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JUNE 2011 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS HOWELL K No. 1
SAN JUAN COUNTY, NEW MEXICO

API# 30-045-09313

NMOCD# TBD

Prepared For:

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1.0 INTRODUCTION

This report presents the results of a quarterly groundwater monitoring event conducted by Conestoga-Rovers & Associates (CRA) on June 23, 2011, at the ConocoPhillips Howell K No. 1 site, located on BLM land, approximately ½ mile southeast of Navajo Lake State Park and 10 miles east of Aztec in Unit Letter K, Section 21, Township 30N, Range 8W of San Juan County, New Mexico (Site). The Site consists of a gas well and associated equipment and installations. The location and general features of the Site are shown on **Figures 1** and **2**, respectively.

1.1 BACKGROUND

The environmental investigation at the Site began in August 2005 with the excavation of approximately 4,000 cubic yards of hydrocarbon impacted soil from an area southwest of the Howell K No. 1 wellhead. The hydrocarbon impacted soils were discovered in the area during below grade tank removal activities. The final dimensions of the excavation were 70 feet by 50 feet by 36 feet deep. Groundwater was encountered at a depth of approximately 34 feet below ground surface (bgs). Once this extent had been reached, the excavation was stopped due to the inability of the equipment to operate safely; however, the limits of the hydrocarbon impact had not been delineated. The excavation was backfilled with clean soil. In March 2006, one groundwater monitor well (MW-1) was installed by Envirotech in the general area of the backfilled excavation. The location of this well is shown on **Figure 2**.

Due to the transition of Site consulting responsibilities from Lode Star LLC of Farmington, NM, to Tetra Tech, following the acquisition of Burlington Resources by ConocoPhillips Company in March 2006, groundwater monitoring was not performed at the Site in March and June 2007. Tetra Tech began sampling groundwater at the Howell K No. 1 site in November of 2007 using MW-1 and continued to do so until August of 2008, when 3 additional monitor wells were installed at the Site by WDC Exploration and Wells of Peralta, NM under Tetra Tech supervision. Additional wells were installed in response to a request by the New Mexico Oil Conservation Division (NMOCD) for Site characterization and enhanced laboratory analyses. This request was communicated to Tetra Tech during an April 2008 meeting conducted in Santa Fe, New Mexico with Glenn Von Gonten, NMOCD Environmental Bureau Hydrologist. Groundwater Monitor Well MW-2 was installed upgradient of MW-1 and Monitor Wells MW-3 and MW-4 were installed downgradient of

MW-1 (**Figure 2**). A generalized geologic cross section was compiled using subsurface data collected from each boring location during installation of Monitor Wells MW-2, MW-3 and MW-4. Monitor Wells MW-2 and MW-4 are represented on the cross section which can be seen as **Figure 3**. October 2008 marked the first quarterly groundwater monitoring event to include all 4 monitor wells for analysis at the Site. On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to CRA of Albuquerque, NM. A summary of the Howell K No. 1 site history can be seen in **Table 1**.

2.0 GROUNDWATER MONITORING SUMMARY, METHODOLOGY, AND ANALYTICAL RESULTS

2.1 GROUNDWATER MONITORING SUMMARY

Quarterly groundwater sampling was conducted by CRA on June 23, 2011. This represents the second quarter of monitoring since BTEX constituent monitoring was discontinued. The groundwater sampling event included samples from Monitor Wells MW-1, MW-2, MW-3, and MW-4. Groundwater levels were measured in each Site monitor well prior to sampling and can be found in **Table 2**; however, groundwater elevations for MW-1 cannot be calculated due to the gradual, continuous, upward shifting of the PVC well casing. The shifting of the PVC casing of MW-1 is likely due to the proximity of MW-1 to the 2005, below-grade tank removal excavation and the settling and shifting of the fill material in this area. Groundwater elevations for the other monitor wells are calculated from top of casing elevations, which were derived from survey data collected from each Site monitor well by Tetra Tech on August 14, 2008. The groundwater flow direction is to the west based on groundwater elevation data collected on June 23, 2011 from MW-2, MW-3, and MW-4, and as seen on **Figure 4.**

2.2 GROUNDWATER MONITORING METHODOLOGY

During the sampling event, each monitor well was either purged of three casing volumes of water or was purged until groundwater parameters had stabilized. Measured groundwater parameters included: temperature, pH, conductivity, total dissolved solids (TDS), oxidation-reduction potential (ORP) and dissolved oxygen (DO), and were collected using a YSI 556 multi-parameter sonde. A 0.5-inch clear, polyethylene, dedicated bailer was used to purge and to collect the groundwater samples from MW-1. A 1.5-inch clear, polyethylene, dedicated bailer was used to purge and to collect the groundwater samples from MW-2, MW-3 and MW-4. The purge water generated during the event was disposed of in the produced water tank located on Site (**Figure 2**). The groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped with chain-of-custody documentation to Accutest Laboratories in Houston, Texas. All groundwater samples collected were analyzed for dissolved iron and dissolved manganese by EPA Method 6010B, as well as fluoride and sulfate by EPA method 300.0. The dissolved metals samples were collected in unpreserved containers supplied by the laboratory and were filtered and preserved by laboratory personnel prior to analysis for dissolved metals.

2.3 GROUNDWATER MONITORING ANALYTICAL RESULTS

The New Mexico Water Quality Control Commission (NMWQCC) mandates that groundwater quality in New Mexico be protected, and has issued groundwater quality standards in Title 20, Chapter 6, Part 2, Section 3103 of the New Mexico Administrative Code (20.6.2.3103 NMAC). Groundwater quality standards have been set for the protection of human health, domestic water supply, and irrigation use. Exceedence of NMWQCC groundwater quality standards in Site monitor wells are discussed below.

Samples collected from MW-1, MW-2, MW-3, and MW-4 on June 23, 2011 were not analyzed for BTEX constituents, which have either been below laboratory detection limits or NMWQCC standards since groundwater sampling began. **Table 3** lists the analytical results from groundwater sampling completed during June 2011. Groundwater sampling field forms showing field parameters can be found in **Appendix A** and the corresponding laboratory analytical reports including quality control summaries can be found in **Appendix B**.

- **Fluoride**
  - The NMWQCC domestic water supply groundwater quality standard for fluoride is 1.6 mg/L. Groundwater samples collected in June 2011 from Monitor Well MW-4 exceeded this standard with a concentration of 2.4 mg/L.

