of Permanent Borehole Casing		+3.0
Bottom of Permanent Borehole Casing		+34
Top of Concrete		=
Bottom of Concrete		0
Top of Grout		0
Bottom of Grout		15
Top of Well Riser	2"	+1'
Bottom of Well Riser	2"	19'
Top of Well Screen	2"	19'
Bottom of Well Screen	2"	34'
Top of Peltonite Seal	BENT.	15'
Bottom of Peltonite Seal	CHIPS	19'
Top of Gravel Pack	CO	17'
Bottom of Gravel Pack	SAND	34'
Top of Natural Cave-In		34'
Bottom of Natural Cave-In		34'
Top of Groundwater		29.31
Total Depth of Borehole		34'



Top of Protective Casing +3.5'
Top of Riser ~~+3.0'~~ +3.0'
Ground Surface ~~0~~

~~open~~ grout to surface during completion

Top of Seal 15'
Top of Gravel Pack 17'
Top of Screen 19'
Bottom of Screen 34'
Bottom of Borehole 34'

Comments: INITIAL DTW 29.37' DTW 12:30 29.31' DTW AFTER BAILING 29.85'
5 gallons Removed 12:35-12:55
WELL IS GOOD PRODUCER
WATER IS TURBID W/ BROWN/TAN SUSPENDED SEDS
NO SHEEN OR ODOR

Geologist Signature Cathy Cullicott

MONITORING WELL INSTALLATION RECORD

Borehole # 1
Well # MW2
Page 2 of 2

Environmental Services Corp.
Road
ington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GROUNDWATER
Project Number 628000 Phase
Project Location HAMNER #9

On-Site Geologist C. CULLICOTT
Personnel On-Site K. PADILLA & D. PADILLA
Contractors On-Site Ø
Client Personnel On-Site Ø

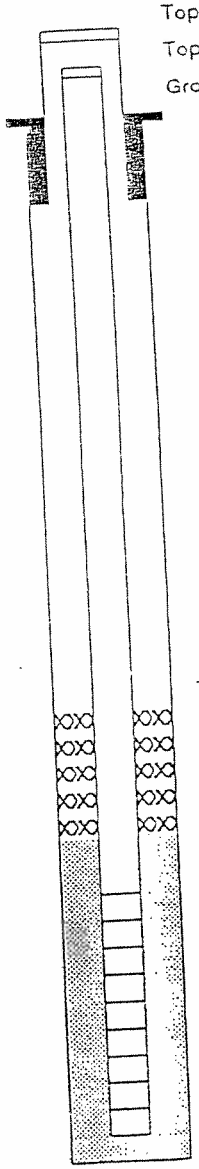
Elevation
Well Location T29N R9W S20 A
GWL Depth 29.31'
Installed By K. PADILLA & D. PADILLA

Date/Time Started 9/24/99 8:10 am
Date/Time Completed 9/24/99 10:30 am

METER 97213

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	+1'
Bottom of Well Riser	2"	19'
Top of Well Screen	2"	19'
Bottom of Well Screen	2"	34'
Top of Peltonite Seal	BENT.	17'
Bottom of Peltonite Seal	CHIPS	19'
Top of Gravel Pack	CO	19'
Bottom of Gravel Pack	SAND	34'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		34'



Top of Protective Casing
Top of Riser +-6"
Ground Surface

OPEN

Top of Seal 15'
Top of Gravel Pack 17'
Top of Screen 19'
Bottom of Screen 34'
Bottom of Borehole 34'

Comments: INITIAL DTW 29.37' DTW 12:30 29.31' DTW AFTER BAILING 29.85'
5 gallons Removed 12:35-12:55
WELL IS GOOD PRODUCER
WATER IS TURBID W/ BROWN/TAN SUSPENDED SEDS
NO SHEEN OR ODOR

Geologist Signature Cathy Cullicott

ECORD OF SUBSURFACE EXPLORATION

Borehole # 2
Well # MW 3
Page 1 of 2

llip Environmental Services Corp.
00 Monroe Road
New Mexico 87401
2262 FAX (505) 326-2388

Project Name EPFS GROUNDWATER
Project Number 628000 Phase
Project Location HAMNER #9

Elevation
Borehole Location T29N R9W S20A
GWL Depth
Logged By C. CULLICOTT
Drilled By F. PADILLA & D. PADILLA
Date/Time Started 9/24/99 10:40am
Date/Time Completed 9/24/99 ~~10:??~~ 1:15pm
Meter 97217

Well Logged By C. CULLICOTT
Personnel On-Site F. PADILLA & D. PADILLA
Contractors On-Site Ø
Client Personnel On-Site Ø

