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2013 AGWMR

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MWH

BUILDING A BETTER WORLD

March 4, 2014

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Mr. Glenn von Gonten
New Mexico Oil Conservation Division (NMOCD)
1220 South St., Francis Drive
Santa Fe, NM 87505

RE: 2013 Annual Report Submittals
San Juan River Basin Program - Pit Sites

Dear Mr. von Gonten

On behalf of El Paso CGP Company (EPCGPC), MWH is submitting the enclosed 2013 Annual Reports for 18 of its remaining San Juan River Basin pit groundwater remediation sites. The reports present the 2013 sampling data and planned activities for 2014 at these sites.

If you have any questions concerning the enclosed reports, please contact either Joe Wiley (representing EPCGPC) at 713-420-3475 or me at 515-253-0830.

Sincerely,

David C. Wombacher
Principal Engineer

/mja:dcw:hls
Enclosures

cc: Bill Freeman – NNEPA, Shiprock, NM (Navajo Nation Lands, See Table 1)
Mark Kelly – BLM, Farmington, NM (Federal Lands, See Table 1)
Brandon Powell – NMOCD, Aztec, NM (all 18 reports)
Joe Wiley – EPCGP Company (all 18 reports, electronic)

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TABLE 1

REPORT LISTING AND LAND TYPE

SAN JUAN RIVER BASIN PROGRAM – PIT SITES

METER or LINE ID	NMOCD CASE NO.	SITE NAME	Land Type
87640	3RP-155-0	Canada Mesa #2	Federal
89961	3RP-170-0	Fields A#7A	Federal
73220	3RP-068-0	Fogelson 4-1 Com. #14	Federal
95608	3RP-407-0	Gallegos Canyon Unit #124E	Navajo
03906	3RP-179-0	GCU Com A #142E	State/Fee
89894	3RP-186-0	Hammond #41A	Federal
94715	3RP-196-0	James F. Bell #1E	Federal
70194	3RP-201-0	Johnston Fed #4	State/Fee
89232	3RP-202-0	Johnston Fed #6A	Federal
LD072	3RP-204-0	K27 LD072	Federal
LD087	3RP-205-0	K-31 Line Drip	State/Fee
72556	3RP-207-0	Knight #1	State/Fee
LD174	3RP-212-0	Lateral L 40	Federal
LD151	3RP-213-0	Lateral 0-21 Line Drip	Federal
94810	3RP-223-0	Miles Fed 1A	Federal
89620	3RP-235-0	Sandoval GC A #1A	Federal
70445	3RP-074-0	Standard Oil Com #1	State/Fee
71669	3RP-239-0	State Gas Com N #1	State/Fee

2013 ANNUAL GROUNDWATER REPORT

Knight #1

Meter Code: 72556

T30N, R13W, Sec5, Unit A

SITE DETAILS

Site Location: Latitude: 36.846870 N, Longitude: -108.222305 W

Land Type: Fee

Operator: Fuller Production (Well P&A'd)

SITE BACKGROUND

- **Site Assessment:** 1/95
- **Excavation:** 1/95 (60 cy)
- **ORC Nutrient Injection** 11/96

Knight #1 (Site) is 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 (OCD) in correspondence dated November 30, 1995; and the OCD approval conditions were adopted into El Paso CGP Company (EPCGP's) program methods. Formerly, the Site was operated by Fuller Production Inc. and is no longer active. The wellhead was plugged and abandoned in August 2006.

The Site is located on Private/Fee land. Various Site investigations have occurred from 1995 through 2000. Monitoring wells were installed in 1995 (MW-1 through MW-4) and 2000 (MW-5). Free product recovery has been periodically conducted at the Site. Currently, groundwater sampling is conducted on a semi-annual basis. Free product was observed in in 2013.

SUMMARY OF 2013 ACTIVITIES

In July 2013, a site survey was completed to re-develop a base site map and to confirm the accuracy of existing monitoring well elevations and locations.

On June 7, September 13, and December 13, 2013, water levels were gauged at MW-1, MW-2, MW-3, MW-4, and MW-5. Groundwater samples were collected at all five monitoring wells during the June sampling event. During the September and December sampling events groundwater samples were collected at monitoring wells MW-1, MW-2, MW-3, and MW-5. A selective free product recovery sock kit was removed from monitoring well MW-4 during the June 2013 monitoring event and groundwater was sampled. Due to the presence of free product, groundwater was not sampled at MW-4 in September or December 2013. Groundwater samples were collected from each well that did not contain free product using a HydraSleeve™ (HydraSleeve); a disposable, no-purge passive groundwater sampling device. The HydraSleeves were set during the previous sampling event approximately 0.5 feet above termination depth of the monitoring wells using a suspension tether and 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 Test America Laboratories in Corpus Christi, Texas where they were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Additional field parameters were collected including dissolved

2013 ANNUAL GROUNDWATER REPORT

Knight #1

Meter Code: 72556

T30N, R13W, Sec5, Unit A

oxygen, temperature, conductivity, pH, and ORP using a YSI multi-parameter instrument, if free product was not present. The de minimis water remaining in HydraSleeves was combined in a waste container and transferred to an off-site 55-gallon drum for later disposal by Safety-Kleen.

SUMMARY TABLES

Historic analytical and water level data are summarized in Table 1. When free product was present, static water level elevations were corrected for measurable thicknesses of free-product (specific gravity of 0.75).

SITE MAPS

Groundwater analytical maps and groundwater elevation contour maps from each sampling event are included as Figures 1 through 6.

ANALYTICAL LAB REPORTS

The groundwater analytical lab reports are included as Appendix A.

RESULTS

- The groundwater flow direction at the Site is generally to the south-southwest (see Figures 2, 4, and 6).
- Concentrations of benzene and total xylenes in groundwater collected from MW-1 remained above the New Mexico Water Quality Control Commission (NMWQCC) standards for all three sampling events. Toluene concentration was above the NMWQCC standard during the June and September sampling events, but below standard during the December sampling event. Ethylbenzene was either not detected or reported values were below the laboratory quantitative limit (J-flagged) during all three sampling events in 2013.
- Concentrations of benzene in groundwater collected from MW-2 remain above the NMWQCC standard for all three sampling events. Toluene and total xylenes concentrations were below NMWQCC standards during all three sampling events. Ethylbenzene was not detected in the June and September sampling events, and a concentration of 3µg/L was detected in the December 2013 sampling event.
- Concentrations of benzene, ethylbenzene, and total xylenes in groundwater collected from MW-3 remained above the NMWQCC standards for all three sampling events. Toluene concentrations were not detected in the collected groundwater during all three sampling events in 2013.
- Approximately 1.01 feet of free product was recorded at MW-4 during the June sampling event. Concentrations of benzene, ethylbenzene, and total xylenes in MW-4 were above their respective NMWQCC standards. Toluene concentrations

2013 ANNUAL GROUNDWATER REPORT

Knight #1

Meter Code: 72556

T30N, R13W, Sec5, Unit A

were not detected in the groundwater collected from MW-4. Approximately 1.77 feet of free product was detected in September, and approximately 0.52 feet of free product was detected in December.

- Benzene, Toluene, and Ethylbenzene concentrations were not detected in each of the three sampling events from MW-5. Xylene was either not detected or reported values were below the laboratory quantitative limit (J-flagged) during all three sampling events in 2013.

PLANNED FUTURE ACTIVITIES

Following the completion of a Site access agreement with the current land owner, the installation of additional monitoring wells is proposed at the Site to further assess the extent of dissolved phase hydrocarbons and to confirm and/or further define the groundwater gradient at the Site. MW-1 through MW-5 and the newly installed monitoring wells will be sampled on a semi-annual basis.