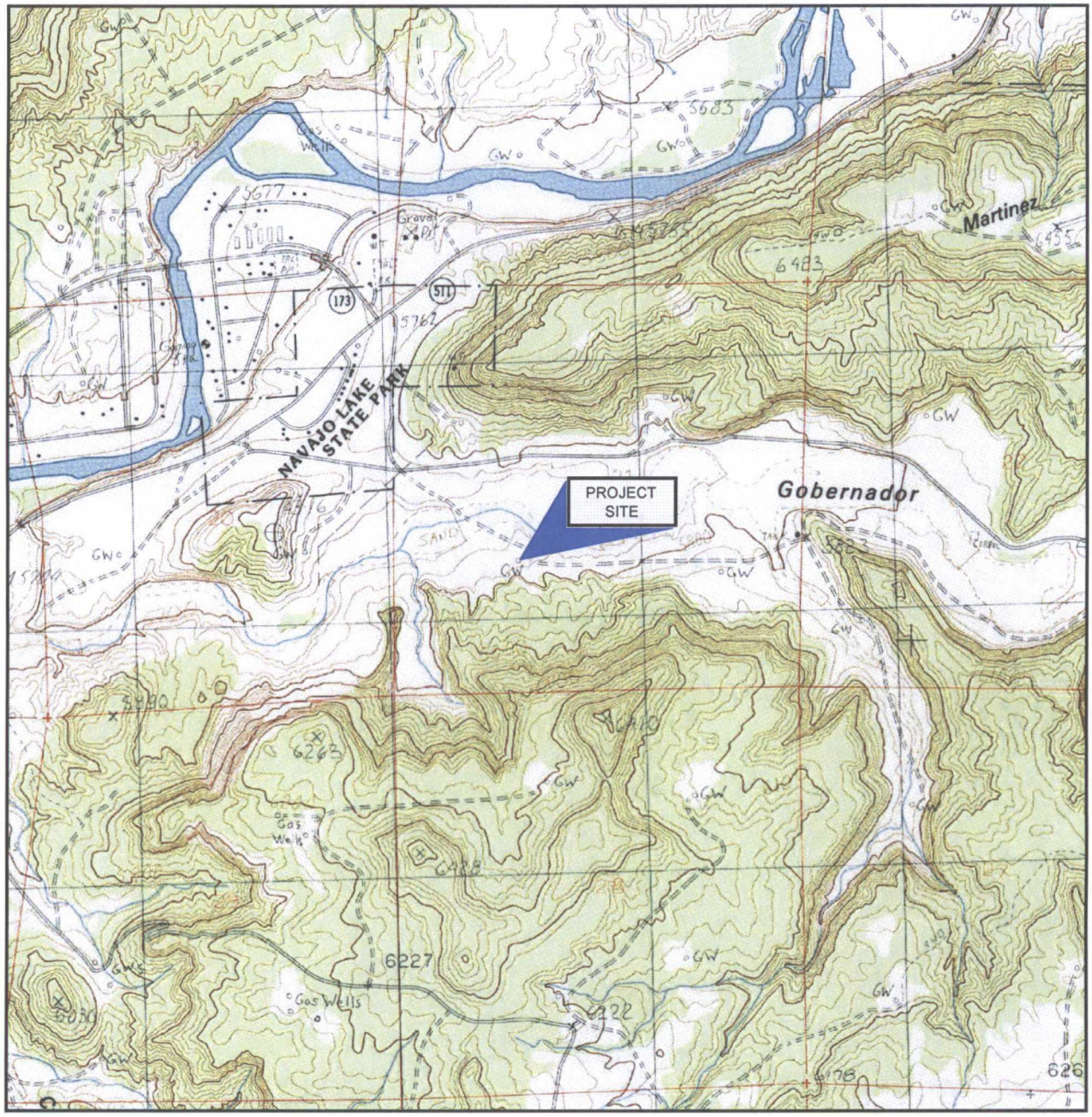
- **Sulfate**
  - The groundwater quality standard for sulfate is 600 mg/L. Groundwater samples collected in June 2011 from Monitor Wells MW-1, MW-2, MW-3 and MW-4 were found to contain sulfate at concentrations of 2,970 mg/L, 1,990 mg/L, 2,190 mg/L, and 4,400 mg/L, respectively.

- **Dissolved Manganese**
  - The groundwater quality standard for dissolved manganese is 0.2 mg/L. Groundwater samples collected in June 2011 from Monitor Wells MW-1, MW-3 and MW-4 were found to contain dissolved manganese at concentrations of 10.7 mg/L, 0.846 mg/L, and 11.1 mg/L, respectively.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The June 2011 monitoring event represents the second quarter of groundwater monitoring with BTEX analysis discontinued; however, CRA recommends monitoring of fluoride, sulfate, dissolved manganese, and dissolved iron on an annual basis until concentrations of these constituents are below NMWQCC standards, appear stable, or reach regional background levels.

FIGURES



SOURCE: USGS 7.5 MINUTE QUAD
"ARCHULETA, NEW MEXICO" DATED 1985

N

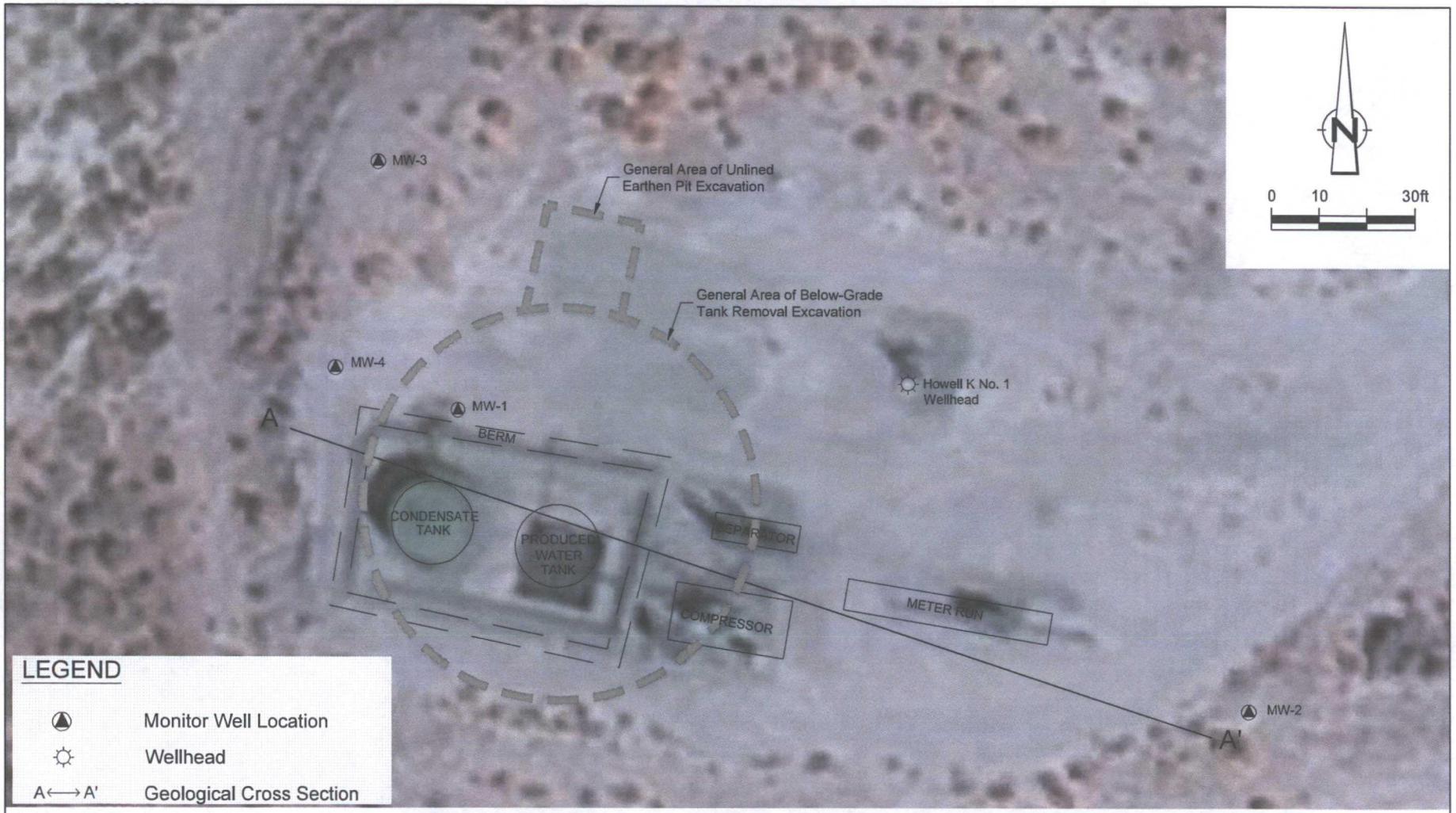
0 1000 2000ft

Figure 1

SITE VICINITY MAP
HOWELL K NO. 1, NATURAL GAS WELL SITE
UNIT K. SECTION 21, T30N-R8W, SAN JUAN COUNTY, N.M.
ConocoPhillips Company