Drilling Method AUGER
Air Monitoring Method PID

Depth (Feet)		Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0										
5	(1)	5-7'		(1) FULL RECOVERY. CLEAN FINE BROWN/TAN SAND WITH VARYING DEGREES OF SILT (LOOSER W/ LESS SILT). COARSER TOWARDS BOTTOM OF SPLITSPOON. 1 LARGE 1" PEBBLE						(1) 10 BLOWS SS 0.0 ppm
10	(2)	10-12'		(2) 6" RECOVERY. CLEAN BROWN SILT, DRY, SLIGHTLY CONSOLIDATED						(2) 8 BLOWS SS 0.0 ppm
15	(3)	15-17'		(3) 12" RECOVERY CLEAN UPPER 6": CONSOLIDATED SLIGHTLY STIFF BROWN SANDY SILT. LOWER 6": LOOSE TAN FINE TO MEDIUM SAND WITH SMALL GRAVEL.						(3) 18 BLOWS SS 0.0 ppm
20	(4)	20-22'		(4) FULL RECOVERY. CLEAN LOOSE, DRY, TAN POORLY SORTED SAND, COARSE → FINE, MOST FINE TO MED. NO GRAVEL						(4) 15 BLOWS SS 0.0 ppm
25	(5)	25-27'								(5) 43 BLOWS SS 0.0 ppm
30	(6)	30-32'								(6) 50+ BLOWS SS 0.0 ppm
35	(7)	35-37'		(5) FULL RECOVERY. CLEAN UPPER 18" LOOSE, POORLY SORTED SAND W/ SMALL GRAVEL. TAN LOWER 6": LOOSE, DAMP, ORANGEISH BROWN FINE TO MEDIUM SAND, NO GRAVEL.						(7) 50+ BLOWS SS 0.0 ppm
40										

Comments: OVERCAST, COOL, OCCASIONAL SUNSHINE (BY END OF DRILLING WAS MOSTLY SUNNY)
TD 35' WENT THROUGH PERCHED WATER TABLE

Geologist Signature Cathy Cullicott

ITORING WELL INSTALLATION RECORD

Borehole # 2
Well # MW3
Page 2 of 3

Project Name EPFS GROUNDWATER

Project Number 628000 Phase
Project Location HANNER #9

On-Site Geologist C. CULLICOTT
Personnel On-Site K. PADILLA & D. PADILLA
Contractors On-Site 0
Client Personnel On-Site 0

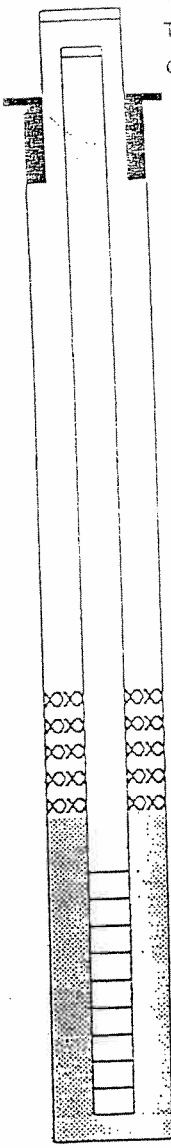
tion
Location T29N R9W S20A
Depth
lled By K. PADILLA & D. PADILLA

/Time Started 9/24/99 10:40am
/Time Completed 9/24/99 1:15pm

meter 97213 Temporary well was completed 7/18/00. Julie

epths in Reference to Ground Suriace

em	Material	Depth
op of Protective Casing		+3.5
Bottom of Protective Casing		-1.5
Top of Permanent Borehole Casing		+3.0
Bottom of Permanent Borehole Casing		-35
Top of Concrete		-
of Concrete		-0
Top of Grout		0
Bottom of Grout		-16
Top of Well Riser	2"	~~+16'~~ +3
Bottom of Well Riser	2"	20'
Top of Well Screen	2"	20'
Bottom of Well Screen	2"	35'
Top of Peltonite Seal	BENT.	16'
Bottom of Peltonite Seal	CHIPS	18'
Top of Gravel Pack	CO	18'
Bottom of Gravel Pack	SAND	35'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		28.25
Total Depth of Borehole		35'



Top of Protective Casing +3.5'
Top of Riser ~~+16'~~ +3.0'
Ground Suriace 0

~~OPEN~~ grout to surface during completion

Top of Seal 16'
Top of Gravel Pack 18'
Top of Screen 20'
Bottom of Screen 35'
Bottom of Borehole 35'

nts: DTW 28.25 1:15 DTW 29.55' AFTER BAILING 1:40
5 gallons Removed 1:20-1:40 WELL IS GOOD PRODUCER
WATER MODERATELY TURBID AFTER ~2gal removed, much less & suspended sed than MW2. WATER HAD NO ODOR OR SHEEN

Geologist Signature Cathy Cullicott

NITORING WELL INSTALLATION RECORD

Environmental Services Corp.
[redacted] Road
[redacted], New Mexico 87401
326-2262 FAX (505) 326-2388

Borehole # 2
Well # MW3
Page 2 of 2

Project Name EPFS GROUNDWATER
Project Number 628000 Phase
Project Location HANNER #9

On-Site Geologist C. CULLICOTT
Personnel On-Site K. PADILLA & D. PADILLA
Contractors On-Site Ø
Client Personnel On-Site Ø