TABLES

TABLE 1 – GROUNDWATER ANALYTICAL AND WATER LEVEL RESULTS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight								
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)
NMWQCC Standards:		10	750	750	620	NA	NA	NA
MW-1	10/16/95	5080	1180	1050	9970	26.03	-	-
MW-1	12/12/95	4330	679	1010	8560	25.91	-	-
MW-1	04/09/96	5490	208	1100	7370	26.71	26.34	0.37
MW-1	07/17/96	6450	279	990	9060	25.39	25.35	0.04
MW-1	10/15/96	9870	840	1120	10900	27.35	26.60	0.75
MW-1	01/13/97	7760	332	914	10900	26.53	-	-
MW-1	04/22/97	2700	<1	492	6690	26.23	-	-
MW-1	07/14/97	3900	36.7	530	6700	25.25	-	-
MW-1	10/22/97	4270	48.7	728	8580	26.22	-	-
MW-1	01/09/98	4750	24.2	819	9480	25.82	-	-
MW-1	04/24/98	5610	44.7	898	9530	26.01	25.87	0.14
MW-1	04/16/99	7340	42.8	853	10600	26.52	26.40	0.12
MW-1	04/19/00	9400	510	4300	66000	27.14	27.07	0.07
MW-1	09/05/01					28.32	27.93	0.39
MW-1	09/11/01					28.10	28.05	0.05
MW-1	09/04/02					28.39	28.31	0.08
MW-1	12/10/02					28.47	28.31	0.16
MW-1	03/20/03					28.14	28.05	0.09
MW-1	06/19/03					28.02	28.00	0.02
MW-1	09/17/03					28.97	28.95	0.02
MW-1	12/09/03					28.32	28.30	0.02
MW-1	03/15/04					27.99	27.89	0.10
MW-1	09/15/04					28.78	28.77	0.01
MW-1	03/16/05					27.68	27.67	0.00
MW-1	09/19/05	4430	23.7	487	7370	27.47	-	-
MW-1	03/27/06	4410	26.6 J	337	7860	26.49	-	-
MW-1	09/26/06	5880	36.5	633	11000	25.91	-	-
MW-1	03/28/07	3740	<50	441	9210	25.87	-	-
MW-1	09/17/07	4640	93.3	444	8180	26.94	-	-
MW-1	03/04/08					25.70	-	-
MW-1	09/09/08	3230	<50	324	6780	26.68	-	-
MW-1	03/02/09					24.71	-	-
MW-1	08/27/09	2790	8.3 J	1190	12500	24.30	-	-
MW-1	02/11/10					24.83	-	-
MW-1	05/21/10					23.54	-	-
MW-1	09/29/10	2910	<50	1600	15000	24.33	-	-
MW-1	11/02/10					22.31	-	-
MW-1	02/02/11					23.62	-	-
MW-1	05/04/11					22.50	-	-
MW-1	09/30/11	1590	5 J	1120	10600	22.26	-	-
MW-1	11/11/11					22.87	-	-
MW-1	02/16/12					24.01	-	-
MW-1	05/08/12					22.01	-	-
MW-1	06/07/13	830	<60	1100	14000	21.73	-	-
MW-1	09/13/13	810	<60	960	3100	26.75	-	-
MW-1	12/13/13	600	25 J	730	2200	26.45	-	-

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Knight								
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)
NMWQCC Standards:		10	750	750	620	NA	NA	NA
MW-2	12/12/95	175	<12.5	74.3	671	25.37	-	-
MW-2	04/09/96	39.2	<1	13.4	77.9	25.58	-	-
MW-2	07/17/96	9.55	<1	2.39	3.65	25.09	-	-
MW-2	10/15/96	49.7	<1	<1	38.4	26.36	-	-
MW-2	01/13/97	20.3	<1	<1	37.3	26.05	-	-
MW-2	04/22/97	19.4	<1	<1	29.8	25.82	-	-
MW-2	10/22/97	155	<1	12.6	204	25.86	-	-
MW-2	01/09/98	58	<1	3.85	207	25.50	-	-
MW-2	04/24/98	19.4	<1	<1	40.7	25.60	-	-
MW-2	02/09/99	19	<1	<1	48	26.05	-	-
MW-2	04/16/99	16.7	<1	<1	41	26.16	-	-
MW-2	04/19/00	23	0.5	<0.5	26	25.92	-	-
MW-2	09/11/01	110	<0.5	17	200	27.60	-	-
MW-2	09/04/02	269	7.4	48.9	482.4	27.88	-	-
MW-2	12/10/02					27.90	-	-
MW-2	06/19/03					27.46	-	-
MW-2	09/17/03	177	<1	41	343	28.42	-	-
MW-2	12/09/03					27.87	-	-
MW-2	03/15/04					27.55	-	-
MW-2	09/15/04	291	<0.5	48.9	431	28.25	-	-
MW-2	03/16/05					27.30	-	-
MW-2	09/19/05	126	<1	9.5	231	26.80	-	-
MW-2	03/27/06					26.18	-	-
MW-2	09/26/06	95.8	<1	5.5	189	25.66	-	-
MW-2	03/28/07					25.58	-	-
MW-2	09/17/07	317	<1	12.5	354	26.63	-	-
MW-2	03/04/08					25.47	-	-
MW-2	09/09/08	34.3	<1	1.1	71.9	26.30	-	-
MW-2	03/02/09					24.46	-	-
MW-2	08/27/09	26.6	1.3	1.6	9	24.00	-	-
MW-2	02/11/10					24.45	-	-
MW-2	05/21/10					23.21	-	-
MW-2	09/29/10	100	<2	11.5	34.8	23.00	-	-
MW-2	11/02/10					22.03	-	-
MW-2	02/02/11					23.41	-	-
MW-2	05/04/11					22.67	-	-
MW-2	09/30/11	26.6	<1	1	9.5	21.75	-	-
MW-2	11/11/11					22.59	-	-
MW-2	02/16/12					23.72	-	-
MW-2	05/08/12					21.99	-	-
MW-2	06/07/13	200	<0.30	4.4	21	22.88	-	-
MW-2	09/13/13	120	<0.30	17	150	26.49	-	-
MW-2	12/13/13	27	3	5.5	74	26.18	-	-

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Knight								
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)
NMWQCC Standards:		10	750	750	620	NA	NA	NA
MW-3	12/12/95	979	<125	398	2540	25.67	-	-
MW-3	04/09/96	328	<1	132	369	25.78	-	-
MW-3	07/17/96	299	<1	76.7	251	25.15	-	-
MW-3	01/13/97	395	<1	126	955	26.41	26.25	0.16
MW-3	07/14/97	499	<1	104	583	25.21	-	-
MW-3	10/22/97	817	7.22	141	869	26.01	-	-
MW-3	01/09/98	702	<1	185	1080	25.69	-	-
MW-3	04/24/98	377	11.8	126	525	25.76	-	-
MW-3	04/16/99	191	4.11	18.1	169	26.30	-	-
MW-3	04/19/00	40	0.6	1.1	28	26.75	-	-
MW-3	09/05/01					27.91	27.84	0.07
MW-3	09/11/01					27.91	27.89	0.02
MW-3	09/04/02					28.17	28.16	0.01
MW-3	12/10/02					28.20	28.17	0.03
MW-3	06/19/03					27.81	-	-
MW-3	09/17/03					28.79	28.76	0.03
MW-3	12/09/03					28.11	-	-
MW-3	03/15/04					27.78	-	-
MW-3	09/15/04					28.60	-	-
MW-3	03/16/05					27.48	-	-
MW-3	09/19/05	73.8	<1	5.2	158	27.16	-	-
MW-3	03/27/06					26.34	-	-
MW-3	09/26/06	3370	25	498	3960	25.83	-	-
MW-3	03/28/07					25.71	-	-
MW-3	09/17/07	288	<1	65.4	599	26.85	-	-
MW-3	03/04/08					25.55	-	-
MW-3	09/09/08	805	3.3	160	1630	25.62	-	-
MW-3	03/02/09					24.55	-	-
MW-3	08/27/09	2490	<25	842	6560	24.13	-	-
MW-3	02/11/10					24.67	-	-
MW-3	05/21/10					23.40	-	-
MW-3	09/29/10	2710	<50	1390	10600	23.42	-	-
MW-3	11/02/10					22.20	-	-
MW-3	02/02/11					23.44	-	-
MW-3	05/04/11					22.37	-	-
MW-3	09/30/11	1410	5.8 J	1280	12600	21.94	-	-
MW-3	11/11/11					22.75	-	-
MW-3	02/16/12					23.85	-	-
MW-3	05/08/12					21.90	-	-
MW-3	06/07/13	760	<0.30	1700	19000	21.61	-	-
MW-3	09/13/13	770	<0.30	1400	11000	26.71	-	-
MW-3	12/13/13	610	<38	960	9200	26.31	-	-