CRA

074928-95(002)GN-DL004 DEC 6/2011



ConocoPhillips high resolution aerial imagery 2008.

Figure 2

SITE PLAN
HOWELL K NO. 1 NATURAL GAS WELL SITE
UNIT LETTER K, SECTION 21, T30N-R8W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

074928-95(002)GN-DL001 DEC 6/2011

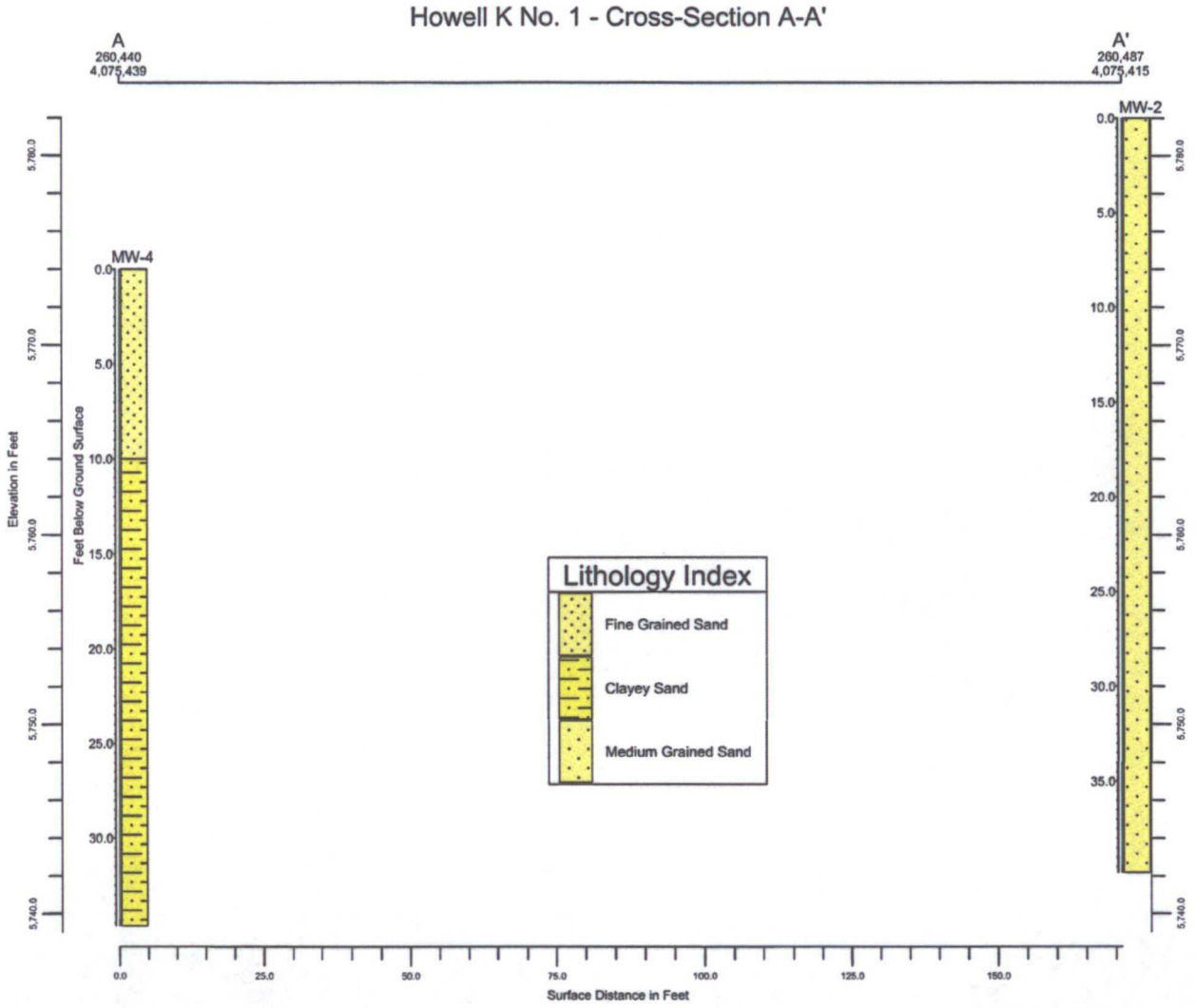


Figure 3

GEOLOGICAL CROSS SECTION
HOWELL K NO. 1 NATURAL GAS WELL SITE
UNIT LETTER K, SECTION 21, T30N-R8W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