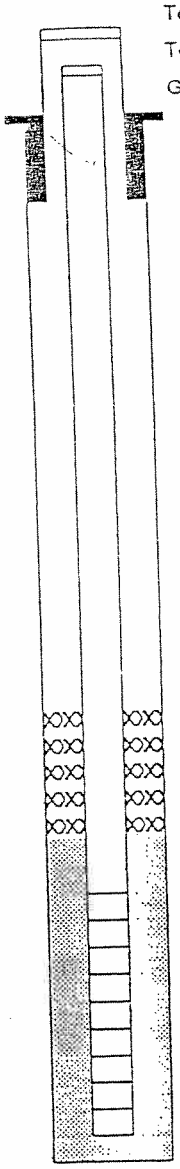
ation
l Location T29N R9W S20A
L Depth
alled By K. PADILLA & D. PADILLA

e/Time Started 9/24/99 10:40am
e/Time Completed 9/24/99 1:15pm

meter 97213

Depths in Reference to Ground Surface

tem	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	+16'
Bottom of Well Riser	2"	20'
Top of Well Screen	2"	20'
Bottom of Well Screen	2"	35'
Top of Peltonite Seal	BENT.	16'
Bottom of Peltonite Seal	CHIPS	18'
Top of Gravel Pack	CO	18'
Bottom of Gravel Pack	SAND	35'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		28.25'
Total Depth of Borehole		35'



Top of Protective Casing
Top of Riser +16'
Ground Surface

OPEN

Top of Seal 16'
Top of Gravel Pack 18'
Top of Screen 20'
Bottom of Screen 35'
Bottom of Borehole 35'

ments: DTW 28.25 1:15 DTW 29.55' AFTER BAILING 1:40
5 gallons removed 1:20-1:40 WELL IS GOOD PRODUCER
WATER MODERATELY TURBID AFTER ~2gal removed, much less suspended sed than MW2. WATER HAD NO ODOR OR SHEEN

Geologist Signature Cathy Cullicott

MONITORING WELL INSTALLATION RECORD

Borehole # _____
Well # MW-4
Page 1 of 1

Lodestar Services, Inc
PO Box 3861
Farmington, New Mexico 87499
(505) 334-2791

Project Name MWH Ground Water
Project Number _____ Cost Code _____
Project Location Hamner #9

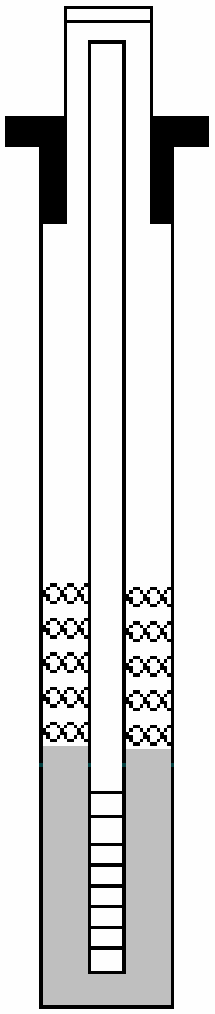
Elevation 5588'
Well Location 36º 42.918' N, 107º 47.780' W
GWL Depth 29'
Installed By Envirotech

On-Site Geologist Ashley Ager
Personnel On-Site
Contractors On-Site Kelly Padilla and assistant
Client Personnel On-Site

Date/Time Started 10/10/06; 11:06
Date/Time Completed 10/10/06; 13:02

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	Steel	2.5
Bottom of Protective Casing		-1.5
Top of Permanent Borehole Casing	Sch. 40 PVC	2.5
Bottom of Permanent Borehole Casing		-39.1
Top of Concrete	Concrete	0.1
Bottom of Concrete		-0.2
Top of Grout		-0.2
Bottom of Grout		-19
Top of Well Riser	Sch. 40 PVC	2.5
Bottom of Well Riser		-39.1
Top of Well Screen	Sch. 40 PVC	-24.1
Bottom of Well Screen		-39.1
Top of Peltonite Seal	Bentonite	-19
Bottom of Peltonite Seal		-22
Top of Gravel Pack	Sand	-22
Bottom of Gravel Pack		-39.3
Top of Natural Cave-In	Coarse sand	-39.3
Bottom of Natural Cave-In		-40
Top of Groundwater		-27.87
Total Depth of Borehole		-40



Top of Protective Casing 2.5
Top of Riser 2.5
Ground Surface 0
Top of Seal -19
Top of Gravel Pack -22
Top of Screen -24.1
Bottom of Screen -39.1
Bottom of Borehole -40

Comments: 50 lb bags of sand used: 11 ea. , 50 lb bags of bentontie used: 1.5ea.

3 gal buckets of grout used: 0.5 ea., 50 lb bags of cement slurry used: 2

Geologist Signature Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4465
Durango, CO 81302
303-917-6288

Borehole #:
Well #: MW-4
Page: 1 of 2
Project Number:
Project Name: MWH Ground Water
Project Location: Hamner #9

Borehole Location: 36º 42.918' N, 107º 47.780' W
GWL Depth: 29'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 10/10/2006
Date Completed: 10/10/2006

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-3'	cuttings	SP: Very coarse, poorly sorted brown sand, damp (b/c of rain), varying mineralogies, sub-rounded. 3' = dry sand	0.0	Fast
5		5-6'	split spoon	SP: brownish red, poorly sorted coarse sand w/bands of well sorted, silty sand, medium grained, (SM)	0.0	Fast
10		10-10.5	split spoon	SP: same as above	0.0	Fast
15		15-17'	split spoon	SP: very coarse, poorly sorted brown sand, dry, varying mineralogies, occasional gravel	0.0	Fast
20						

Comments:

Geologist Signature: Ashley L. Ager

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4465
Durango, CO 81302
303-917-6288

Borehole #:
Well #: MW-4
Page: 2 of 2
Project Number:
Project Name: MWH Ground Water
Project Location: Hamner #9