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Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)
NMWQCC Standards:		10	750	750	620	NA	NA	NA
MW-4	12/12/95	90.1	<12.5	16.8	144	26.27	-	-
MW-4	04/09/96	63.1	<1	<1	42.5	26.40	-	-
MW-4	07/17/96	35	<1	<1	17.8	25.77	-	-
MW-4	10/15/96	53.5	<1	<1	28.4	27.26	-	-
MW-4	01/13/97	56.2	<1	<1	48.4	26.96	-	-
MW-4	04/22/97	32.8	<1	<1	15.2	26.69	-	-
MW-4	07/14/97	10.4	<1	<1	5.79	25.78	-	-
MW-4	10/22/97	215	<1	5.5	184	26.72	-	-
MW-4	01/09/98	114	<1	2.66	85.7	26.34	-	-
MW-4	04/24/98	55.4	<1	<1	19.3	26.44	-	-
MW-4	04/16/99	129	<1	2.03	87.3	26.97	-	-
MW-4	04/19/00	110	6.5	17	140	26.09	-	-
MW-4	09/11/01	140	<0.5	9.6	110	28.48	-	-
MW-4	09/04/02	261	3.1	20.1	246.5	28.76	-	-
MW-4	12/10/02					28.80	-	-
MW-4	06/19/03					28.43	-	-
MW-4	09/17/03	192	<1	26.3	194	29.36	-	-
MW-4	12/09/03					28.73	-	-
MW-4	03/15/04					28.42	-	-
MW-4	09/15/04	182	<0.5	9.8	161	29.20	-	-
MW-4	03/16/05					28.12	-	-
MW-4	09/19/05	199	<1	53.8	416	27.74	-	-
MW-4	03/27/06					26.87	-	-
MW-4	09/26/06	180	12.5	55.9	417	26.45	-	-
MW-4	03/28/07					26.34	-	-
MW-4	09/17/07	272	4.7	21.3	236	27.44	-	-
MW-4	03/04/08					26.23	-	-
MW-4	09/09/08	265	0.94 J	26.5	274	26.15	-	-
MW-4	03/02/09					25.19	-	-
MW-4	08/27/09					27.10	24.13	2.97
MW-4	09/23/09	2110	12.6 J	676	6440	26.15	25.35	0.80
MW-4	10/19/09					25.70	25.15	0.55
MW-4	11/05/09					25.95	25.69	0.26
MW-4	12/21/09					26.05	25.85	0.20
MW-4	02/11/10					25.40	25.28	0.12
MW-4	05/21/10					24.05	24.03	0.02
MW-4	09/29/10	1400	<50	1020	6410	25.05	23.35	1.70
MW-4	11/02/10					23.38	22.74	0.64
MW-4	02/02/11					24.37	24.18	0.19
MW-4	05/04/11					22.13	-	-
MW-4	09/30/11	534	<10	1800	9510	24.52	21.85	2.67
MW-4	11/11/11					23.74	23.40	0.34
MW-4	02/16/12					24.68	-	-
MW-4	05/08/12					22.46	22.44	0.02
MW-4	06/07/13	2700	<0.30	900	12000	24.76	23.75	1.01
MW-4	09/13/13					28.84	27.07	1.77
MW-4	12/13/13					27.30	26.78	0.52

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight								
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)
NMWQCC Standards:		10	750	750	620	NA	NA	NA
MW-5	11/15/00	<0.5	<0.5	<0.5	<0.5	25.62	-	-
MW-5	09/11/01	<0.5	<0.5	<0.5	0.6	25.94	-	-
MW-5	09/04/02	<0.5	0.3	0.9	1.4	26.21	-	-
MW-5	12/10/02					26.11	-	-
MW-5	06/19/03					25.80	-	-
MW-5	09/17/03					26.67	-	-
MW-5	12/09/03					25.88	-	-
MW-5	03/15/04					25.52	-	-
MW-5	09/15/04					26.60	-	-
MW-5	03/16/05					25.21	-	-
MW-5	09/19/05					25.20	-	-
MW-5	03/28/07					23.54	-	-
MW-5	09/17/07					24.87	-	-
MW-5	03/04/08					23.28	-	-
MW-5	09/09/08					23.69	-	-
MW-5	03/02/09					22.52	-	-
MW-5	08/27/09					22.51	-	-
MW-5	02/11/10					22.74	-	-
MW-5	05/21/10					21.43	-	-
MW-5	09/29/10	34.1	<2	<2	2.7 J	21.33	-	-
MW-5	11/02/10					20.48	-	-
MW-5	02/02/11					20.52	-	-
MW-5	05/04/11					20.66	-	-
MW-5	09/30/11	<1	<1	<1	1.2 J	20.24	-	-
MW-5	11/11/11					21.89	-	-
MW-5	02/16/12					21.85	-	-
MW-5	05/08/12					19.79	-	-
MW-5	06/07/13	<0.14	<0.30	<0.20	<0.23	20.70	-	-
MW-5	09/13/13	<0.14	<0.30	<0.20	<0.23	24.68	-	-
MW-5	12/13/13	<0.20	<0.38	<0.20	0.68 J	24.13	-	-
Notes:								
Results highlighted yellow exceed their respective New Mexico Water Quality Control Commission standards.								
"J" = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.								
"<" = analyte was not detected at the indicated reporting limit (some historic data were reported at the detection limit).								

FIGURES

FIGURE 1: JUNE 7, 2013 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 2: JUNE 7, 2013 GROUNDWATER ELEVATION MAP

FIGURE 3: SEPTEMBER 13, 2013 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 4: SEPTEMBER 13, 2013 GROUNDWATER ELEVATION MAP

FIGURE 5: DECEMBER 13, 2013 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 6: DECEMBER 13, 2013 GROUNDWATER ELEVATION MAP

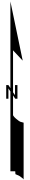


LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- MONITORING WELL

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
<0.30 = 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



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/16/2013	CCL	CCL	DAW

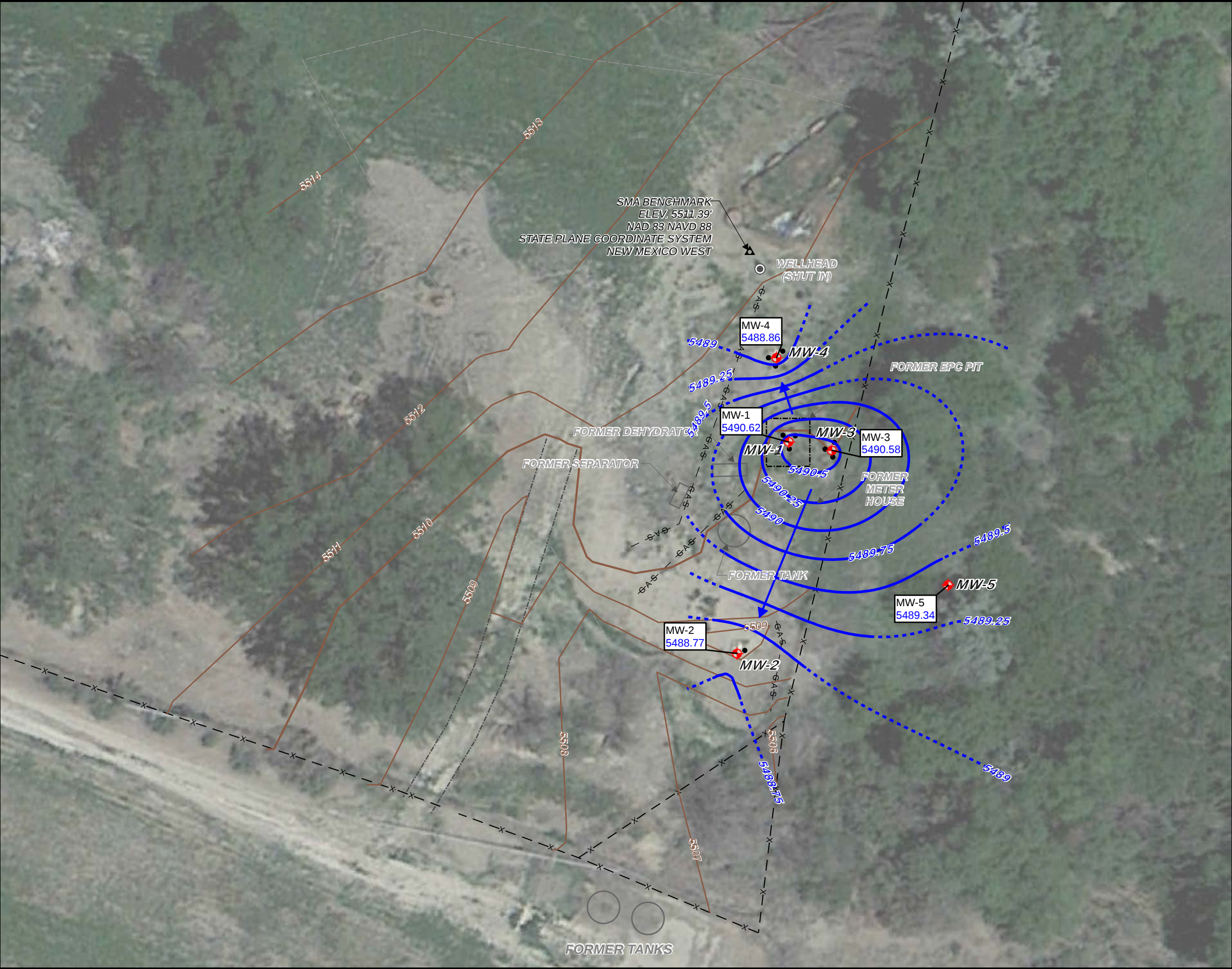
TITLE: **KNIGHT #1**
GROUNDWATER ANALYTICAL RESULTS
SAMPLED JUNE 7, 2013

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO



Figure No.:

1

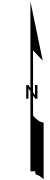


LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- MONITORING WELL

NOTES:

- GROUNDWATER ELEVATION CORRECTED FOR PRODUCT THICKNESS. FEET ABOVE MEAN SEA LEVEL
- CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL, 0.05 FOOT CONTOUR INTERVAL)
- DIRECTION OF GROUNDWATER FLOW



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/16/2013	CCL	CCL	DAW

TITLE: *KNIGHT #1
GROUNDWATER ELEVATION MAP
GAUGED JUNE 7, 2013*

PROJECT: *SAN JUAN RIVER BASIN
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO*



Figure No.:

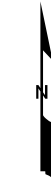


LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- MONITORING WELL

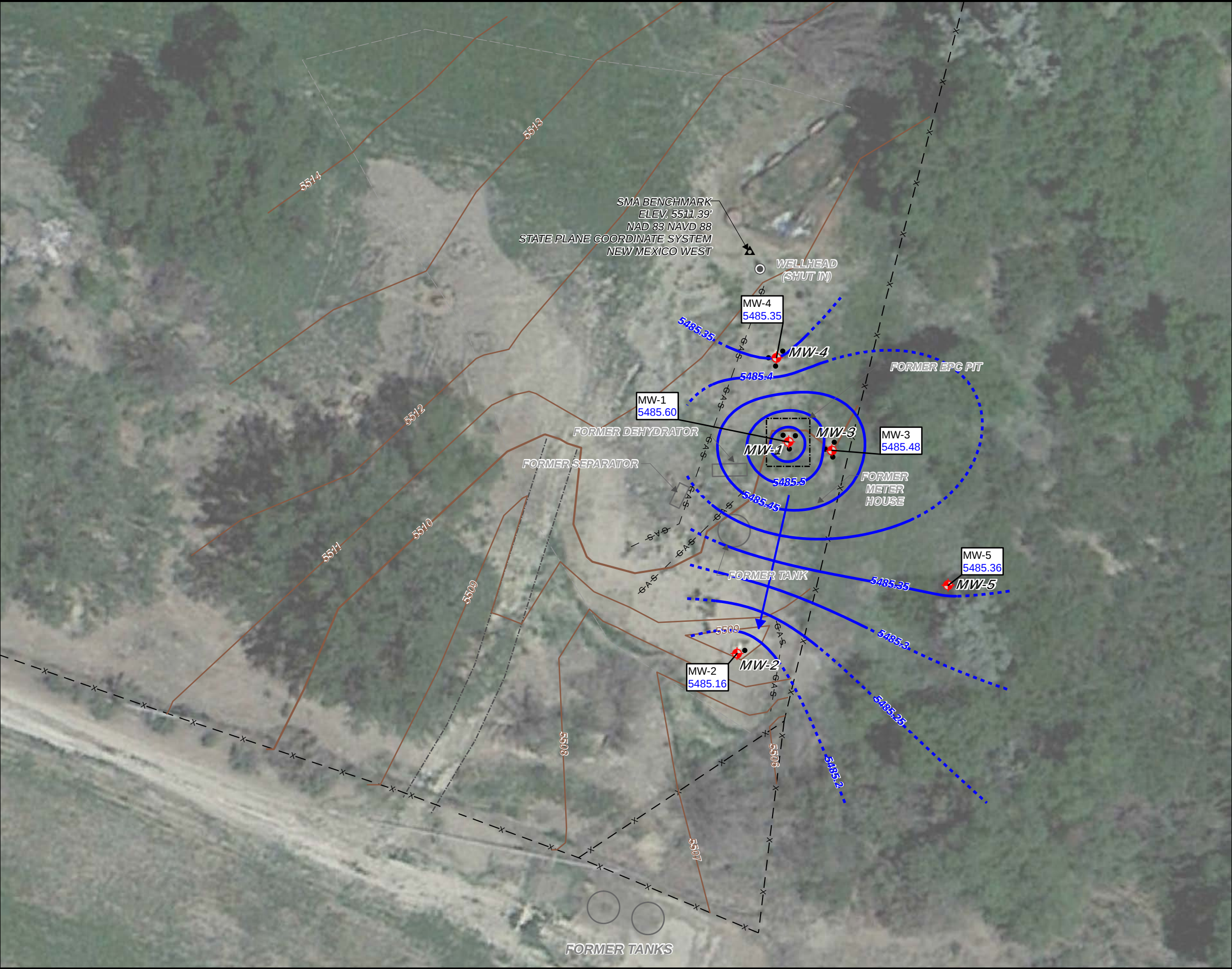
EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:
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NS = NOT SAMPLED
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ANALYTE	NMWOCC STANDARDS
B = Benzene	10 µg/L
T = Toluene	750 µg/L
E = Ethylbenzene	750 µg/L
X = Total Xylenes	620 µg/L



SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/16/2013	CCL	CCL	DAW

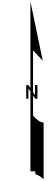


LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- MONITORING WELL

NOTES:

- GROUNDWATER ELEVATION CORRECTED FOR PRODUCT THICKNESS. FEET ABOVE MEAN SEA LEVEL
- CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL, 0.05 FOOT CONTOUR INTERVAL)
- DIRECTION OF GROUNDWATER FLOW



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/18/2013	CCL	CCL	DAW

TITLE: **KNIGHT #1**
GROUNDWATER ELEVATION MAP
GAUGED SEPTEMBER 13, 2013

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO



Figure No.:

4

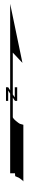


LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- MONITORING WELL

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:
RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
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µg/L = MICROGRAMS PER LITER
<0.30 = 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



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	9/14/2014	CCL	CCL	DAW

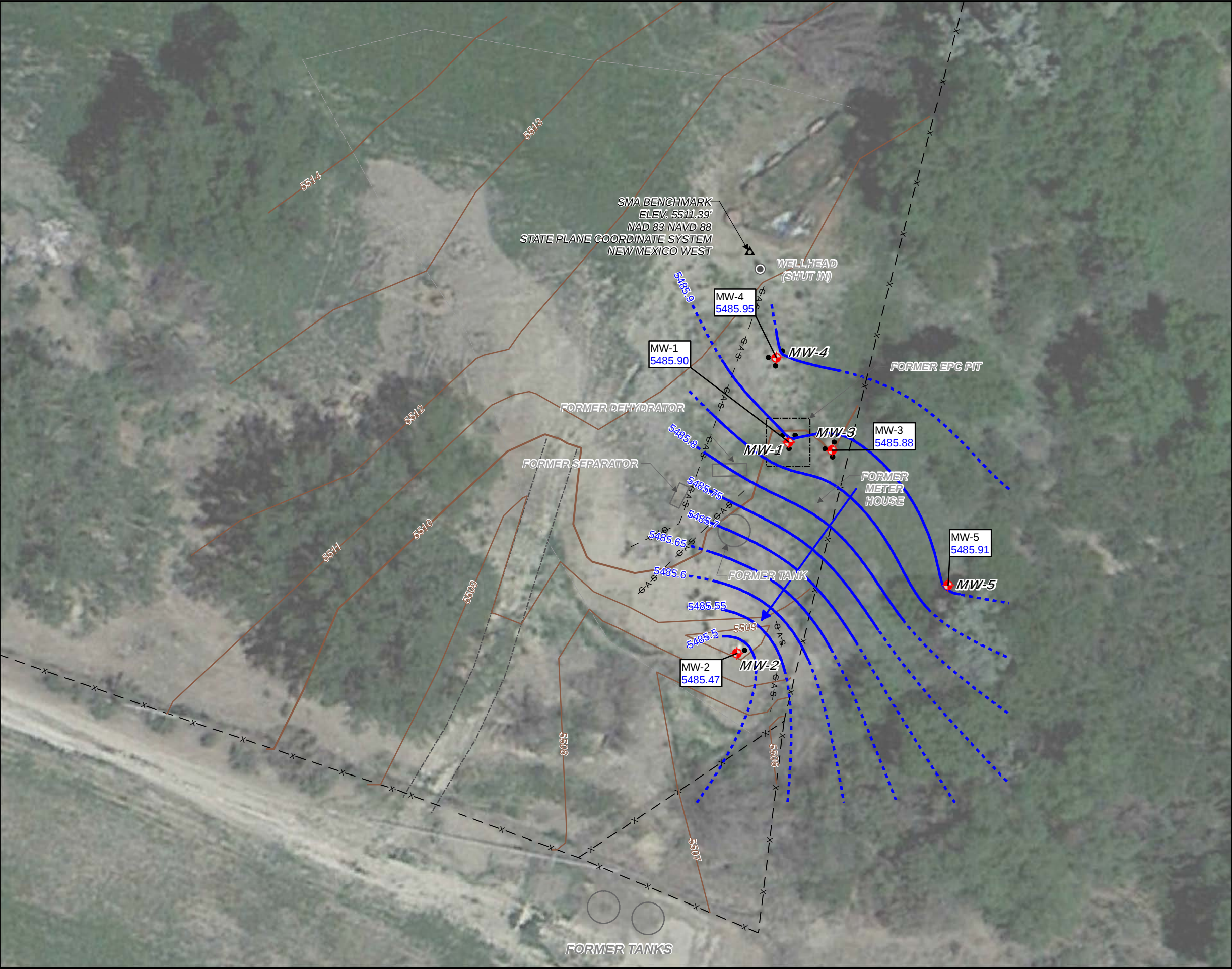
TITLE:
KNIGHT #1
GROUNDWATER ANALYTICAL RESULTS
SAMPLED DECEMBER 13, 2013

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO



Figure No.:

5

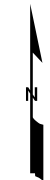


LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- MONITORING WELL

NOTES:

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- CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL, 0.05 FOOT CONTOUR INTERVAL)
- DIRECTION OF GROUNDWATER FLOW



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	9/14/2014	CCL	CCL	DAW

TITLE: **KNIGHT #1**
GROUNDWATER ELEVATION MAP
GAUGED DECEMBER 13, 2013

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO



Figure No.:

6

APPENDIX A

JUNE 7, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT

SEPTEMBER 13, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT

DECEMBER 13, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Corpus Christi
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Tel: (361)289-2673

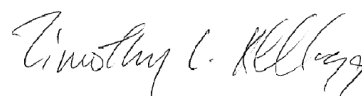
TestAmerica Job ID: 560-40551-1

TestAmerica Sample Delivery Group: June 2013
Client Project/Site: Knight #1

For:

MWH Americas Inc
1801 California Street
Suite 2900
Denver, Colorado 80202

Attn: Mr. Daniel Wade



Authorized for release by:
6/19/2013 9:23:31 AM

Timothy Kellogg, Lab Director
tim.kellogg@testamericainc.com

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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.

Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
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)

Case Narrative

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Job ID: 560-40551-1

Laboratory: TestAmerica Corpus Christi

Narrative

Receipt

The samples were received on 6/12/2013 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5° C. No analytical or quality issues were noted.

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Detection Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Client Sample ID: MW-1

Lab Sample ID: 560-40551-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.83		0.20	0.028	mg/L	200		8260B	Total/NA
Ethylbenzene	1.1		0.20	0.040	mg/L	200		8260B	Total/NA
Xylenes, Total	14		0.60	0.045	mg/L	200		8260B	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 560-40551-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.20		0.0050	0.00070	mg/L	5		8260B	Total/NA
Ethylbenzene	0.0044		0.0010	0.00020	mg/L	1		8260B	Total/NA
Xylenes, Total	0.021		0.0030	0.00023	mg/L	1		8260B	Total/NA

Client Sample ID: MW-3

Lab Sample ID: 560-40551-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.76		0.10	0.014	mg/L	100		8260B	Total/NA
Ethylbenzene	1.7		0.10	0.020	mg/L	100		8260B	Total/NA
Xylenes, Total	19		0.30	0.023	mg/L	100		8260B	Total/NA

Client Sample ID: MW-4

Lab Sample ID: 560-40551-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.7		0.10	0.014	mg/L	100		8260B	Total/NA
Ethylbenzene	0.90		0.10	0.020	mg/L	100		8260B	Total/NA
Xylenes, Total	12		0.30	0.023	mg/L	100		8260B	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 560-40551-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Corpus Christi

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Client Sample ID: MW-1

Date Collected: 06/10/13 10:10

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.83		0.20	0.028	mg/L			06/16/13 14:01	200
Ethylbenzene	1.1		0.20	0.040	mg/L			06/16/13 14:01	200
Toluene	<0.060		0.20	0.060	mg/L			06/16/13 14:01	200
Xylenes, Total	14		0.60	0.045	mg/L			06/16/13 14:01	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130					06/16/13 14:01	200
4-Bromofluorobenzene (Surr)	100		70 - 130					06/16/13 14:01	200
Dibromofluoromethane (Surr)	105		70 - 130					06/16/13 14:01	200
1,2-Dichloroethane-d4 (Surr)	101		70 - 130					06/16/13 14:01	200

Client Sample ID: MW-2

Date Collected: 06/10/13 09:50

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.20		0.0050	0.00070	mg/L			06/17/13 12:57	5
Ethylbenzene	0.0044		0.0010	0.00020	mg/L			06/16/13 14:26	1
Toluene	<0.00030		0.0010	0.00030	mg/L			06/16/13 14:26	1
Xylenes, Total	0.021		0.0030	0.00023	mg/L			06/16/13 14:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130					06/16/13 14:26	1
Toluene-d8 (Surr)	100		70 - 130					06/17/13 12:57	5
4-Bromofluorobenzene (Surr)	104		70 - 130					06/16/13 14:26	1
4-Bromofluorobenzene (Surr)	99		70 - 130					06/17/13 12:57	5
Dibromofluoromethane (Surr)	98		70 - 130					06/16/13 14:26	1
Dibromofluoromethane (Surr)	108		70 - 130					06/17/13 12:57	5
1,2-Dichloroethane-d4 (Surr)	99		70 - 130					06/16/13 14:26	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130					06/17/13 12:57	5

Client Sample ID: MW-3

Date Collected: 06/10/13 09:55

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.76		0.10	0.014	mg/L			06/16/13 14:51	100
Ethylbenzene	1.7		0.10	0.020	mg/L			06/16/13 14:51	100
Toluene	<0.030		0.10	0.030	mg/L			06/16/13 14:51	100
Xylenes, Total	19		0.30	0.023	mg/L			06/16/13 14:51	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		70 - 130					06/16/13 14:51	100
4-Bromofluorobenzene (Surr)	101		70 - 130					06/16/13 14:51	100
Dibromofluoromethane (Surr)	101		70 - 130					06/16/13 14:51	100
1,2-Dichloroethane-d4 (Surr)	101		70 - 130					06/16/13 14:51	100

TestAmerica Corpus Christi

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Client Sample ID: MW-4

Date Collected: 06/10/13 10:30

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.7		0.10	0.014	mg/L			06/16/13 15:16	100
Ethylbenzene	0.90		0.10	0.020	mg/L			06/16/13 15:16	100
Toluene	<0.030		0.10	0.030	mg/L			06/16/13 15:16	100
Xylenes, Total	12		0.30	0.023	mg/L			06/16/13 15:16	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		06/16/13 15:16	100
4-Bromofluorobenzene (Surr)	101		70 - 130		06/16/13 15:16	100
Dibromofluoromethane (Surr)	105		70 - 130		06/16/13 15:16	100
1,2-Dichloroethane-d4 (Surr)	99		70 - 130		06/16/13 15:16	100

Client Sample ID: MW-5

Date Collected: 06/10/13 09:40

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-5

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			06/16/13 15:42	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			06/16/13 15:42	1
Toluene	<0.00030		0.0010	0.00030	mg/L			06/16/13 15:42	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			06/16/13 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		06/16/13 15:42	1
4-Bromofluorobenzene (Surr)	96		70 - 130		06/16/13 15:42	1
Dibromofluoromethane (Surr)	106		70 - 130		06/16/13 15:42	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 130		06/16/13 15:42	1

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 560-89164/8

Matrix: Water

Analysis Batch: 89164

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			06/16/13 09:48	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			06/16/13 09:48	1
Toluene	<0.00030		0.0010	0.00030	mg/L			06/16/13 09:48	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			06/16/13 09:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		70 - 130		06/16/13 09:48	1
4-Bromofluorobenzene (Surr)	95		70 - 130		06/16/13 09:48	1
Dibromofluoromethane (Surr)	103		70 - 130		06/16/13 09:48	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 130		06/16/13 09:48	1

Lab Sample ID: LCS 560-89164/3

Matrix: Water

Analysis Batch: 89164

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0250	0.0281		mg/L		112	70 - 130
Ethylbenzene	0.0250	0.0246		mg/L		98	70 - 130
Toluene	0.0250	0.0277		mg/L		111	70 - 130
Xylenes, Total	0.0750	0.0741		mg/L		99	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	107		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130

Lab Sample ID: MB 560-89169/8

Matrix: Water

Analysis Batch: 89169

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			06/17/13 12:32	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			06/17/13 12:32	1
Toluene	<0.00030		0.0010	0.00030	mg/L			06/17/13 12:32	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			06/17/13 12:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		70 - 130		06/17/13 12:32	1
4-Bromofluorobenzene (Surr)	91		70 - 130		06/17/13 12:32	1
Dibromofluoromethane (Surr)	110		70 - 130		06/17/13 12:32	1
1,2-Dichloroethane-d4 (Surr)	105		70 - 130		06/17/13 12:32	1

TestAmerica Corpus Christi

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

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

Lab Sample ID: LCS 560-89169/3

Matrix: Water

Analysis Batch: 89169

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0250	0.0276		mg/L		110	70 - 130
Ethylbenzene	0.0250	0.0245		mg/L		98	70 - 130
Toluene	0.0250	0.0278		mg/L		111	70 - 130
Xylenes, Total	0.0750	0.0736		mg/L		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		70 - 130
4-Bromofluorobenzene (Surr)	108		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
1,2-Dichloroethane-d4 (Surr)	96		70 - 130

Lab Sample ID: 560-40551-2 MS

Matrix: Water

Analysis Batch: 89169

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.20		0.125	0.333		mg/L		107	70 - 130
Ethylbenzene	0.0035		0.125	0.131		mg/L		102	70 - 130
Toluene	<0.0015		0.125	0.140		mg/L		112	70 - 130
Xylenes, Total	0.013		0.375	0.395		mg/L		102	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	105		70 - 130
4-Bromofluorobenzene (Surr)	109		70 - 130
Dibromofluoromethane (Surr)	103		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 130

Lab Sample ID: 560-40551-2 MSD

Matrix: Water

Analysis Batch: 89169

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.20		0.125	0.322		mg/L		98	70 - 130	3	20
Ethylbenzene	0.0035		0.125	0.121		mg/L		94	70 - 130	7	20
Toluene	<0.0015		0.125	0.133		mg/L		106	70 - 130	5	20
Xylenes, Total	0.013		0.375	0.371		mg/L		95	70 - 130	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	104		70 - 130
4-Bromofluorobenzene (Surr)	107		70 - 130
Dibromofluoromethane (Surr)	104		70 - 130
1,2-Dichloroethane-d4 (Surr)	96		70 - 130

TestAmerica Corpus Christi

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Client Sample ID: MW-1

Date Collected: 06/10/13 10:10

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		200	89164	06/16/13 14:01	RT	TAL CC

Client Sample ID: MW-2

Date Collected: 06/10/13 09:50

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	89164	06/16/13 14:26	RT	TAL CC
Total/NA	Analysis	8260B		5	89169	06/17/13 12:57	RT	TAL CC

Client Sample ID: MW-3

Date Collected: 06/10/13 09:55

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	89164	06/16/13 14:51	RT	TAL CC

Client Sample ID: MW-4

Date Collected: 06/10/13 10:30

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	89164	06/16/13 15:16	RT	TAL CC

Client Sample ID: MW-5

Date Collected: 06/10/13 09:40

Date Received: 06/12/13 10:00

Lab Sample ID: 560-40551-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	89164	06/16/13 15:42	RT	TAL CC

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

Certification Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Laboratory: TestAmerica Corpus Christi

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Kansas	NELAP	7	E-10362	10-31-13
Oklahoma	State Program	6	9968	08-31-13
Texas	NELAP	6	T104704210-12-8	03-31-14
USDA	Federal		P330-11-00060	02-03-14

Method Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CC

Protocol References:

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

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

Sample Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 560-40551-1
SDG: June 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-40551-1	MW-1	Water	06/10/13 10:10	06/12/13 10:00
560-40551-2	MW-2	Water	06/10/13 09:50	06/12/13 10:00
560-40551-3	MW-3	Water	06/10/13 09:55	06/12/13 10:00
560-40551-4	MW-4	Water	06/10/13 10:30	06/12/13 10:00
560-40551-5	MW-5	Water	06/10/13 09:40	06/12/13 10:00



CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION			PROJECT INFORMATION			ANALYSIS/METHOD REQUEST		
COMPANY:	MWH		PROJECT NAME/NUMBER:	Knights #1		5 560-40551 Chain of Custody 560-40551 Loc: 560		
SEND REPORT TO:	Daniel Wade		BILLING INFORMATION					
ADDRESS:	1801 California St.		BILL TO:					
	Suite 2900		ADDRESS:					
	Denver, CO		Houste, TX					
PHONE:	303-291-2250		PHONE:			560-40551 Chain of Custody		
FAX:			FAX:					
			PO NO:					
SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER	REMARKS/PRECAUTIONS.
MW-1		6/10/13	1010	GW	VOA	HCL	3	X
MW-2		6/10/13	950	GW	VOA	HCL	3	X
MW-3		6/10/13	955	GW	VOA	HCL	3	X
MW-4		6/10/13	1030	GW	VOA	HCL	3	X
MW-5		6/10/13	940	GW	VOA	HCL	3	X
SAMPLER: Daniel Wade		SHIPMENT METHOD: FedEx		AIRBILL NO: 80224426456				
REQUIRED TURNAROUND		ROUTINE TAT (10 BUSINESS DAYS)		RUSH TAT (MAY REQUIRE SURCHARGE)				
1. RELINQUISHED BY: Daniel Wade		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: Daniel Wade		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
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SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
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SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:		DATE:		DATE:
SIGNATURE: MWH		TIME: 1000		PRINTED NAME/COMPANY:		TIME:		TIME:
PRINTED NAME/COMPANY: MWH		DATE: 6/11		SIGNATURE:				

TestAmerica
1733 N. Padre Island Drive
Corpus Christi, TX 78408

Phone: 361.289.2673/Fax: 361.289.2471

TAL-8222-560 (0412)

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-40551-1

SDG Number: June 2013

Login Number: 40551

List Number: 1

Creator: McDermott, Vivian

List Source: TestAmerica Corpus Christi

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.	True	
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	
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.	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	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Corpus Christi
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Tel: (361)289-2673

TestAmerica Job ID: 560-42539-1

TestAmerica Sample Delivery Group: September 2013
Client Project/Site: Knight Groundwater Analysis

For:

MWH Americas Inc
1801 California Street
Suite 2900
Denver, Colorado 80202

Attn: Mr. Daniel Wade



Authorized for release by:

10/3/2013 11:14:10 AM

Lindy Maingot, Project Manager I
lindy.maingot@testamericainc.com

Designee for

Timothy Kellogg, Lab Director
tim.kellogg@testamericainc.com

LINKS

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www.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.

Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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)

Case Narrative

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Job ID: 560-42539-1

Laboratory: TestAmerica Corpus Christi

Narrative

Job Narrative
560-42539-1

Comments

No additional comments.

Receipt

The samples were received on 9/14/2013 10:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

GC/MS VOA

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

Detection Summary

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Client Sample ID: MW-1

Lab Sample ID: 560-42539-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.81		0.020	0.0028	mg/L	20		8260B	Total/NA
Ethylbenzene	0.96		0.020	0.0040	mg/L	20		8260B	Total/NA
Xylenes, Total	3.1		0.060	0.0045	mg/L	20		8260B	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 560-42539-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.12		0.0010	0.00014	mg/L	1		8260B	Total/NA
Ethylbenzene	0.017		0.0010	0.00020	mg/L	1		8260B	Total/NA
Xylenes, Total	0.15		0.0030	0.00023	mg/L	1		8260B	Total/NA

Client Sample ID: MW-3

Lab Sample ID: 560-42539-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.77		0.10	0.014	mg/L	100		8260B	Total/NA
Ethylbenzene	1.4		0.10	0.020	mg/L	100		8260B	Total/NA
Xylenes, Total	11		0.30	0.023	mg/L	100		8260B	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 560-42539-4

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Corpus Christi

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Client Sample ID: MW-1

Date Collected: 09/13/13 09:15

Date Received: 09/14/13 10:05

Lab Sample ID: 560-42539-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.81		0.020	0.0028	mg/L			09/19/13 13:18	20
Ethylbenzene	0.96		0.020	0.0040	mg/L			09/19/13 13:18	20
Toluene	<0.0060		0.020	0.0060	mg/L			09/19/13 13:18	20
Xylenes, Total	3.1		0.060	0.0045	mg/L			09/19/13 13:18	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130					09/19/13 13:18	20
4-Bromofluorobenzene (Surr)	91		70 - 130					09/19/13 13:18	20
Dibromofluoromethane (Surr)	93		70 - 130					09/19/13 13:18	20
1,2-Dichloroethane-d4 (Surr)	103		70 - 140					09/19/13 13:18	20

Client Sample ID: MW-2

Date Collected: 09/13/13 09:05

Date Received: 09/14/13 10:05

Lab Sample ID: 560-42539-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.12		0.0010	0.00014	mg/L			09/19/13 13:43	1
Ethylbenzene	0.017		0.0010	0.00020	mg/L			09/19/13 13:43	1
Toluene	<0.00030		0.0010	0.00030	mg/L			09/19/13 13:43	1
Xylenes, Total	0.15		0.0030	0.00023	mg/L			09/19/13 13:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130					09/19/13 13:43	1
4-Bromofluorobenzene (Surr)	95		70 - 130					09/19/13 13:43	1
Dibromofluoromethane (Surr)	90		70 - 130					09/19/13 13:43	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 140					09/19/13 13:43	1

Client Sample ID: MW-3

Date Collected: 09/13/13 09:10

Date Received: 09/14/13 10:05

Lab Sample ID: 560-42539-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.77		0.10	0.014	mg/L			09/19/13 14:08	100
Ethylbenzene	1.4		0.10	0.020	mg/L			09/19/13 14:08	100
Toluene	<0.030		0.10	0.030	mg/L			09/19/13 14:08	100
Xylenes, Total	11		0.30	0.023	mg/L			09/19/13 14:08	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		70 - 130					09/19/13 14:08	100
4-Bromofluorobenzene (Surr)	91		70 - 130					09/19/13 14:08	100
Dibromofluoromethane (Surr)	97		70 - 130					09/19/13 14:08	100
1,2-Dichloroethane-d4 (Surr)	101		70 - 140					09/19/13 14:08	100

TestAmerica Corpus Christi

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Client Sample ID: MW-5

Lab Sample ID: 560-42539-4

Date Collected: 09/13/13 09:00

Matrix: Water

Date Received: 09/14/13 10:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			09/19/13 14:34	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			09/19/13 14:34	1
Toluene	<0.00030		0.0010	0.00030	mg/L			09/19/13 14:34	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			09/19/13 14:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	95		70 - 130		09/19/13 14:34	1
4-Bromofluorobenzene (Surr)	86		70 - 130		09/19/13 14:34	1
Dibromofluoromethane (Surr)	97		70 - 130		09/19/13 14:34	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 140		09/19/13 14:34	1

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 560-92913/8

Matrix: Water

Analysis Batch: 92913

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			09/19/13 09:56	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			09/19/13 09:56	1
Toluene	<0.00030		0.0010	0.00030	mg/L			09/19/13 09:56	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			09/19/13 09:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		70 - 130		09/19/13 09:56	1
4-Bromofluorobenzene (Surr)	85		70 - 130		09/19/13 09:56	1
Dibromofluoromethane (Surr)	96		70 - 130		09/19/13 09:56	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 140		09/19/13 09:56	1

Lab Sample ID: LCS 560-92913/3

Matrix: Water

Analysis Batch: 92913

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0250	0.0226		mg/L		91	70 - 130
Ethylbenzene	0.0250	0.0237		mg/L		95	70 - 130
Toluene	0.0250	0.0218		mg/L		87	70 - 130
Xylenes, Total	0.0750	0.0715		mg/L		95	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
1,2-Dichloroethane-d4 (Surr)	97		70 - 140

Certification Summary

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Laboratory: TestAmerica Corpus Christi

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Kansas	NELAP	7	E-10362	10-31-13
Oklahoma	State Program	6	9968	08-31-14
Texas	NELAP	6	T104704210-12-8	03-31-14
USDA	Federal		P330-11-00060	02-03-14

Method Summary

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CC

Protocol References:

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

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

Sample Summary

Client: MWH Americas Inc
Project/Site: Knight Groundwater Analysis

TestAmerica Job ID: 560-42539-1
SDG: September 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-42539-1	MW-1	Water	09/13/13 09:15	09/14/13 10:05
560-42539-2	MW-2	Water	09/13/13 09:05	09/14/13 10:05
560-42539-3	MW-3	Water	09/13/13 09:10	09/14/13 10:05
560-42539-4	MW-5	Water	09/13/13 09:00	09/14/13 10:05

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-42539-1

SDG Number: September 2013

Login Number: 42539

List Number: 1

Creator: Wing, Randi

List Source: TestAmerica Corpus Christi

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	
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.	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	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Corpus Christi
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Tel: (361)289-2673

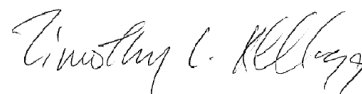
TestAmerica Job ID: 560-44354-1

TestAmerica Sample Delivery Group: December 2013
Client Project/Site: Knight #1 Groundwater Analysis

For:

MWH Americas Inc
2890 East Cottonwood Pkwy
Suite 300
Salt Lake City, Utah 84121

Attn: Mr. Cary Ruble



Authorized for release by:
12/30/2013 7:19:10 PM

Timothy Kellogg, Lab Director
(361)289-2673
tim.kellogg@testamericainc.com

LINKS

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www.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.

Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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)

Case Narrative

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Job ID: 560-44354-1

Laboratory: TestAmerica Corpus Christi

Narrative

Receipt

The samples were received on 12/17/2013 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5° C. No analytical or quality issues were noted.

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Detection Summary

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Client Sample ID: MW-1

Lab Sample ID: 560-44354-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.60		0.10	0.010	mg/L	50		8021B	Total/NA
Toluene	0.025	J	0.10	0.019	mg/L	50		8021B	Total/NA
Ethylbenzene	0.73		0.10	0.010	mg/L	50		8021B	Total/NA
Xylenes, Total	2.2		0.10	0.032	mg/L	50		8021B	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 560-44354-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.027		0.0020	0.00020	mg/L	1		8021B	Total/NA
Toluene	0.0030		0.0020	0.00038	mg/L	1		8021B	Total/NA
Ethylbenzene	0.0055		0.0020	0.00020	mg/L	1		8021B	Total/NA
Xylenes, Total	0.074		0.0020	0.00065	mg/L	1		8021B	Total/NA

Client Sample ID: MW-3

Lab Sample ID: 560-44354-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.61		0.20	0.020	mg/L	100		8021B	Total/NA
Ethylbenzene	0.96		0.20	0.020	mg/L	100		8021B	Total/NA
Xylenes, Total	9.2		0.20	0.065	mg/L	100		8021B	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 560-44354-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.00068	J	0.0020	0.00065	mg/L	1		8021B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Corpus Christi

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Client Sample ID: MW-1

Date Collected: 12/13/13 11:35

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-1

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.60		0.10	0.010	mg/L			12/23/13 10:49	50
Toluene	0.025	J	0.10	0.019	mg/L			12/23/13 10:49	50
Ethylbenzene	0.73		0.10	0.010	mg/L			12/23/13 10:49	50
Xylenes, Total	2.2		0.10	0.032	mg/L			12/23/13 10:49	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		58 - 129					12/23/13 10:49	50
Trifluorotoluene (Surr)	88		54 - 130					12/23/13 10:49	50

Client Sample ID: MW-2

Date Collected: 12/13/13 11:30

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-2

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.027		0.0020	0.00020	mg/L			12/23/13 11:16	1
Toluene	0.0030		0.0020	0.00038	mg/L			12/23/13 11:16	1
Ethylbenzene	0.0055		0.0020	0.00020	mg/L			12/23/13 11:16	1
Xylenes, Total	0.074		0.0020	0.00065	mg/L			12/23/13 11:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		58 - 129					12/23/13 11:16	1
Trifluorotoluene (Surr)	96		54 - 130					12/23/13 11:16	1

Client Sample ID: MW-3

Date Collected: 12/13/13 11:40

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-3

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.61		0.20	0.020	mg/L			12/23/13 11:43	100
Toluene	<0.038		0.20	0.038	mg/L			12/23/13 11:43	100
Ethylbenzene	0.96		0.20	0.020	mg/L			12/23/13 11:43	100
Xylenes, Total	9.2		0.20	0.065	mg/L			12/23/13 11:43	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		58 - 129					12/23/13 11:43	100
Trifluorotoluene (Surr)	85		54 - 130					12/23/13 11:43	100

Client Sample ID: MW-5

Date Collected: 12/13/13 11:25

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-4

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00020		0.0020	0.00020	mg/L			12/23/13 12:34	1
Toluene	<0.00038		0.0020	0.00038	mg/L			12/23/13 12:34	1
Ethylbenzene	<0.00020		0.0020	0.00020	mg/L			12/23/13 12:34	1
Xylenes, Total	0.00068	J	0.0020	0.00065	mg/L			12/23/13 12:34	1

TestAmerica Corpus Christi

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Client Sample ID: MW-5

Date Collected: 12/13/13 11:25

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-4

Matrix: Water

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene (Surr)	84		58 - 129		12/23/13 12:34	1
Trifluorotoluene (Surr)	85		54 - 130		12/23/13 12:34	1

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 560-96487/5

Matrix: Water

Analysis Batch: 96487

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00020		0.0020	0.00020	mg/L			12/22/13 22:55	1
Toluene	<0.00038		0.0020	0.00038	mg/L			12/22/13 22:55	1
Ethylbenzene	<0.00020		0.0020	0.00020	mg/L			12/22/13 22:55	1
Xylenes, Total	<0.00065		0.0020	0.00065	mg/L			12/22/13 22:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		58 - 129		12/22/13 22:55	1
Trifluorotoluene (Surr)	87		54 - 130		12/22/13 22:55	1

Lab Sample ID: LCS 560-96487/4

Matrix: Water

Analysis Batch: 96487

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0400	0.0358		mg/L		90	70 - 130
Toluene	0.0400	0.0361		mg/L		90	70 - 130
Ethylbenzene	0.0400	0.0366		mg/L		91	70 - 130
Xylenes, Total	0.120	0.108		mg/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		58 - 129
Trifluorotoluene (Surr)	87		54 - 130

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Client Sample ID: MW-1

Date Collected: 12/13/13 11:35

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		50	96487	12/23/13 10:49	RQH	TAL CC

Client Sample ID: MW-2

Date Collected: 12/13/13 11:30

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	96487	12/23/13 11:16	RQH	TAL CC

Client Sample ID: MW-3

Date Collected: 12/13/13 11:40

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		100	96487	12/23/13 11:43	RQH	TAL CC

Client Sample ID: MW-5

Date Collected: 12/13/13 11:25

Date Received: 12/17/13 10:40

Lab Sample ID: 560-44354-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	96487	12/23/13 12:34	RQH	TAL CC

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

Certification Summary

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Laboratory: TestAmerica Corpus Christi

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Kansas	NELAP	7	E-10362	10-31-14
Oklahoma	State Program	6	9968	08-31-14
Texas	NELAP	6	T104704210-12-8	03-31-14
USDA	Federal		P330-11-00060	02-03-14

Method Summary

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

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

Protocol References:

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

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

Sample Summary

Client: MWH Americas Inc
Project/Site: Knight #1 Groundwater Analysis

TestAmerica Job ID: 560-44354-1
SDG: December 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-44354-1	MW-1	Water	12/13/13 11:35	12/17/13 10:40
560-44354-2	MW-2	Water	12/13/13 11:30	12/17/13 10:40
560-44354-3	MW-3	Water	12/13/13 11:40	12/17/13 10:40
560-44354-4	MW-5	Water	12/13/13 11:25	12/17/13 10:40

[illegible]

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-44354-1

SDG Number: December 2013

Login Number: 44354

List Number: 1

Creator: Rood, Vivian R

List Source: TestAmerica Corpus Christi

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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.	True	
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	
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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	