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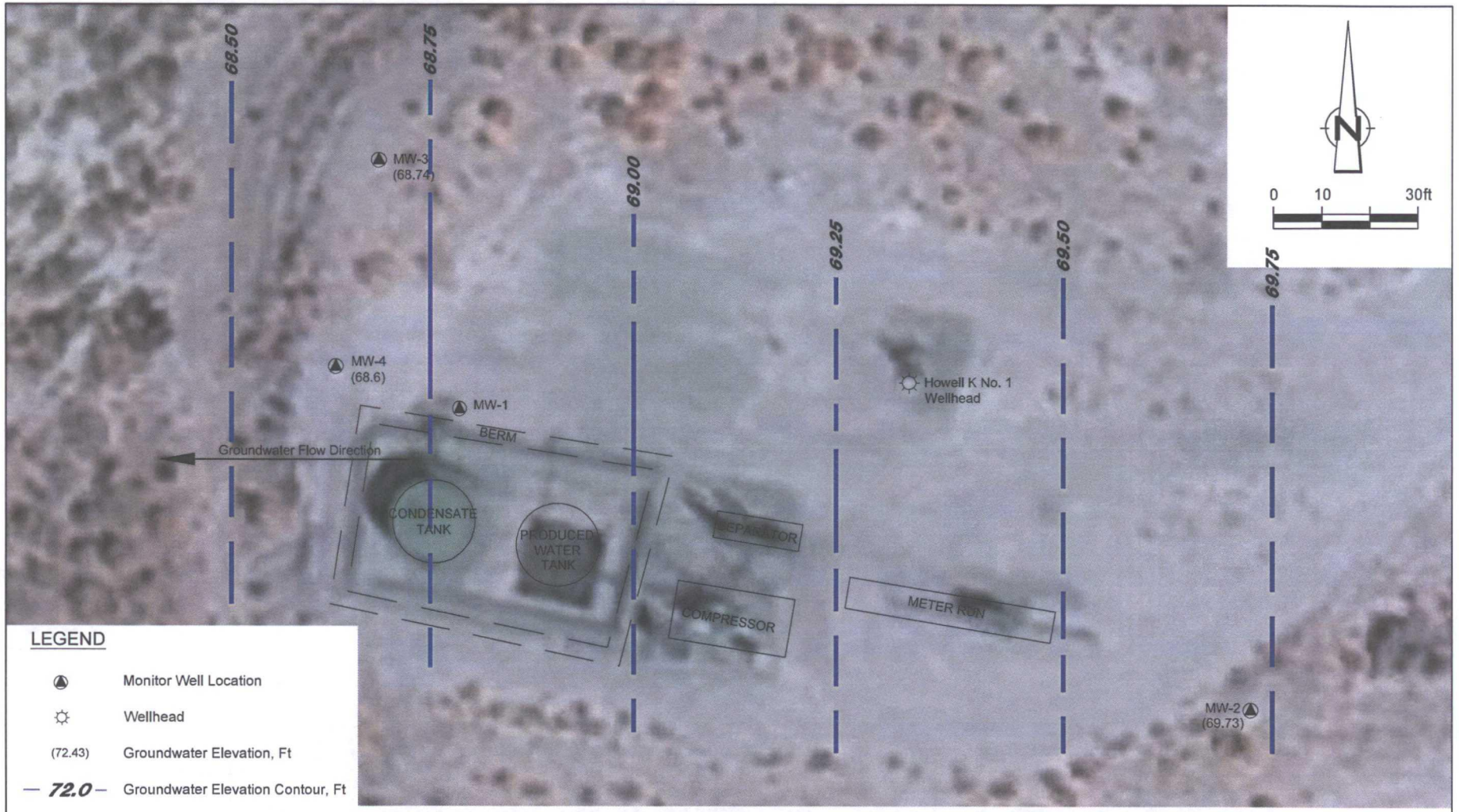

Figure 4

JUNE 2011 GROUNDWATER POTENTIOMETRIC SURFACE MAP
HOWELL K NO. 1 NATURAL GAS WELL SITE
UNIT LETTER K, SECTION 21, T30N-R8W, SAN JUAN COUNTY, NEW MEXICO
ConocoPhillips Company

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TABLES

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
SAN JUAN COUNTY, NEW MEXICO
HOWELL K NO. 1

Date/Time Period	*Event/Action*	*Description/Comments*
July 26, through August 18, 2005	Initial Site Assessment	Environmental investigation began with the excavation of approximately 4000 cubic yards of impacted soil from an area southwest of the Howell K No.1 well head. Impacted soils were discovered during the removal activities of a below grade tank. Dimensions of the excavation were approximately 70 feet long by 50 feet wide by 36 feet deep. Groundwater was encountered at approximately 34 feet and soils were still impacted at 36 feet deep, the point at which excavation machinery was stopped at the practical limit for safe operation. The total verticle extent of hydrocarbon impacts were not completely deliniated. Soil was treated with 600 total gallons of potassium permanganate solution. The excavation area was backfilled with clean soil.
March 10, 2006	Groundwater monitor well installation	One ground water monitor well, MW-1, was installed in the center of the backfilled excavation by Envirotech. Total depth of well was set at 35 feet.
March 31, 2006	Site Transfer	ConocoPhillips Company completed acquisition of Burlington Resources.
March and June 2007	Groundwater monitoring not performed	After the acquisition of Burlington Resources by ConocoPhillips, consulting responsibilities were transferred from Lode Star LLC of Farmington New Mexico to Tetra Tech of Albuquerque. Due to the transition, first and second quarter sampling of 2007 was not performed.
November 9, 2007 through March 19, 2008	Groundwater monitoring	Tetra Tech began sampling the Howell K No. 1 site quarterly in November of 2007. Groundwater was sampled from MW-1 and was analyzed for BTEX constituents. No constituents were detected at levels that exceeded the NMWQCC standards at any point during this period.
April 1, 2008	Additional Monitoring Requested by OCD	Oil Conservation Division of NM Energy, Minerals, and Resources Dept. indicates additional investigation and sampling is necessary for closure consideration during a meeting with Glenn Von Gonten.
July 23, 2008	Groundwater monitoring postponed	Groundwater monitoring of MW-1 was postponed after it was found that there was an obstruction caused by settling and shifting of the MW-1 casing. It was determined that the obstruction could be avoided by using a smaller bailer to collect samples. Sampling was postponed and was set to follow upcoming monitor well installation so that proper sampling materials could be used.
August 13 and 14, 2008	Groundwater monitor well installation and groundwater monitoring	Three additional groundwater monitor wells (MW-2, MW-3 and MW-4) were installed by WDC and overseen by Tetra Tech. MW-2 was installed upgradient of MW-1. Both MW-3 and MW-4 were installed downgradient of MW-1. All wells were developed by purging approximately 80 gallons of fluid using a surge block and a purge pump. A sample was collected from MW-1 on August 14th since sampling could not be done in July of 2008. A 1/2 inch disposable bailer was used to avoid obstruction in MW-1. Sample was analyzed for BTEX constituents. All constituents were below NMWQCC standards.
October 24, 2008	Groundwater monitoring	Third quarter 2008 groundwater monitoring was completed and was the first quarter of sampling to include all four monitor wells on site. A baseline suite was completed including major ions, total metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) including BTEX, diesel range organics, and gasoline range organics. All BTEX constituents were below NMWQCC standards. All four wells were above standard for sulfate.

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
SAN JUAN COUNTY, NEW MEXICO
HOWELL K NO. 1