Borehole Location: 36º 42.918' N, 107º 47.780' W
GWL Depth: 29'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 10/10/2006
Date Completed: 10/10/2006

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
20		20-21.5'	split spoon	SP: same as above	2.9	Fast
25		25-26.5'	split spoon	SP: very coarse sand, poorly sorted, predominately quartz mineralogy, some yellow staining	49.8	Fast
		29'		Water in split spoon		
30		30-31.7'	split spoon	SP: very coarse gray sand, poorly sorted, varying mineralogies, saturated	5.5	Fast
		31.7-32'		Slightly lithified coarse gray sand, poorly sorted, varying mineralogies	5.7	Slower - little penetration with hammer
35		35-36'	split spoon	SP: Coarse gray sand with gravel, poorly sorted, sub-rounded, varying mineralogies, saturated	5.9	Fast
40		40-41.5	split spoon	SP: same as above	4.5	Fast

Comments:

Geologist Signature: Ashley L. Ager

Drilling Log

MWH

Monitoring Well **MW-5**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

Surface Elev. *5595.98 ft* North *NA* East *NA*

Top of Casing *5598.31 ft* Water Level Initial ▽ *5566.81* 10/22/15 00:00 Static ▼ *5565.16* 10/24/15 00:00

Hole Depth *45.0ft* Screen: Diameter *2 in* Length *20.0 ft* Type/Size *PVC/0.01 in*

Hole Diameter *8.25 in* Casing: Diameter *2 in* Length *26.5 ft* Type *PVC*

Drill Co. *National EWP* Drilling Method *Hollow Stem Auger* Sand Pack *12/20 Silica Sand*

Driller *Matt Cain* Driller Reg. # *WD 1210* Log By *Brad Barton*

Start Date *10/21/2015* Completion Date *10/24/2015* Checked By *S. Varsa*

COMMENTS

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	Elevation (ft)
						Dirt with minor vegetation		5595.98
0	0.0					0-8 Hydro-Vac		
	0.0					(0 - 8) Silty SAND: medium brown, loose, fine to medium sand, dry to slightly moist, wet from hydro vac, no cementation, no hydrocarbon odor.		5595
	0.0				SM			
5	0.0							5590
	0.0	100%						
	0.0	100%				(8 - 12.5) Well Graded SAND: all sand sizes, dry to slight moist, medium brown to light brown, fine sand to minor coarse sand, loose, no hydrocarbon odor, no cementation. Excess recovery due to slough in hole.		
10	0.0				SM	⇩gravel in matrix up to 1/4 inch, subrounded.		5585
	0.0							
						(12 - 15) No Recovery		
15		50%						
	0.0				SW	(15 - 17.8) Well Graded SAND: continued, less gravel.		5580
	0.0							
						(17.8 - 20) No Recovery		
20		56%						
	0.0					(20 - 23.1) Silty SAND: slight moist, fine to medium sand, low to medium stiff, minor clay content, no hydrocarbon odor, medium brown, no cementation.		5575
	0.0				SM			
						(23.1 - 25) No Recovery		
25		62%						
						Continued Next Page		

Drilling Log

MWH

Monitoring Well **MW-5**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

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	Elevation (ft)
						Continued		
25	0.0	MW-5 (27-28.7ft) sample 93%			SM	(25 - 26) Silty SAND: continued		5570
	0.0				SW	(26 - 28) Well Graded SAND: fine to medium sand, loose, slight moist to moist, minor cementation, no hydrocarbon odor.		
	0.0				SW	(28 - 28.7) Cemented Well Graded SAND: sandstone: olive brown. Driller reports hard cobbles, sandstone at 28 feet bgs. Hard drilling at 28 to 30 feet bgs. ▼ very moist to wet at 29 feet bgs.		
30	0.0				SW	(28.7 - 29) No Recovery		5565
						(29 - 30.1) Cemented Well Graded SAND: cemented, dark gray to olive brown, all sand sizes, wet, heavily cemented to minor cementation, no hydrocarbon odor.		
						(30.1 - 35) No Recovery		
35	0.0	18%			SW	(35 - 37.1) Cemented Well Graded SAND: to sandstone, medium to light gray, wet to slight moist, no hydrocarbon odor, coarse to fine sand, all sand sizes, heavily cemented to sandstone.		5560
	0.0					(37.1 - 40) No Recovery		
40	0.0	42%			SW	(40 - 40.9) Cemented Well Graded SAND/Sandstone: light gray to medium gray, moist to dry, no hydrocarbon odor, medium and course sand.		5555
						(40.9 - 45) No Recovery		
45		18%				Bottom of Boring 45 feet bgs. Monitoring Well TD = 44.35 feet bgs.		5550
50								5545
55								5540

Drilling Log

MWH

Monitoring Well **MW-6**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

Surface Elev. *5594.69 ft* North *NA* East *NA*

Top of Casing *5597.09 ft* Water Level Initial ▽ *5564.59* 10/21/15 00:00 Static ▼ *5565.47* 10/24/15 00:00

Hole Depth *45.0ft* Screen: Diameter *2 in* Length *20.0 ft* Type/Size *PVC/0.01 in*

Hole Diameter *8.25 in* Casing: Diameter *2 in* Length *26.5 ft* Type *PVC*

Drill Co. *National EWP* Drilling Method *Hollow Stem Auger* Sand Pack *12/20 Silica Sand*

Driller *Matt Cain* Driller Reg. # *WD 1210* Log By *Brad Barton*

Start Date *10/21/2015* Completion Date *10/24/2015* Checked By *S. Varsa*

COMMENTS

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	Elevation (ft)
						Dirt with minor vegetation		5594.69
0	0.0					0-8 Hydro-Vac		
	0.0					(0 - 8) Silty SAND: medium brown, dry to slight moist, wet from hydro vac, very fine sand, loose, no hydrocarbon odor, no cementation.		
	0.0				SM			
5	0.0					⇩increasing sand content, fine to medium sand sizes.		5590
	0.0	100%						
	0.0				SM	(8 - 10) Well Graded SAND: medium brown, fine and medium sand sizes, loose, no cementation, dry to slight moist, no hydrocarbon odor.		
10		100%				Excess recovery due to slough in hole.		5585
	0.0				SP	(10 - 13.4) Poorly Graded SANDS: fine sand, loose, slight moist, no cementation, no hydrocarbon odor.		
	0.0							
						(13.4 - 15) No Recovery		
15		68%						5580
	0.0				SP	(15 - 18.1) Poorly Graded SAND: continued		
	0.0							
						(18.1 - 20) No Recovery		
20		62%						5575
	0.0				SP	(20 - 23.1) Poorly Graded SAND: continued		
	0.0							
						(23.1 - 25) No Recovery		
25		62%						5570
						Continued Next Page		

Drilling Log

MWH

Monitoring Well **MW-6**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

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	Elevation (ft)
						Continued		
25		MW-6 (26.5-28.3ft) sample			SP	(25 - 26) Poorly Graded SAND: continued		
	0.0							
	0.2				SW	(26 - 28.3) Well Graded SAND: fine to medium sand, minor coarse sand, some discoloration at 28 feet bgs, brownish red to light brown, loose, slight moist to moist, no hydrocarbon odor, no cementation.		
						(28.3 - 30) No Recovery		5565
30		66%						
	0.0				SW	(30 - 32.3) Well Graded SAND: heavily cemented well graded sand/sandstone, discoloration from brown to gray to black (organic) to olive brown, wet, medium to coarse sand, no hydrocarbon odor.		
	0.1					▼water at 30 feet bgs.		
						⇩cemented at 31 feet bgs.		
						Driller reports hard drilling at 31.5 feet bgs.		
						(32.3 - 35) No Recovery		
35		46%						5560
	0.0				SW	(35 - 36.6) Well Graded SAND: cemented to sandstone continued, light gray to olive brown, tough drilling, moist to wet, no hydrocarbon odor.		
	0.0					⇩color changes to olive brown, less cementation to no cementation, wet.		
						(36.6 - 40) No Recovery		
40		32%						5555
	0.0				SW	(40 - 43.1) Well Graded SAND: cemented, olive brown to light gray, coarse to medium sand, wet, loose, minor cementation, no hydrocarbon odor.		
	0.0					⇩color changes to light gray, heavily cemented, medium to fine sand, moist, sandstone, hard drilling, medium stong to very strong, no hydrocarbon odor, dry.		
						(43.1 - 45) No Recovery		
45		62%						5550
						Bottom of Boring 45 feet bgs. Monitoring Well TD = 44.35 feet bgs.		
50								5545
55								5540

Drilling Log

MWH

Monitoring Well **MW-7**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

Surface Elev. *5593.65 ft* North *NA* East *NA*

Top of Casing *5593.43 ft* Water Level Initial ▽ *5563.43* 10/23/15 00:00 Static ▼ *5561.78* 10/24/15 00:00

Hole Depth *45.0ft* Screen: Diameter *2 in* Length *20.0 ft* Type/Size *PVC/0.01 in*

Hole Diameter *8.25 in* Casing: Diameter *2 in* Length *26.5 ft* Type *PVC*

Drill Co. *National EWP* Drilling Method *Hollow Stem Auger* Sand Pack *12/20 Silica Sand*

Driller *Matt Cain* Driller Reg. # *WD 1210* Log By *Brad Barton*

Start Date *10/21/2015* Completion Date *11/2/2015* Checked By *S. Varsa*

COMMENTS

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	Elevation (ft)
						Dirt next to access road		5593.65
0	0.0					0-8 Hydro-Vac		
	0.0					(0 - 8) Silty SAND: medium brown, loose, dry to slight moist, wet from hydro vac, fine sand, increasing sand content with depth, no hydrocarbon odor, no cementation.		5590
5	0.0				SM			
	0.0	100%						5585
	0.0					(9 - 12.7) Poorly Graded SAND: dry to moist, loose, fine sand, minor medium sand, no cementation, medium brown, no hydrocarbon odor.		
10	0.0	100%			SP	Excess recovery from slough in hole.		
	0.0					(12.7 - 15) No Recovery		5580
15	0.0	54%			SW	(15 - 18.1) Well Graded SAND: fine and medium sand, trace coarse sand and gravel, subrounded, loose, dry to slightly moist, no cementation.		
	0.0					(18.1 - 20) No Recovery		5575
20	0.0	62%			SW	(20 - 23.3) Well Graded SAND: continued		
	0.0	MW-7 (21.5-23.3ft) sample 66%				(23.3 - 25) No Recovery		5570
25						*Continued Next Page*		