Date/Time Period	*Event/Action*	*Description/Comments*
January 30, 2009	4th quarter 2008 groundwater monitoring	Tetra Tech conducted fourth quarter 2008 groundwater monitoring at the site for BTEX constituents in all four monitor wells. All wells are below NMWQCC standards for BTEX .
September 25,2009	2009 annual groundwater monitoring	Tetra Tech conducted 2009 annual groundwater monitoring of MW-2, MW-3 and MW-4 for BTEX, dissoved iron, dissolved manganese, sulfate, and fluoride. All three wells were below NMWQCC standards for BTEX. All three wells were above standard for sulfate. Dissolved manganese was above standard in MW-3 and MW-4 and flouride was above standard in MW-4. Dissolved metals analyses conducted for the first time since standards are based on dissolved metals testing. OCD concurred, allowing total metals testing to be discontinued.
October 18, 2009	Groundwater monitoring	Tetra Tech conducted 2009 annual groundwater monitoring of MW-1 for BTEX, dissoved iron, dissolved manganese, sulfate, and fluoride. MW-1 was below NMWQCC standards for BTEX. Sulfate, dissolved manganese and dissolved iron were above standard in MW-1.
December 15, 2010	Groundwater monitoring	Tetra Tech conducted quarterly groundwater monitoring at the site for BTEX, dissolved iron, dissolved manganese, sulfate and flouride. All four monitor wells are below NMWQCC standards for BTEX . All four monitor wells were above standard for sulfate. MW-1, MW-3 and MW-4 were above standard for dissolved manganese and MW-3 and MW-1 were also above standard for dissolved iron.
March 30, 2010	Groundwater monitoring	Tetra Tech conducted quarterly groundwater monitoring at the site for BTEX, dissolved iron, dissolved manganese, and sulfate. All four monitor wells are below NMWQCC standards for BTEX . All four monitor wells were above standard for sulfate. MW-1, MW-3 and MW-4 were also above standard for dissolved manganese.
June 8, 2010	Groundwater monitoring	Tetra Tech conducted quarterly groundwater monitoring at the site for BTEX, dissolved iron, dissolved manganese, and sulfate. All four monitor wells are below NMWQCC standards for BTEX . All four monitor wells were above standard for sulfate. MW-1, MW-3 and MW-4 were also above standard for dissolved manganese . MW-1 was also above standard for iron.
September 23,2010	Groundwater monitoring	Tetra Tech conducted quarterly groundwater monitoring at the site for BTEX, dissolved iron, dissolved manganese, fluoride and sulfate. All four monitor wells are below NMWQCC standards for BTEX . All four monitor wells were above standard for sulfate. MW-1, MW-3 and MW-4 were also above standard for dissolved manganese . MW-1 was also above standard for iron.
December 15,2010	Groundwater monitoring	Tetra Tech conducted quarterly groundwater monitoring at the site for BTEX, dissolved iron, dissolved manganese, fluoride and sulfate. MW-3 was observed to be dry during this monitoring event, which was likely due to an interface probe malfunction. MW-1, MW-2 and MW-4 were sampled. All three sampled monitor wells are below NMWQCC standards for BTEX . MW-1 and MW-4 were above the standards for sulfate, dissolved manganese, and dissolved iron. Monitor well MW-4 was also found to be above the standard for fluoride.
March 15, 2011	Groundwater monitoring	First quarter of groundwater monitoring with BTEX analysis discontinued; MW-1, MW-2, MW-3, and MW-4 were sampled and analyzed for dissolved iron, dissolved manganese, fluoride and sulfate.
June 15, 2011	Transfer of site consulting responsibilities	On June 15, 2011, site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to Conestoga-Rovers & Associates (CRA) of Albuquerque, NM.
June 23, 2011	Groundwater monitoring	Second quarter of groundwater monitoring with BTEX analysis discontinued; MW-1, MW-2, MW-3, and MW-4 were sampled and analyzed for dissolved iron, dissolved manganese, fluoride and sulfate.

TABLE 2

MONITORING WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
MARCH 2006 - JUNE 2011
CONOCOPHILLIPS COMPANY
SAN JUAN COUNTY, NEW MEXICO
HOWELL K NO 1

Well ID	*Total Depth (ft below TOC)*	*Elevation**	*Screen Interval (ft bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level*
MW-1	37.47	97.84	23-38	3/22/2006	28.54	69.3
				6/21/2006	29.15	68.69
				10/19/2006	27.83	70.01
				12/12/2006	28.22	69.62
				3/1/2007	NS	--
				6/21/2007	NS	--
				11/9/2007	29.03	68.81
				1/15/2008	28.34	69.5
				3/19/2008	NM	NM
				7/23/2008	28.46	69.38
				10/24/2008	29.91	67.93
				1/30/2009	28.37	69.47
				9/25/2009	29.95	67.89
				10/18/2009	29.97	67.87
				12/15/2009	29.51	(1)
				3/30/2010	28.18	(1)
				6/8/2010	28.38	(1)
				9/23/2010	29.51	(1)
				12/15/2010	28.82	(1)
				3/15/2011	28.51	(1)
				6/23/2011	28.92	(1)
MW-2	39.81	95.28	25-40	10/24/2008	25.74	69.54
				1/30/2009	24.74	70.54
				9/25/2009	26.48	68.8
				12/15/2009	25.97	69.31
				3/30/2010	24.67	70.61
				6/8/2010	24.84	70.44
				9/23/2010	26.38	68.9
				12/15/2010	25.68	69.6
				3/15/2011	25.05	70.23
				6/23/2011	25.55	69.73

TABLE 2

MONITORING WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
MARCH 2006 - JUNE 2011
CONOCOPHILLIPS COMPANY
SAN JUAN COUNTY, NEW MEXICO
HOWELL K NO 1

MW-3	37.47	95.44	23-38	10/24/2008	26.95	68.49
				1/30/2009	25.92	69.52
				9/25/2009	27.57	67.87
				12/15/2009	27.05	68.39
				3/30/2010	25.79	69.65
				6/8/2010	26.02	69.42
				9/23/2010	27.35	68.09
				12/15/2010	DRY	NM
				3/15/2011	26.19	69.25
				6/23/2011	26.7	68.74
MW-4	34.66	95.36	20-35	10/24/2008		NM
				1/30/2009	26	69.36
				9/25/2009	27.64	67.72
				12/15/2009	27.14	68.22
				3/30/2010	25.87	69.49
				6/8/2010	26.09	69.27
				9/23/2010	27.31	68.05
				12/15/2010	26.75	68.61
				3/15/2011	26.26	69.1
				6/23/2011	26.76	68.6

Notes:

1. *Elevation relative to an arbitrary reference elevation of 100 ft.
2. ft = Feet
3. TOC = Top of casing
4. NS = Not sampled
5. NM = Not measured
6. bgs = below ground surface
7. (1) Groundwater elevations can not be calculated accurately due to continual upward shifting of the PVC casing (see text of section 2.1, Monitoring Summary, of this report for more information)

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
MARCH 2006 - JUNE 2011
CONOCOPHILLIPS COMPANY
SAN JUAN COUNTY, NEW MEXICO
HOWELL K NO 1

Well ID	Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Iron (dissolved) (mg/L)	Iron (mg/L)	Manganese (dissolved) (mg/L)	Manganese (mg/L)
MW-1	3/22/2006	<	<	0.001	0.002	--	--	--	--	--	--
	6/21/2006	0.0014	0.0014	<	0.0106	--	--	--	--	--	--
	10/19/2006	<	<	<	0.0011	--	--	--	--	--	--
	12/12/2006	<	0.0005	0.0004	0.0021	--	--	--	--	--	--
	11/9/2007	<0.0005	<0.0007	<0.0008	<0.0009 J	--	--	--	--	--	--
	1/15/2008	<0.0005	<0.0007	<0.0008	<0.0008	--	--	--	--	--	--
	3/19/2008	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
	8/14/2008	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
	10/24/2008	<0.0005	<0.0005	<0.0005	<0.0005	<2.0	2390	--	32	--	13.40
	1/30/2009	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
	10/18/2009	<0.0005	<0.0005	<0.0005	<0.0005	0.88	3840	2.24	--	17.40	--
	12/15/2009	<0.0005	<0.0005	<0.0005	<0.0005	<50	3290	1.70	--	16.50	--
	3/30/2010	<0.0005	<0.0005	<0.0005	<0.0005	--	2950	0.87	--	14.90	--
	6/8/2010	<0.0005	<0.0005	<0.0005	<0.0005	--	2570	11.20	--	14.70	--
	9/23/2010	<0.001	<0.001	<0.001	<0.001	<0.5	2740	4.43	--	13.4	--
	12/15/2010	<0.001	<0.001	<0.001	<0.001	<0.5	2230	9.72	--	11.1	--
	3/15/2011	--	--	--	--	0.654	2360	20	--	11.4	--
	6/23/2011	--	--	--	--	<0.50	2970	<0.1	--	10.7	--
MW-2	10/24/2008	<0.0005	<0.0005	<0.0005	<0.0005	<2	1480	--	3	--	0.23
	1/30/2009	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
	9/25/2009	<0.0005	<0.0005	<0.0005	<0.0005	1.09	1700	<0.02	--	<0.005	--
	12/15/2009	<0.0005	<0.0005	<0.0005	<0.0005	<100	1570	<0.02	--	<0.005	--
	3/30/2010	<0.0005	<0.0005	<0.0005	<0.0005	--	1410	<0.02	--	0.14	--
	6/8/2010	<0.0005	<0.0005	<0.0005	<0.0005	--	1460	0.0544	--	0.00930	--
	9/23/2010	<0.001	<0.001	<0.001	<0.001	<0.5	1760	<0.02	--	<0.005	--
	12/15/2010	<0.001	<0.001	<0.001	<0.001	1.01	1890	<0.02	--	<0.005	--
	3/15/2011	--	--	--	--	1.21	1680	<0.02	--	0.0096	--
	6/23/2011	--	--	--	--	1.3	1990	<0.1	--	<0.015	--
MW-3	10/24/2008	<0.0005	<0.0005	<0.0005	<0.0005	<2	1480	--	3	--	1.31
	1/30/2009	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
	9/25/2009	<0.0005	<0.0005	<0.0005	<0.0005	1.00	1840	<0.02	--	0.38	--
	12/15/2009	<0.0005	<0.0005	<0.0005	<0.0005	<50	2500	1.35	--	0.32	--
	3/30/2010	<0.0005	<0.0005	<0.0005	<0.0005	--	1890	<0.02	--	0.43	--
	6/8/2010	<0.0005	<0.0005	<0.0005	<0.0005	--	1630	0.0573	--	0.383	--
	9/23/2010	<0.001	<0.001	<0.001	<0.001	0.751	1960	<0.02	--	0.35	--
	3/15/2011	--	--	--	--	1.11	1890	<0.02	--	0.572	--
	6/23/2011	--	--	--	--	1.2	2190	<0.1	--	0.846	--
MW-4	10/24/2008	<0.0005	<0.0005	<0.0005	<0.0005	2.43	3400	--	3	--	7.79
	1/30/2009	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	--	--
	9/25/2009	<0.001	<0.001	<0.001	<0.001	2.47	3860	<0.02	--	7.80	--
	12/15/2009	<0.001	<0.001	<0.001	<0.001	<50	4540	0.03	--	7.40	--
	3/30/2010	<0.001	<0.001	<0.001	<0.001	< 0.001	3970	<0.02	--	7.83	--
	6/8/2010	<0.001	<0.001	<0.001	<0.001	< 0.001	3490	0.0607	--	7.97	--
	9/23/2010	<0.001	<0.001	<0.001	<0.001	1.81	3750	<0.02	--	9.73	--
	12/15/2010	0.0011	<0.001	<0.001	<0.001	2.47	4310	0.223	--	8.64	--
	3/15/2011	--	--	--	--	2.76	3990	0.522	--	11	--
	6/23/2011	--	--	--	--	2.4	4400	0.492	--	11.1	--
NMWQCC Groundwater Quality Standards		0.01	0.75	0.75	0.62	1.6	600	1	NE	0.2	NE

Notes:
1. MW = monitoring well
2. NMWQCC = New Mexico Water Quality Control Commission
3. Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
4. mg/L = milligrams per liter (parts per million)
5. < 1.0 = Below laboratory detection limit of 1.0 mg/L
6. NE = not established

APPENDIX A

JUNE 2011 QUARTERLY GROUNDWATER SAMPLING FIELD FORMS

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Howell K-1 JOB# 074928

SAMPLE ID: GW-74928-062311-PG-04 WELL# MW-1

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6.23.11	6.23.11	1705	0.8848	2.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 28.92 (feet) WELL ELEVATION 97.84 (feet)

WELL DEPTH 34.45 (feet) GROUNDWATER ELEVATION — (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: ODOR: COLOR: SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE / WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS: No parameters collected due to low purge volume. Groundwater elevation cannot be calculated accurately due to continual upward shifting of PVC casing.

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6.23.11 Abbie Brown Abbie Brown

DATE PRINT SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Howell K-1 JOB# 074928

SAMPLE ID: GW-74928-062311-PG-01 WELL# MW-2

WELL PURGING INFORMATION

6.23.11	6.23.11	1610	2.24	6.75
PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X= PURGING DEVICE OTHER (SPECIFY)
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X= PURGING MATERIAL OTHER (SPECIFY)
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 25.55 (feet) WELL ELEVATION 95.28 (feet)

WELL DEPTH 39.6 (feet) GROUNDWATER ELEVATION 69.73 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.42 (°C)	6.83 (std)	(g/L)	7290 (µS/cm)	35.9 (mV)	5.75 (gal)
14.73 (°C)	6.82 (std)	(g/L)	7155 (µS/cm)	35.9 (mV)	6.25 (gal)
14.46 (°C)	6.78 (std)	(g/L)	7105 (µS/cm)	37.3 (mV)	6.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: COLOR: tan SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE / WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS: Sunny and clear

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6.23.11 (DATE) Cassie Brown (PRINT) (SIGNATURE)

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Howell K-1 JOB# 074928

SAMPLE ID: GW-74928-062311-PG-02 WELL# MW-3

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6·23·11	6·23·11	1635	1.64	4.5

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE	TEFLON/POLYPROPYLENE	
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 26.7 (feet) WELL ELEVATION 95.44 (feet)

WELL DEPTH 37.0 (feet) GROUNDWATER ELEVATION 68.74 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.23 (°C)	6.93 (std)	(g/L)	8100 (µS/cm)	37.8 (mV)	3.5 (gal)
15.15 (°C)	6.91 (std)	(g/L)	8079 (µS/cm)	39.2 (mV)	4.0 (gal)
15.14 (°C)	6.90 (std)	(g/L)	8072 (µS/cm)	39.5 (mV)	4.5 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: COLOR: tan SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE / WINDY Y/(N) PRECIPITATION Y/(N) (IF Y TYPE)

SPECIFIC COMMENTS: Sunny and clear

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6·23·11 DATE | Cassie Brown PRINT | Cassie Brown SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Howell K-1 JOB# 074928

SAMPLE ID: GW-74928-062311-PG-03 WELL# MW-4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	SAMPLE TIME (24 HOUR)	WATER VOL. IN CASING (GALLONS)	ACTUAL VOL. PURGED (GALLONS)
6·23·11	6·23·11	1700	1.24	3.75

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

SAMPLING EQUIPMENT.....DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	G	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X= PURGING DEVICE OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	G	C - BLADDER PUMP	F - DIPPER BOTTLE	X - OTHER	X= SAMPLING DEVICE OTHER (SPECIFY)
PURGING MATERIAL	E	A - TEFLON	D - PVC		X= PURGING MATERIAL OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING MATERIAL	E	C - POLYPROPYLENE	X - OTHER		X= SAMPLING MATERIAL OTHER (SPECIFY)
PURGE TUBING	C	A - TEFLON	D - POLYPROPYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	X= PURGE TUBING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE		
SAMPLING TUBING	C	C - ROPE	F - SILICONE	X - OTHER	X= SAMPLING TUBING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