Drilling Log

MWH

Monitoring Well **MW-7**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

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	Elevation (ft)
						Continued		
25	0.0	MW-7 (26-27.6ft) sample			SW	(25 - 27.6) Well Graded SAND: continued		
	18.6					⇩very slight hydrocarbon odor at 27 feet bgs. ⇩color changes to light brown at 27.5 feet bgs, moist, increasing coarse sand, minor cementation.		5565
		52%				(27.6 - 30) No Recovery		
30	0.0				SW	(30 - 31.5) Well Graded SAND: coarse sand to medium sand, wet, discoloration, light brown to black (organic), to olive brown, loose, minor cementation, no hydrocarbon odor. Driller reports hard drilling. ▼water at 30 feet bgs.		
	0.0					(31.5 - 35) No Recovery		5560
35	0.0	30%			SW	(35 - 36.8) Well Graded SAND: cemented, almost sandstone, light gray to gray, wet, heavily cemented, no hydrocarbon odor, coarse to medium sand.		
	0.0					(36.8 - 40) No Recovery		5555
40	0.0	36%				(40 - 42.4) Shale to Sandstone: hard, competent rock, dry, dark gray to light gray, grades to sandstone at 42 feet bgs, no hydrocarbon odor, powdered in sample barrel due to augering through rock.		
	0.0					(42.4 - 45) No Recovery		5550
45		48%				Bottom of Boring 45 feet bgs. Monitoring Well TD = 44.35 feet bgs.		5545
50								5540
55								

Drilling Log

MWH

Soil Boring **SB-1**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

Surface Elev. *5594.06 ft* North *NA* East *NA*

Top of Casing *NA* Water Level Initial ▽ *30.0ft* 10/23/15 00:00 Static ▼ *NA*

Hole Depth *35.0ft* Screen: Diameter *NA* Length *NA* Type/Size *NA*

Hole Diameter *8.25 in* Casing: Diameter *NA* Length *NA* Type *NA*

Drill Co. *National EWP* Drilling Method *Hollow Stem Auger* Sand Pack *NA*

Driller *Matt Cain* Driller Reg. # *WD 1210* Log By *Brad Barton*

Start Date *10/21/2015* Completion Date *10/23/2015* Checked By *S. Varsa*

COMMENTS

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.	Elevation (ft)
						Dirt	5594.06
0	0.0					0-8 Hydro-Vac (0 - 8) Silty SAND: medium brown, minor cobbles at 2 to 4 feet bgs, loose, dry to slight moist, wet from hydro vac, fine sand to medium sand, no hydrocarbon odor, no cementation.	
	0.0				SM		
5	0.0						5590
	0.0	100%					
	0.0				SP	(8 - 9.7) Poorly Graded SAND: medium brown, loose, slight moist to dry, fine sand, minor medium sand, no cementation, no hydrocarbon odor.	5585
10		85%				(9.7 - 10) No Recovery	
	0.6				SW	(10 - 12.7) Well Graded SAND: light brown, loose, no hydrocarbon odor to very slight hydrocarbon odor, gravels in matrix, subrounded, dry, minor cementation, coarse sand to medium sand, sweet hydrocarbon odor.	
	5.8					(12.7 - 15) No Recovery	5580
15		54%					
	83.9				SW	(15 - 18.3) Well Graded SAND: continued, medium hydrocarbon odor (sweet), moist, minor cementation.	
	123.6					⇩Dark gray, strong hydrocarbon odor, hydrocarbon staining, less coarse sand, very moist.	5575
		66%				(18.3 - 20) No Recovery	
20	324.6	SB-1 (20-21.3ft) sample			SP	(20 - 22.6) Poorly Graded SAND: fine sand, minor medium sand, loose, moist, strong hydrocarbon odor, loose, no cementation, dark gray, hydrocarbon stained.	
	529.7					(22.6 - 25) No Recovery	5570
25		52%					

Continued Next Page

Drilling Log

MWH

Soil Boring **SB-1**

Project *Hamner #9* Owner *El Paso Remediation Company*

Location *San Juan County, New Mexico* Project Number *10508023.0102*

Depth (ft)	PID (ppm)	% Recovery	Blow Count Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
						Continued	
25	583.8	SB-1 (26.5-28.1ft) sample			SW	(25 - 28.1) Well Graded SAND: medium to coarse sand, minor fine sand, black hydrocarbon stained to dark gray, loose, moist, strong hydrocarbon odor, minor cementation, tiger stripping with black hydrocarbon staining in dark gray sand.	
	712.6					(28.1 - 30) No Recovery	5565
30	43.1	62%			SW	(30 - 31.6) Well Graded SAND: wet, dark gray to olive brown, loose, minor cementation, slight hydrocarbon odor to no hydrocarbon odor, coarse and medium sand.	
	10.6					▼ water at 30 feet bgs.	
						Driller reports hard drilling at 31 feet bgs.	
						(31.6 - 35) No Recovery	5560
35		32%					
						Bottom of Boring 35 feet bgs.	5555
40							
							5550
45							
							5545
50							
							5540
55							

ATTACHMENT B

LABORATORY ANALYTICAL REPORT

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: 400-135828-1
Client Project/Site: El Paso CGP Company LLC-Hamner #9
Revision: 1

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

Attn: Ms. Sarah Gardner

Carol M Webb

Authorized for release by:
4/14/2017 4:35:58 PM

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

Table of Contents

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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)

Detection Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

Client Sample ID: MW-1 — Lab Sample ID: 400-135828-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	25		1.0		ug/L	1		8021B	Total/NA
Toluene	12		5.0		ug/L	1		8021B	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 400-135828-2

No Detections.

Client Sample ID: MW-5 — Lab Sample ID: 400-135828-3

No Detections.

Client Sample ID: MW-6 — Lab Sample ID: 400-135828-4

No Detections.

Client Sample ID: MW-7 — Lab Sample ID: 400-135828-5

No Detections.

Client Sample ID: TRIP BLANK (3/28/17) — Lab Sample ID: 400-135828-6

No Detections.

This Detection Summary does not include radiochemical test results.

Sample Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-135828-1	MW-1	Water	03/28/17 16:44	03/30/17 08:47
400-135828-2	MW-4	Water	03/28/17 16:38	03/30/17 08:47
400-135828-3	MW-5	Water	03/28/17 16:33	03/30/17 08:47
400-135828-4	MW-6	Water	03/28/17 16:28	03/30/17 08:47
400-135828-5	MW-7	Water	03/28/17 16:50	03/30/17 08:47
400-135828-6	TRIP BLANK (3/28/17)	Water	03/28/17 16:10	03/30/17 08:47

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

Client Sample ID: MW-1
Date Collected: 03/28/17 16:44
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-1
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			04/01/17 02:59	1
Ethylbenzene	**25**		1.0		ug/L			04/01/17 02:59	1
Toluene	**12**		5.0		ug/L			04/01/17 02:59	1
Xylenes, Total	<5.0		5.0		ug/L			04/01/17 02:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*110*		*78 - 124*		*04/01/17 02:59*	*1*

Client Sample ID: MW-4
Date Collected: 03/28/17 16:38
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-2
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			04/01/17 03:58	1
Ethylbenzene	<1.0		1.0		ug/L			04/01/17 03:58	1
Toluene	<5.0		5.0		ug/L			04/01/17 03:58	1
Xylenes, Total	<5.0		5.0		ug/L			04/01/17 03:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*107*		*78 - 124*		*04/01/17 03:58*	*1*

Client Sample ID: MW-5
Date Collected: 03/28/17 16:33
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-3
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			04/01/17 04:57	1
Ethylbenzene	<1.0		1.0		ug/L			04/01/17 04:57	1
Toluene	<5.0		5.0		ug/L			04/01/17 04:57	1
Xylenes, Total	<5.0		5.0		ug/L			04/01/17 04:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*106*		*78 - 124*		*04/01/17 04:57*	*1*

Client Sample ID: MW-6
Date Collected: 03/28/17 16:28
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-4
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			04/01/17 05:57	1
Ethylbenzene	<1.0		1.0		ug/L			04/01/17 05:57	1
Toluene	<5.0		5.0		ug/L			04/01/17 05:57	1
Xylenes, Total	<5.0		5.0		ug/L			04/01/17 05:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*105*		*78 - 124*		*04/01/17 05:57*	*1*

Client Sample Results

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

Client Sample ID: MW-7
Date Collected: 03/28/17 16:50
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-5
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			04/01/17 06:56	1
Ethylbenzene	<1.0		1.0		ug/L			04/01/17 06:56	1
Toluene	<5.0		5.0		ug/L			04/01/17 06:56	1
Xylenes, Total	<5.0		5.0		ug/L			04/01/17 06:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*105*		*78 - 124*		*04/01/17 06:56*	*1*

Client Sample ID: TRIP BLANK (3/28/17)

Lab Sample ID: 400-135828-6

Date Collected: 03/28/17 16:10

Matrix: Water

Date Received: 03/30/17 08:47

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0		ug/L			04/01/17 01:59	1
Ethylbenzene	<1.0		1.0		ug/L			04/01/17 01:59	1
Toluene	<5.0		5.0		ug/L			04/01/17 01:59	1
Xylenes, Total	<5.0		5.0		ug/L			04/01/17 01:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*108*		*78 - 124*		*04/01/17 01:59*	*1*

QC Association Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

GC VOA

Analysis Batch: 347921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-135828-1	MW-1	Total/NA	Water	8021B	
400-135828-2	MW-4	Total/NA	Water	8021B	
400-135828-3	MW-5	Total/NA	Water	8021B	
400-135828-4	MW-6	Total/NA	Water	8021B	
400-135828-5	MW-7	Total/NA	Water	8021B	
400-135828-6	TRIP BLANK (3/28/17)	Total/NA	Water	8021B	
MB 400-347921/3	Method Blank	Total/NA	Water	8021B	
LCS 400-347921/1002	Lab Control Sample	Total/NA	Water	8021B	
400-135794-B-1 MS	Matrix Spike	Total/NA	Water	8021B	
400-135794-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-347921/3
Matrix: Water
Analysis Batch: 347921

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			03/31/17 11:52	1
Ethylbenzene	<1.0		1.0		ug/L			03/31/17 11:52	1
Toluene	<5.0		5.0		ug/L			03/31/17 11:52	1
Xylenes, Total	<5.0		5.0		ug/L			03/31/17 11:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (pid)	*107*		*78 - 124*		*03/31/17 11:52*	*1*