DEPTH TO WATER 26.76 (feet) WELL ELEVATION 95.36 (feet)

WELL DEPTH 34.54 (feet) GROUNDWATER ELEVATION 68.6 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
15.36 (°C)	6.59 (std)	(g/L)	18428 (µS/cm)	-98.2 (mV)	3.0 (gal)
15.29 (°C)	6.57 (std)	(g/L)	18363 (µS/cm)	-99.7 (mV)	3.5 (gal)
15.22 (°C)	6.57 (std)	(g/L)	18465 (µS/cm)	-103.3 (mV)	3.75 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: COLOR: tan SHEEN Y/(N)

WEATHER CONDITIONS: TEMPERATURE / WINDY Y/(N) PRECIPITATION Y/(N) IF Y TYPE)

SPECIFIC COMMENTS: sunny and clear

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

6·23·11 (Erin) Brown (Erin) Brown

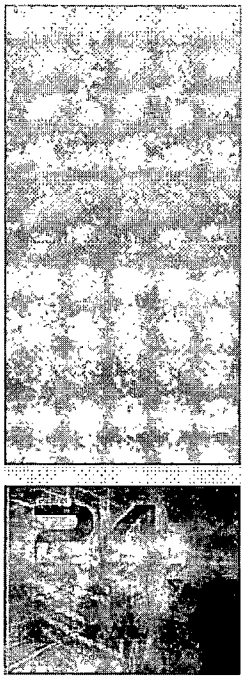
DATE PRINT SIGNATURE

APPENDIX B

JUNE 2011 QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORT

Gulf Coast
ACCUTEST
LABORATORIES

Reissue #1
08/24/11



Technical Report for

Conoco Phillips

Howell K-1

74928

Accutest Job Number: T79683

Sampling Date: 06/23/11

Report to:

Conestoga Rovers & Associates
6121 Indian School Rd. NE, Ste. 200
Albuquerque, NM 87110
keblanchard@craworld.com; cmathews@craworld.com;
cbrown@craworld.com
ATTN: Kelly Blanchard

Total number of pages in report: **28**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Erica Cardenas 713-271-4700

Certifications: TX (T104704220-10-3) AR (88-0756) AZ (AZ0769) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103)

Test results relate only to samples analyzed.

ACCUTEST Laboratories

Wednesday, August 24, 2011

Kelly Blanchard
Conestoga Rovers & Associates
6121 Indian School Rd. NE, Ste. 200
Albuquerque, NM 87110

RE: Accutest job T79683 Reissue

Dear Ms. Blanchard:

The final report for job number T79683 has been revised to report Manganese instead of Magnesium for the dissolved metals analysis. These edits have been incorporated into this revised report.

Accutest apologizes for any inconvenience this may have caused. Please feel free to contact me if I can be of further assistance.

Sincerely,

Erica Cardenas
Accutest Laboratories, GC

Sections: 1 2 3 4 5

Table of Contents

-1-

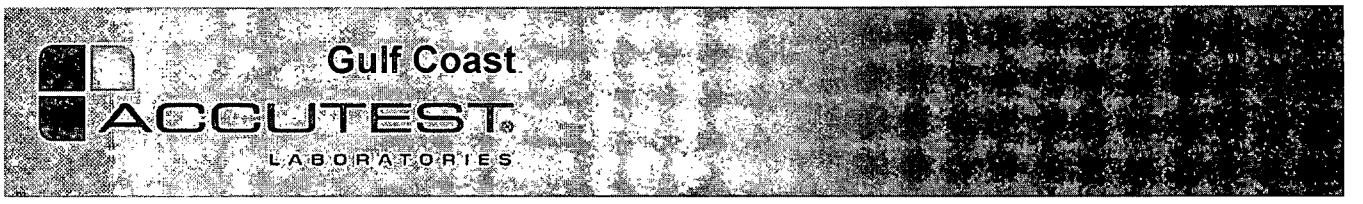
Sample Summary

Conoco Phillips

Job No: T79683

Howell K-1
Project No: 74928

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T79683-1	06/23/11	16:10	06/25/11	AQ	Ground Water	GW-74928-062311-PG-01
T79683-1F	06/23/11	16:10	06/25/11	AQ	Groundwater Filtered	GW-74928-062311-PG-01 DISSOLVED)
T79683-2	06/23/11	16:35	06/25/11	AQ	Ground Water	GW-74928-062311-PG-02
T79683-2F	06/23/11	16:35	06/25/11	AQ	Groundwater Filtered	GW-74928-062311-PG-02 (DISSOLVED)
T79683-3	06/23/11	17:00	06/25/11	AQ	Ground Water	GW-74928-062311-PG-03
T79683-3F	06/23/11	17:00	06/25/11	AQ	Groundwater Filtered	GW-74928-062311-PG-03 (DISSOLVED)
T79683-4	06/23/11	17:05	06/25/11	AQ	Ground Water	GW-74928-062311-PG-04
T79683-4F	06/23/11	17:05	06/25/11	AQ	Groundwater Filtered	GW-74928-062311-PG-04 (DISSOLVED)



Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-01		
Lab Sample ID:	T79683-1	**Date Sampled:**	06/23/11
Matrix:	AQ - Ground Water	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Fluoride	1.3	0.50	mg/l	1	07/04/11 19:32	ES	EPA 300/SW846 9056
Sulfate	1990	250	mg/l	500	07/05/11 01:46	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-01 DISSOLVED)		
Lab Sample ID:	T79683-1F	**Date Sampled:**	06/23/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	<100	100	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]
Manganese	<15	15	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5891
(2) Prep QC Batch: MP15156

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-02		
Lab Sample ID:	T79683-2	**Date Sampled:**	06/23/11
Matrix:	AQ - Ground Water	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Fluoride	1.2	0.50	mg/l	1	07/04/11 20:23	ES	EPA 300/SW846 9056
Sulfate	2190	250	mg/l	500	07/05/11 02:03	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-02 (DISSOLVED)		
Lab Sample ID:	T79683-2F	**Date Sampled:**	06/23/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	<100	100	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]
Manganese	846	15	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5891
(2) Prep QC Batch: MP15156

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-03		
Lab Sample ID:	T79683-3	**Date Sampled:**	06/23/11
Matrix:	AQ - Ground Water	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Fluoride	2.4	0.50	mg/l	1	07/04/11 21:14	ES	EPA 300/SW846 9056
Sulfate	4400	250	mg/l	500	07/05/11 02:20	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-03 (DISSOLVED)		
Lab Sample ID:	T79683-3F	**Date Sampled:**	06/23/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	492	100	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]
Manganese	11100	15	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5891
(2) Prep QC Batch: MP15156

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-04		
Lab Sample ID:	T79683-4	**Date Sampled:**	06/23/11
Matrix:	AQ - Ground Water	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Fluoride	< 0.50	0.50	mg/l	1	07/04/11 21:31	ES	EPA 300/SW846 9056
Sulfate	2970	250	mg/l	500	07/05/11 02:37	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74928-062311-PG-04 (DISSOLVED)		
Lab Sample ID:	T79683-4F	**Date Sampled:**	06/23/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/25/11
		Percent Solids:	n/a
Project:	Howell K-1		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	< 100	100	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]
Manganese	10700	15	ug/l	1	07/04/11	07/05/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5891
(2) Prep QC Batch: MP15156