Lab Sample ID: LCS 400-347921/1002
Matrix: Water
Analysis Batch: 347921

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	51.3		ug/L		103	85 - 115		
Ethylbenzene			50.0	53.0		ug/L		106	85 - 115		
Toluene			50.0	52.1		ug/L		104	85 - 115		
Xylenes, Total			150	161		ug/L		107	85 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*102*		*78 - 124*

Lab Sample ID: 400-135794-B-1 MS
Matrix: Water
Analysis Batch: 347921

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<1.0		50.0	48.3		ug/L		97	44 - 150		
Ethylbenzene	<1.0		50.0	49.8		ug/L		100	70 - 142		
Toluene	<5.0		50.0	49.1		ug/L		98	69 - 136		
Xylenes, Total	<5.0		150	151		ug/L		101	68 - 142		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*102*		*78 - 124*

Lab Sample ID: 400-135794-B-1 MSD
Matrix: Water
Analysis Batch: 347921

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	43.9		ug/L		88	44 - 150	9	16
Ethylbenzene	<1.0		50.0	45.0		ug/L		90	70 - 142	10	16
Toluene	<5.0		50.0	44.8		ug/L		90	69 - 136	9	16
Xylenes, Total	<5.0		150	139		ug/L		93	68 - 142	8	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (pid)	*102*		*78 - 124*

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

Client Sample ID: MW-1
Date Collected: 03/28/17 16:44
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-1
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	8021B		1	5 mL	5 mL	347921	04/01/17 02:59	CMW	TAL PEN
	Instrument ID: ETHYL									

Client Sample ID: MW-4
Date Collected: 03/28/17 16:38
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-2
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	8021B		1	5 mL	5 mL	347921	04/01/17 03:58	CMW	TAL PEN
	Instrument ID: ETHYL									

Client Sample ID: MW-5
Date Collected: 03/28/17 16:33
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	347921	04/01/17 04:57	CMW	TAL PEN
	Instrument ID: ETHYL									

Client Sample ID: MW-6
Date Collected: 03/28/17 16:28
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-4
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	8021B		1	5 mL	5 mL	347921	04/01/17 05:57	CMW	TAL PEN
	Instrument ID: ETHYL									

Client Sample ID: MW-7
Date Collected: 03/28/17 16:50
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-5
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	8021B		1	5 mL	5 mL	347921	04/01/17 06:56	CMW	TAL PEN
	Instrument ID: ETHYL									

Client Sample ID: TRIP BLANK (3/28/17)
Date Collected: 03/28/17 16:10
Date Received: 03/30/17 08:47

Lab Sample ID: 400-135828-6
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	8021B		1	5 mL	5 mL	347921	04/01/17 01:59	CMW	TAL PEN
	Instrument ID: ETHYL									

Lab Chronicle

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

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: 400-135828-1
Project/Site: El Paso CGP Company LLC-Hamner #9

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-18
Arkansas DEQ	State Program	6	88-0689	09-01-17
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-17
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-17
Louisiana (DW)	NELAP Secondary AB	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	05-06-17
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	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-17

Method Summary

Client: Stantec Consulting Services Inc
Project/Site: El Paso CGP Company LLC-Hamner #9

TestAmerica Job ID: 400-135828-1

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: SMS	Lab PM: Webb, Carol M	Carrier Tracking No(s):	COC No: 400-64072-24605.1
Client Contact: Steve Varsa	Phone: 515-710-7523	E-Mail: carol.webb@testamericainc.com		Page: Page 1 of 1
Company: Stantec Consulting Services Inc		Analysis Requested		Job #: 10510616.0102

Address: 11153 Aurora Avenue	Due Date Requested:	
City: Des Moines	TAT Requested (days):	
State, Zip: IA, 50322-7904		
Phone: 303-291-2239(Tel)	PO #: Purchase Order Requested	
Email: steve.varsa@stantec.com	WO #:	
Project Name: Hamner #9	Project #: 40005479	
Site:	SSOW#:	

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)
Other:

400-135828 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B - BTEX 8021	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	A	X	
MW-1	3/28/17	1644	G	W			A	2	None
MW-4	|	1638	G	W			A	2	|
MW-5	|	1633	G	W			A	2	|
MW-6	|	1628	G	W			A	2	|
MW-7	|	1650	G	W			A	2	|
Trip Blank	|	1610	G	W			A	2	

SMS

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: [signature]	Date/Time: 3/29/17	Company: Stantec	Received by: [signature]	Date/Time: 3/29/17 847	Company: 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: 0.0 1.3 [illegible]		

Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 400-135828-1

Login Number: 135828
List Number: 1
Creator: Johnson, Jeremy N

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	3.1°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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT C

GROUNDWATER DISPOSAL DOCUMENTATION

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. 683462
NMOCD PERMIT: NM -001-0005
Oil Field Waste Document, Form C138
INVOICE:

DATE 4-4-17

DEL. TKT#.

GENERATOR: El Paso CGP

BILL TO: El Paso

HAULING CO. MWH

DRIVER: Brad Barton
(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		Linchik #24, Hammond #9A	1	.25			.25	
2		Hammer #9						
3								
4								
5								

I, Brad Barton 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 Stanley Gould

san juan reproduction 168-6