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

ACCUTEST Laboratories

CHAIN OF CUSTODY

Accutest Gulf Coast/SPL Environmental
10165 Harwin Drive, Suite 150, Houston, TX 77036
TEL.713-271-4700 FAX: 713-271-4770
www.accutest.com

PAGE 1 OF 4

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: T79683

Client / Reporting Information

Company Name: ~~Tetra Tech, Inc.~~ CRA
Street Address: 6121 Indian School Rd. NE, Ste. 200
City: Albuquerque State: NM Zip: 87110
Project Contact: Kelly Blanchard E-mail: kblanchard@cravworld.com
Phone #: ~~505-884-0672~~ Fax #: ~~505-237-8440~~ 505-237-8656
Sampler(s) Name(s): Cassie Brown Phone #:

Project Information

Project Name: Howell K-1
Street:
City: State:
Project #: 74928
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)

Company Name: ConocoPhillips
Street Address: 1358 Phillips Bldg., 420 S. Keeler Ave.
City: Bartlesville State: OK Zip: 74004
Attention: Terry Lauck

Requested Analyses

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	Dissolved Mg, Fe	Fluoride, Sulfate	LAB USE ONLY
1	GW-74928-062311-PG-01	6-23-11	1610	GW	2						X							X	X	
2	GW-74928-062311-PG-02	6-23-11	1635	GW	2						X							X	X	
3	GW-74928-062311-PG-03	6-23-11	1700	GW	2						X							X	X	
4	GW-74928-062311-PG-04	6-23-11	1705	GW	2						X							X	X	

Turnaround Time (Business days)

- [ ] Standard
- [ ] 6 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*
- [ ] Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [x] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3 & 4)
- [ ] REDT1 (Level 3 & 4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

(*) ~~Al, B, Fe, As, Ba, Cd, Cr, Co, Cu, Pb, Mn, Mo, Ni, Se, Ag, Sr, Hg~~

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Cassie Brown	6-23-11 2300	1	2 FedEX	6/24/11 1055	2 ACCUTEST
3			3	4		4
5			5	Custody Seal #	Intact / Not Intact	Preserved where applicable / On Ice / Cooler Temp: 3.6

3.1

T79683: Chain of Custody
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ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: T79683 **Client:** CONOCO PHILLIPS **Project:** HOWELL K-1

Date / Time Received: 6/25/2011 **Delivery Method:** **Airbill #'s:** 486899904953

No. Coolers: **Therm ID:** **Temp Adjustment Factor:**

Cooler Temps (Initial/Adjusted):

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:			

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☑		☐	☐	☑	☐
2. Trip Blank listed on COC:	☐		☑	☐		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☐		☐	☑		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☑		☐	☐

Comments Accutest Trip Blank received in cooler with no VOA samples.

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Problem Resolution

Accutest Job Number: T79683

CSR: ERICA CARDENAS

Response Date: 6/28/2011

Response: LOGGED TB IN ON HOLD.

3.1

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ACCUTEST LABORATORIES

Sample Receipt Log

Job #: T79683 **Date / Time Received:** 6/25/2011 10:55:00 AM **Initials:** DARRELLH

Client: CONOCO PHILLIPS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	T79683-1	500 ml	1	1 BB	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-1	250 ml	2	3 A	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-2	500 ml	1	1 BB	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-2	250 ml	2	3 A	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-3	500 ml	1	1 BB	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-3	250 ml	2	3 A	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-4	500 ml	1	1 BB	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-4	250 ml	2	3 A	N/P	Note #2 - Preservative check not applicable.	110	4.1	-0.5	3.6
1	T79683-5	40 ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.1	-0.5	3.6
1	T79683-5	40 ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.1	-0.5	3.6

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Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

QC Batch ID: MP15156
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/04/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12		
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1		
Barium	200	.97	3.4		
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09		
Calcium	5000	7.4	25		
Chromium	10	.23	.27		
Cobalt	50	.15	.22		
Copper	25	1.1	5.9		
Iron	100	1.1	23	7.8	<100
Lead	3.0	1	1.8		
Lithium	300	2	2		
Magnesium	5000	7.7	7.9		
Manganese	15	.054	1.9	0.33	<15
Molybdenum	10	.39	.2		
Nickel	40	.69	1.4		
Potassium	5000	39	45		
Selenium	5.0	1.5	.98		
Silver	10	1.2	.24		
Sodium	5000	9.2	100		
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5		

Associated samples MP15156: T79683-1F, T79683-2F, T79683-3F, T79683-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

QC Batch ID: MP15156
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/04/11 07/04/11

Metal	T79629-1F Original	DUP	RPD	QC Limits	T79629-1F Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper									
Iron	37.1	40.1	7.8	0-20	37.1	47100	50000	94.1	80-120
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	46.0	46.3	0.7	0-20	46.0	434	400	97.0	80-120
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP15156: T79683-1F, T79683-2F, T79683-3F, T79683-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

QC Batch ID: MP15156
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/04/11

Metal	T79629-1F Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper						
Iron	37.1	47400	50000	94.7	0.6	20
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	46.0	432	400	96.5	0.5	20
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP15156: T79683-1F, T79683-2F, T79683-3F, T79683-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

QC Batch ID: MP15156
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/04/11

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron	48200	50000	96.4	80-120
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	395	400	98.8	80-120
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP15156: T79683-1F, T79683-2F, T79683-3F, T79683-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

QC Batch ID: MP15156
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 07/04/11

Metal	T79629-1F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron	37.1	16.2	56.2 (a)	0-10
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	46.0	50.8	10.6*(b)	0-10
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP15156: T79683-1F, T79683-2F, T79683-3F, T79683-4F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP13744/GN32668	0.50	0.0	mg/l	10	9.37	93.7	90-110%
Fluoride	GP13749/GN32674	0.50	0.0	mg/l	10	9.59	95.9	90-110%
Sulfate	GP13744/GN32668	0.50	0.0	mg/l	10	9.29	92.9	90-110%

Associated Samples:
Batch GP13744: T79683-1, T79683-2, T79683-3, T79683-4
Batch GP13749: T79683-1, T79683-2, T79683-3, T79683-4
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chloride	GP13744/GN32668	T79594-2	mg/l	66.9	66.7	0.3	0-20%
Fluoride	GP13749/GN32674	T79683-1	mg/l	1.3	1.2	8.0	0-20%
Sulfate	GP13744/GN32668	T79594-2	mg/l	164	169	3.0	0-20%

Associated Samples:
Batch GP13744: T79683-1, T79683-2, T79683-3, T79683-4
Batch GP13749: T79683-1, T79683-2, T79683-3, T79683-4
(*) Outside of QC limits

5.2.5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T79683
Account: CONOCO - Conoco Phillips
Project: Howell K-1

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP13744/GN32668	T79594-2	mg/l	66.9	200	265	99.1	80-120%
Fluoride	GP13749/GN32674	T79683-1	mg/l	1.3	10	10.9	96.0	80-120%
Sulfate	GP13744/GN32668	T79594-2	mg/l	164	200	369	102.5	80-120%

Associated Samples:
Batch GP13744: T79683-1, T79683-2, T79683-3, T79683-4
Batch GP13749: T79683-1, T79683-2, T79683-3, T79683-4
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits