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JUNE 2011 GWMR

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JUNE 2011 QUARTERLY GROUNDWATER MONITORING REPORT

CONOCOPHILLIPS SATEGNA No. 2E GAS WELL
SAN JUAN COUNTY, NEW MEXICO

API# 30-045-24060

NMOCD# TBD

Prepared For:

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1.0 INTRODUCTION

This report presents the results of the June 24, 2011 quarterly groundwater monitoring event conducted by Conestoga-Rovers & Associates (CRA) at the ConocoPhillips Company (ConocoPhillips) Sategna No. 2E gas well site (Site) located on private land within Section 21, Township 29N, Range 11W of Bloomfield, San Juan County, New Mexico (**Figure 1**). A Site detail map is included as **Figure 2**.

1.1 BACKGROUND

A historical timeline for the privately-owned Site is presented in **Table 1**, and is discussed in more detail below.

On November 24, 2008, approximately 8 barrels of condensate were released from the, condensate aboveground storage tank (AST). Notification of the release was given to the New Mexico Oil Conservation Division (NMOCD) by ConocoPhillips personnel using Form C-141. On November 25, 2008, Envirotech Inc. of Farmington, New Mexico (Envirotech) obtained grab soil samples from just outside the affected area for analysis of organic vapors. Results of this analysis were below NMOCD recommended action levels. Envirotech also used a hand auger to complete 2 soil borings to approximately 8 feet below ground surface (bgs), where groundwater was encountered. Two groundwater samples were submitted by Envirotech to an analytical laboratory for analysis of benzene, toluene, ethylbenzene and xylenes (BTEX). Analytical results revealed BTEX in concentrations below NMOCD action levels for these constituents.

On December 4, 2008, Envirotech returned to the Site and excavated an area measuring approximately 30 feet by 18 feet by 8 feet deep (**Figure 2**). Grab and composite soil samples were obtained from the bottom and sides of the excavation. The samples were analyzed for BTEX, total petroleum hydrocarbons (TPH), and chloride. Analytical results were below NMOCD action levels for BTEX. Two grab soil samples collected from below the above-grade and below-grade tanks exceeded the NMOCD action level for total TPH.

Groundwater seepage into the excavation was discovered on December 4, 2008. Subsequently, groundwater samples were collected from the excavation on December 5, 2008. The groundwater sample exceeded the New Mexico Water Quality Control Commission (NMWQCC) standards for benzene, toluene, and

xylenes. Groundwater was recovered from the bottom of the excavated area using a vacuum truck during the week of December 8, 2008. Once removed, further excavation took place and groundwater slowly seeped into the excavation; this process was repeated a total of 4 times. The first time water was recovered from the surface of the excavation, a hydrocarbon odor and free-phase, light non-aqueous phase liquid (LNAPL) were present. By the fourth and last event, neither the hydrocarbon odor nor free-phase LNAPL were present in the groundwater seepage. Each pumping event recovered approximately 30-60 barrels of liquid from the Site.

In January 2009, Tetra Tech conducted a site visit to determine proposed groundwater monitor well locations. Groundwater monitor wells were installed at the Site on March 4, 2009 and March 5, 2009. Tetra Tech initiated quarterly groundwater monitoring events with a baseline in April 2009.

Additional hydrocarbon soil impacts were discovered during relocation and reinstallation of production equipment in April 2009. Envirotech found an abandoned sewer line in the same location as hydrocarbon impacted soils while digging an exploratory trench between the wellhead and the proposed separator tank location (**Figure 2**). Trench work was halted and the excavated soils were stockpiled on site. Tetra Tech returned to the site on April 23 and 24, 2009 to oversee excavation of the hydrocarbon impacted soils from the vicinity of the trench (**Figure 2**). Photoionization detector readings in the field indicated levels below the NMOCD action level; however, lab results were above the NMOCD action level for TPH in samples collected from all four walls of the excavation. The bottom sample results were below NMOCD action levels. The excavation was backfilled and equipment was reinstalled before analytical results were available. A report detailing this activity, titled Soil Excavation and Sampling Report, was submitted to the NMOCD in July 2009.

Tetra Tech continued quarterly groundwater monitoring from April 2, 2009 to March 2011. The March 2011 Tetra Tech quarterly groundwater monitoring report recommended the discontinuation of sampling and analysis of BTEX for all Site monitor wells. On June 15, 2011, Site consulting responsibilities were transferred from Tetra Tech of Albuquerque, NM to CRA of Albuquerque, NM. Quarterly groundwater monitoring was continued by CRA on June 24, 2011. This report details the tenth consecutive quarterly monitoring event.

2.0 GROUNDWATER MONITORING METHODOLOGY AND ANALYTICAL RESULTS

2.1 GROUNDWATER MONITORING SUMMARY

Prior to collection of groundwater samples from Monitor Wells MW-1, MW-2 and MW-3, depth to groundwater was measured in each well using an oil/water interface probe. Results are displayed in **Table 2**.

The casings for Monitor Wells MW-1, MW-2, and MW-3 were surveyed in March 2009 using an arbitrary reference-elevation of 100 feet. The data obtained from the Site survey and from the June 24, 2011 sampling event were used to create a groundwater potentiometric surface map for the Site (**Figure 3**). Using these data, it was determined that the groundwater flow direction at the Site continues to be to the southwest. A generalized geologic cross section for the Site is presented as **Figure 4**.

2.2 GROUNDWATER SAMPLING METHODOLOGY

During the groundwater monitoring event Site monitor wells were purged of at least 3 casing volumes of groundwater using a 1.5-inch diameter, polyethylene disposable bailer. While bailing each well, groundwater parameters were collected using a YSI 556 multi-parameter sonde and results were recorded on a Well Sampling Field Information Form (**Appendix A**). Collected groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain-of-custody documentation to Accutest Laboratories of Houston, Texas.

Groundwater samples were analyzed for dissolved manganese by Environmental Protection Agency (EPA) Method 6010B, sulfate by EPA method 300/SW846 9056, and Total Dissolved Solids (TDS) by Standard Method (SM) 2540C. Analytical results are displayed in **Table 3**.

The June 24, 2011 sampling event represents the first quarter in which BTEX analysis was discontinued.

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. Exceedences of NMWQCC groundwater quality standards in Site monitor wells are discussed below.

- **Total Dissolved Solids**
  - The NMWQCC domestic water supply groundwater quality standard for TDS is 1,000 mg/L; groundwater samples collected from Monitor Wells MW-1, MW-2 and MW-3 were found to contain TDS concentrations of 2,450mg/L, 2,550 mg/L, and 2,860 mg/L, respectively.

- **Dissolved Manganese**
  - The NMWQCC domestic water supply groundwater quality standard for manganese is 0.2 mg/L; groundwater samples collected from Monitor Wells MW-1 and MW-3 were found to contain manganese concentrations of 0.574 and 1.7 mg/L, respectively.

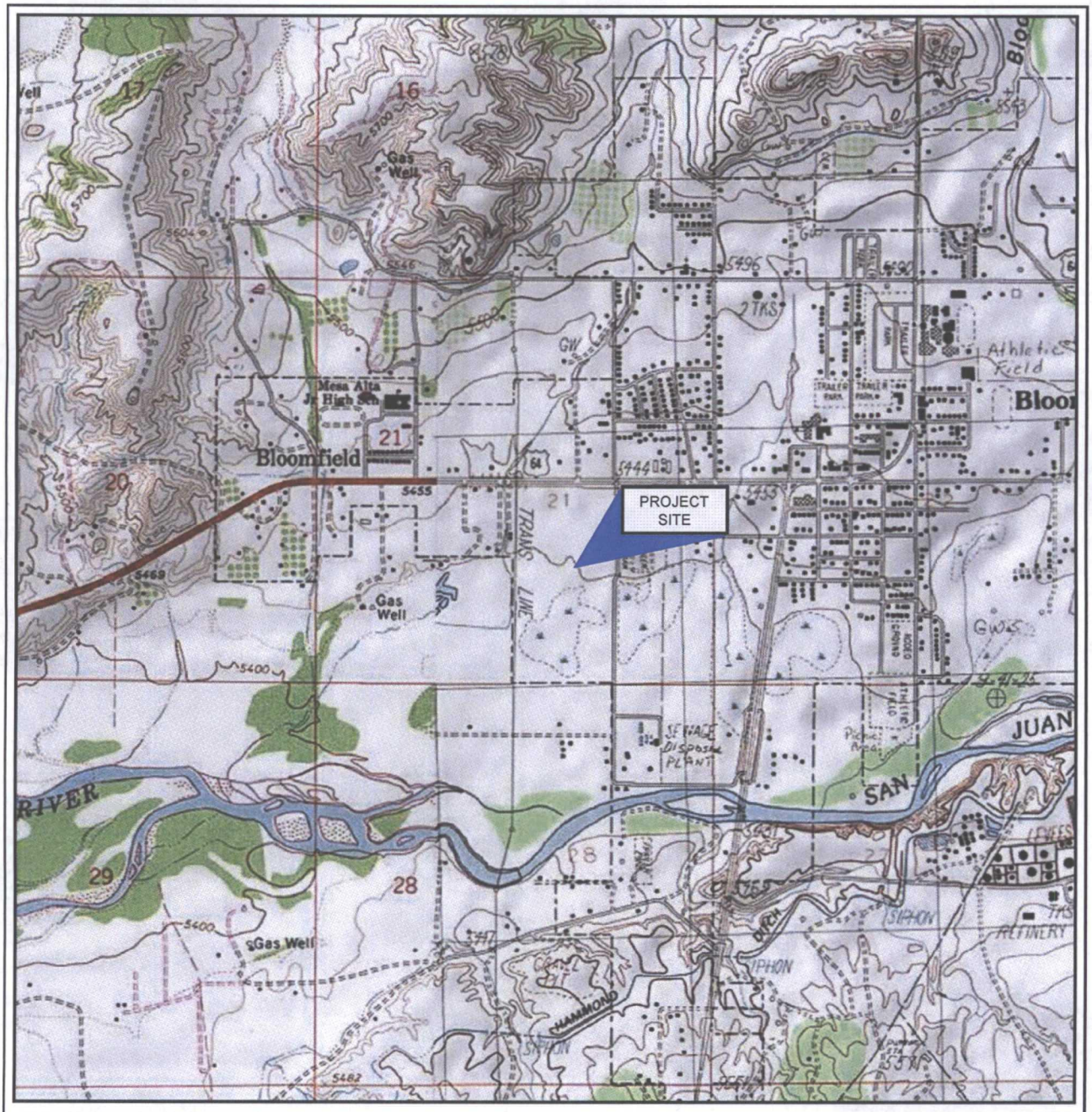
- **Sulfate**
  - The NMWQCC domestic water supply groundwater quality standard for sulfate is 600 mg/L; groundwater samples collected from Monitor Wells MW-1, MW-2, and MW-3 were found to contain sulfate in concentrations of 1,790 mg/L, 1,860 mg/L, and 2,080 mg/L, respectively.

The corresponding laboratory analysis report for the June 24, 2011 groundwater sampling event is included in **Appendix B**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The June 24, 2011 quarterly groundwater monitoring event represents the first quarter in which BTEX analysis has been discontinued. Monitor Wells MW-1, MW-2, and MW-3 were found to have concentrations exceeding the NMWQCC standard for sulfate and TDS. Groundwater samples collected from Monitoring Wells MW-1 and MW-3 were found to exceed the NMWQCC standard for dissolved manganese. TDS and sulfate concentrations appear to be stable with eight and nine quarters of data, respectively. Quarterly monitoring will continue for dissolved manganese only.

FIGURES



SOURCE: USGS 7.5 MINUTE QUAD
"HORN CANYON AND BLOOMFIELD, NEW MEXICO"

N

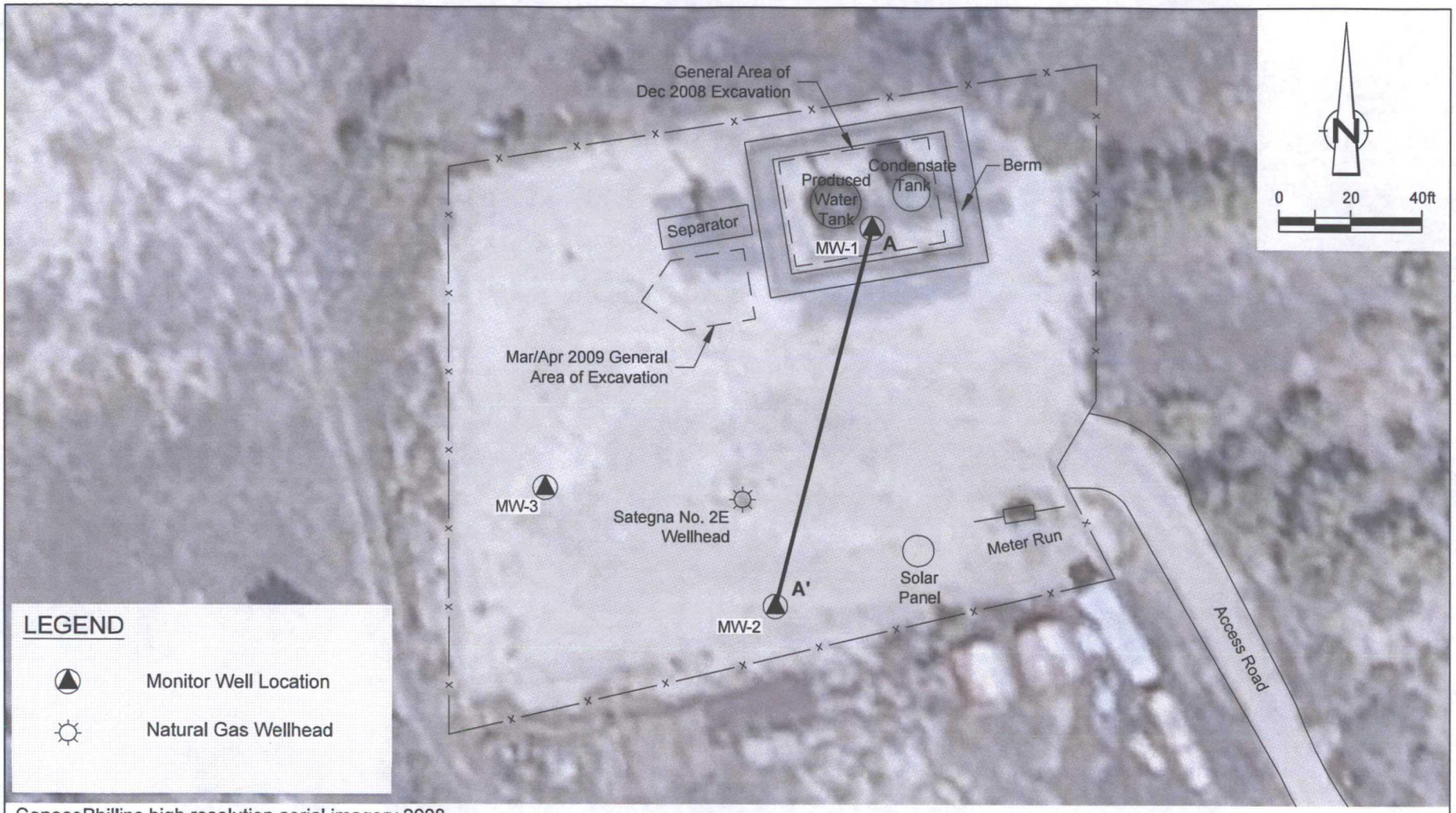
0 1000 2000ft

Figure 1

SITE VICINITY MAP
SATEGNA NO. 2E NATURAL GAS WELL SITE
SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company

CRA

074932-95(002)GN-DL004 DEC 5/2011



ConocoPhillips high resolution aerial imagery 2008.

Figure 2

SITE PLAN
SATEGNA NO. 2E NATURAL GAS WELL SITE
SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company

074932-95(002)GN-DL001 DEC 5/2011

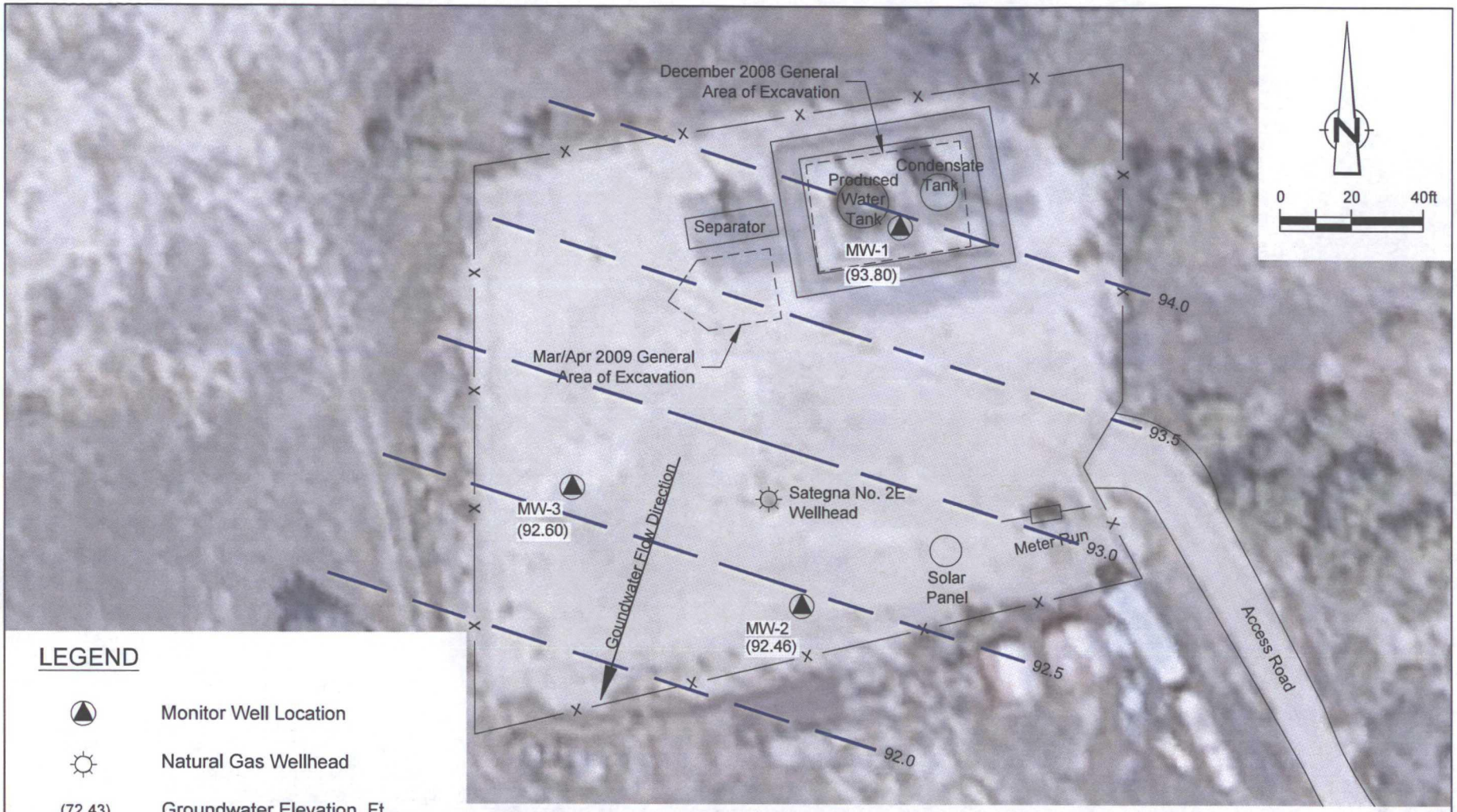


Figure 3

JUNE 2011 GROUNDWATER POTENTIOMETRIC SURFACE MAP
SATEGNA NO. 2E NATURAL GAS WELL SITE
SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company

074932-95(002)GN-DL002 DEC 5/2011

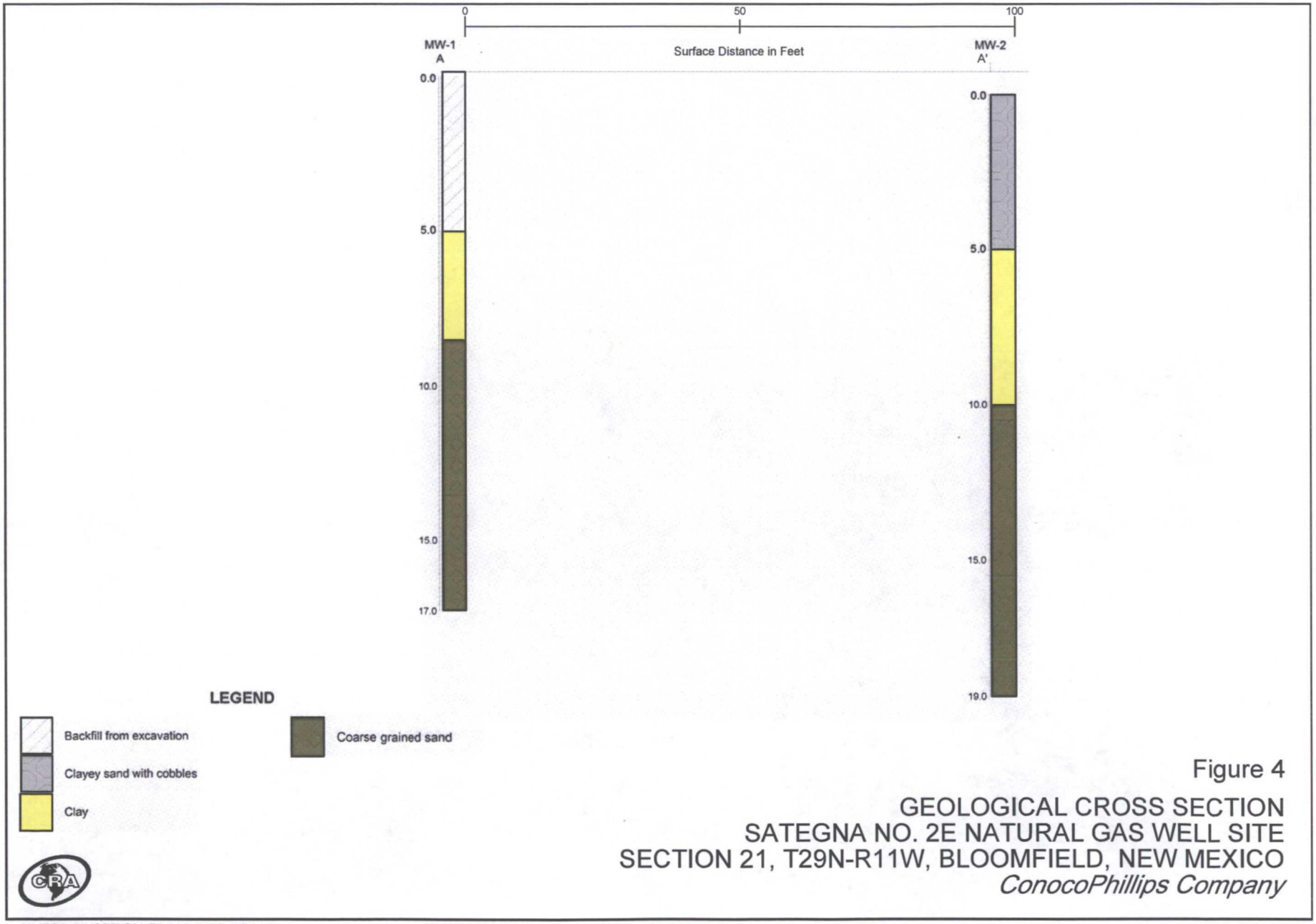


Figure 4

GEOLOGICAL CROSS SECTION
SATEGNA NO. 2E NATURAL GAS WELL SITE
SECTION 21, T29N-R11W, BLOOMFIELD, NEW MEXICO
ConocoPhillips Company

074932-95(002)GN-DL003 DEC 5/2011

TABLES

TABLE 1

SITE HISTORY TIMELINE
CONOCOPHILLIPS COMPANY
SATEGNA NO. 2E
SAN JUAN COUNTY, NM

Date/Time Period	*Event/Action*	*Description/Comments*
November 24, 2008	Release Discovered	Approximately eight barrels of condensate were found to have spilled from an on-Site, aboveground storage tank (AST); corrosion was thought to be the cause of the release. A C-141 form was filled out by ConocoPhillips staff and notice was given to Brandon Powell of the New Mexico Oil Conservation Division (NMOCD) via electronic mail. The C-141 form stated that the well was shut down and the production tank was emptied.
November 25, 2008	Initial Site Assessment	Envirotech Inc. of Farmington, NM (Envirotech) collected soil samples and analyzed them using the heated headspace soil method; results were 0.2 and 1.1 parts per million (ppm) from outside the excavated area. Depth of soil samples was not noted. Envirotech hand augered two soil borings to groundwater at a depth of approximately 8 feet below ground surface (bgs) and submitted groundwater samples for analysis. Results were below OCD action levels for benzene, toluene, ethylbenzene, and total xylenes (BTEX) in groundwater. Envirotech noted that groundwater levels in the soil borings increased to approximately 5 feet bgs, and groundwater beneath the Site was thought to be under confined aquifer conditions.
December 4, 2008	Site Assessment	Envirotech returned to the Site and obtained grab and composite soil samples from an excavation measuring approximately 30 feet by 18 feet by 5 feet deep (Figure 2). Heated headspace results show values ranging from 6.5 ppm in a grab soil sample obtained from the bottom of the excavation to 1,400 ppm from a composite soil sample taken from the former location of the AST. Total petroleum hydrocarbons (TPH), BTEX, and chloride samples were obtained for soils analysis. Results were below OCD action levels for BTEX. One soil sample obtained for chlorides showed results of 370 milligrams per kilogram (mg/kg). Results for TPH analysis obtained through Environmental Protection Agency (EPA) method 8015B for the composite soil sample taken at the site of the AST revealed results of 205 mg/kg; the OCD action level is 100 mg/kg. Results for TPH analysis obtained through EPA method 418.1 for the composite soil sample obtained at the location of the below ground tank revealed results of 521 mg/kg. The below ground tank was located within the berm and adjacent to the AST (Figure 2). Results of all other soil analyses at all other sampling locations were below OCD action levels.
December 5, 2008	Site Assessment	Envirotech noted seepage of groundwater into the excavation on December 4, 2008, and returned to the Site on December 5, 2008 to collect groundwater samples from the excavation for BTEX analysis. The OCD groundwater action levels for benzene, toluene, and total xylenes are 10 ug/l, 750 ug/l, and 620 ug/l, respectively. Benzene was found at a concentration of 327 ug/l, toluene was detected at 4,300 ug/l, and total xylenes were found at a concentration of 8,480 ug/L.
Week of December 8, 2008	Removal of Groundwater Seepage	A vacuum truck was utilized to pump groundwater seepage from the surface of the excavated area. Once removed, further excavation took place and groundwater slowly seeped into the excavation; this process was repeated a total of four (4) times. The first time water was pumped from the surface of the excavation, a hydrocarbon odor and free-phase, light non-aqueous phase liquid (LNAPL) were present. By the fourth and last event, neither the hydrocarbon odor nor free-phase LNAPL were present in the groundwater seepage. Each pumping event removed approximately 30-60 barrels of liquid from the Site.
January 20, 2009 & January 30, 2009	Site Assessment	Tetra Tech conducted a Site visit to determine proposed groundwater monitoring well locations.
March 4-5, 2009	Monitor Well Installation	Tetra Tech installed three groundwater monitor wells at the Site: MW-1, MW-2, and MW-3.
March 2009	Additional Contamination Discovered	Construction and trenching for relocation of well operational equipment and tanks uncovered additional hydrocarbon impacted soils between the well head and separator tank. Work was stopped.
April 2, 2009	Quarterly Groundwater	Tetra Tech conducted the first quarterly groundwater monitoring event at the Site.
April 2, 2009	Site Assessment	Envirotech created an exploratory trench between the proposed location of the separator tank and the well head and found an abandoned sewer line associated with hydrocarbon-impacted soils. The trenching was stopped and the excavated soils were stockpiled on site.
April 23 - 24, 2009	Removal of Contaminated Soil	Tetra Tech provided oversight for removal of approximately 96 cubic yards of hydrocarbon-impacted soils located west of the tank berm and in the vicinity of the abandoned sewer line. Excavation was backfilled.
June 17, 2009	Quarterly Groundwater Monitoring	Tetra Tech conducted the second quarterly groundwater monitoring event at the Site.
September 28, 2009	Quarterly Groundwater Monitoring	Tetra Tech conducted the third quarterly groundwater monitoring event at the Site.
December 14, 2009	Quarterly Groundwater Monitoring	Tetra Tech conducted the fourth quarterly groundwater monitoring event at the Site.
March 31, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the fifth quarterly groundwater monitoring event at the Site.
June 7, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the sixth quarterly groundwater monitoring event at the Site.
September 23, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the seventh quarterly groundwater monitoring event at the Site.
December 14, 2010	Quarterly Groundwater Monitoring	Tetra Tech conducted the eighth quarterly groundwater monitoring event at the Site.
March 14, 2011	Quarterly Groundwater Monitoring	Tetra Tech conducted the ninth quarterly groundwater monitoring event at the Site.
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 24, 2011	Quarterly Groundwater Monitoring	CRA conducted the tenth quarterly groundwater monitoring event at the Site.

TABLE 2

MONITORING WELL SPECIFICATIONS AND GROUNDWATER ELEVATIONS
APRIL 2009 - JUNE 2011
CONOCOPHILLIPS COMPANY
SATEGNA 2E
SAN JUAN COUNTY, NM

Well ID	*Total Depth (ft below TOC)*	*Elevation**	*Screen Interval (bgs)*	*Date Measured*	*Depth to Groundwater (ft below TOC)*	*Relative Water Level*
MW-1	20.3	99.36	2.2-17.2	04/02/2009	5.15	94.21
				06/17/2009	5.43	93.93
				09/28/2009	5.45	93.91
				12/14/2009	5.06	94.3
				03/31/2010	5.03	94.33
				06/07/2010	5.41	93.95
				09/23/2010	5.25	94.11
				12/14/2010	5.07	94.29
				03/14/2011	5.09	94.27
				06/24/2011	5.56	93.8
MW-2	20.9	98.78	3.33-18.33	04/02/2009	5.96	92.82
				06/17/2009	6.21	92.57
				09/28/2009	6.23	92.55
				12/14/2009	5.92	92.86
				03/31/2010	5.9	92.88
				06/07/2010	6.21	92.57
				09/23/2010	6.06	92.72
				12/14/2010	5.91	92.87
				03/14/2011	5.94	92.84
				06/24/2011	6.32	92.46
MW-3	20.83	98.66	3-18	04/02/2009	5.7	92.96
				06/17/2009	5.97	92.69
				09/28/2009	5.96	92.7
				12/14/2009	5.63	93.03
				03/31/2010	5.61	93.05
				06/07/2010	5.95	92.71
				09/23/2010	5.77	92.89
				12/14/2010	5.61	93.05
				03/14/2011	5.63	93.03
				06/24/2011	6.06	92.6

Notes:

1. ft = feet
2. TOC = top of casing
3. bgs = below ground surface
4. * Elevation relative to wellhead, set at 100 feet.

TABLE 3

GROUNDWATER ANALYTICAL RESULTS SUMMARY
APRIL 2009 - JUNE 2011
CONOCOPHILLIPS COMPANY
SATEGNA 2E
SAN JUAN COUNTY, NM

Well ID	*Sample ID Number*	*Date*	*Benzene (mg/L)*	*Toluene (mg/L)*	*Ethylbenzene (mg/L)*	*Xylenes (total) (mg/L)*	*Iron (dissolved) (mg/L)*	*Manganese (dissolved) (mg/L)*	*Sulfate (mg/L)*	*Total dissolved solids (TDS) (mg/L)*
MW-1		4/2/2009	<0.005	<0.005	<0.005	<0.005	--	--	1790	--
		6/17/2009	<0.005	<0.005	<0.005	<0.005	--	--	1420	--
		9/28/2009	<0.001	<0.001	<0.001	<0.001	<0.02	**0.243**	1770	2590
		12/14/2009	<0.001	<0.001	<0.001	<0.001	--	0.152	--	2470
		3/31/2010	<0.001	<0.001	<0.001	<0.001	--	0.176	1320	2470
		6/7/2010	<0.001	<0.001	<0.001	<0.001	--	**0.206**	1330	2580
		9/23/2010	<0.001	<0.001	<0.001	<0.001	--	**0.238**	1560	3210
		12/14/2010	<0.001	<0.001	<0.001	<0.001	--	**0.232**	1600	2520
		3/14/2011	<0.001	<0.001	<0.001	<0.001	--	**0.323**	1820	2770
	GW-74932-062411-CB-02	6/24/2011	--	--	--	--	--	0.574	1790	2450
MW-2		4/2/2009	<0.005	<0.005	<0.005	<0.005	--	--	1850	--
		6/17/2009	<0.005	<0.005	<0.005	<0.005	--	--	1610	--
		9/28/2009	<0.001	<0.001	<0.001	<0.001	0.0217	0.168	1840	2260
		12/14/2009	<0.001	<0.001	<0.001	<0.001	--	0.158	--	2470
		3/31/2010	<0.001	<0.001	<0.001	<0.001	--	0.136	1530	2620
		6/7/2010	<0.001	<0.001	<0.001	<0.001	--	0.157	1290	2590
		9/23/2010	<0.001	<0.001	<0.001	<0.001	--	0.0981	1510	2800
		12/14/2010	<0.001	<0.001	<0.001	<0.001	--	0.128	1610	3000
		3/14/2011	<0.001	<0.001	<0.001	<0.001	--	0.158	1850	2680
	GW-74932-062411-CB-01	6/24/2011	--	--	--	--	--	0.174	1860	2550
MW-3		4/2/2009	<0.005	<0.005	<0.005	<0.005	--	--	2110	--
		6/17/2009	<0.005	<0.005	<0.005	<0.005	--	--	1650	--
		9/28/2009	<0.001	<0.001	<0.001	<0.001	<0.02	**2.68**	2230	3340
		12/14/2009	<0.001	<0.001	<0.001	<0.001	--	**2.4**	--	3060
		3/31/2010	<0.001	<0.001	<0.001	<0.001	--	**1.71**	1660	3090
		6/7/2010	<0.001	<0.001	<0.001	<0.001	--	**0.968**	1760	2650
		9/23/2010	<0.001	<0.001	<0.001	<0.001	--	**1.68**	1910	3570
		12/14/2010	<0.001	<0.001	<0.001	<0.001	--	**1.13**	1900	3000
		3/14/2011	<0.001	<0.001	<0.001	<0.001	--	**2.08**	2090	3200
	GW-74932-062411-CB-03	6/24/2011	--	--	--	--	--	1.7	2080	2860
NMWQCC Groundwater Quality Standards			**0.01**	**0.75**	**0.75**	**0.62**	**1.0**	**0.2**	**600**	**1000**

Notes:
MW = monitoring well
NMWQCC = New Mexico Water Quality Control Commission
Constituents in **BOLD** are in excess of NMWQCC groundwater quality standards
mg/L = milligrams per liter (parts per million)
< 1.0 = Below laboratory detection limit of 1.0 mg/L

APPENDICES

APPENDIX A

JUNE 2011 QUARTERLY GROUNDWATER SAMPLING FIELD FORMS

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Sategna 2E JOB# 074932

SAMPLE ID: GW-074932-062411-CB-02 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)
6.24.11	6.24.11	1450	2.32	7.0

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 5.56 (feet) WELL ELEVATION 99.36 (feet)

WELL DEPTH 20.12 (feet) GROUNDWATER ELEVATION 93.80 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
12.87 (°C)	7.22 (std)	(g/L)	6671 (µS/cm)	73.3 (mV)	6.0 (gal)
13.19 (°C)	7.10 (std)	(g/L)	6738 (µS/cm)	80.2 (mV)	6.5 (gal)
13.19 (°C)	7.07 (std)	(g/L)	6744 (µS/cm)	82.2 (mV)	7.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: cloudy ODOR: COLOR: wh. lt SHEEN Y/N

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

SPECIFIC COMMENTS:

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

6.24.11 DATE | Robin Brown PRINT | Robin Brown SIGNATURE

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Saltegna 2E JOB# 074932

SAMPLE ID: GW-074932-062411-CB-01 WELL# MW-2

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)
6.24.11	6.24.11	1430	2.29	7.0

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: 6.32 (feet) WELL ELEVATION: 98.78 (feet)

WELL DEPTH: 20.67 (feet) GROUNDWATER ELEVATION: 92.46 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
14.28 (°C)	7.02 (std)	(g/L)	7240 (µS/cm)	79.6 (mV)	5.75 (gal)
13.80 (°C)	6.95 (std)	(g/L)	7139 (µS/cm)	82.3 (mV)	6.25 (gal)
13.85 (°C)	6.93 (std)	(g/L)	7161 (µS/cm)	79.9 (mV)	7.0 (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:

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

DATE	PRINT	SIGNATURE
6.24.11	Cassie Brown	Cassie Brown

WELL SAMPLING FIELD INFORMATION FORM

SITE/PROJECT NAME: Safeway 26 JOB# 074932

SAMPLE ID: GW-074932-062411-CB-03 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)
6.24.11	6.24.11	1510	2.27	7

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	D	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 6.06 (feet) WELL ELEVATION 98.66 (feet)

WELL DEPTH 20.25 (feet) GROUNDWATER ELEVATION 92.60 (feet)

TEMPERATURE	pH	TDS	CONDUCTIVITY	ORP	VOLUME
14.95 (°C)	7.35 (std)	(g/L)	8421 (µS/cm)	60.3 (mV)	4.25 (gal)
13.24 (°C)	7.16 (std)	(g/L)	7913 (µS/cm)	19.5 (mV)	6.0 (gal)
13.06 (°C)	7.16 (std)	(g/L)	7853 (µS/cm)	20.3 (mV)	7.0 (gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)
(°C)	(std)	(g/L)	(µS/cm)	(mV)	(gal)

FIELD COMMENTS

SAMPLE APPEARANCE: clear ODOR: COLOR: clear SHEEN Y/N

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

SPECIFIC COMMENTS:

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

6.24.11 Cassie Braun Cassie Braun

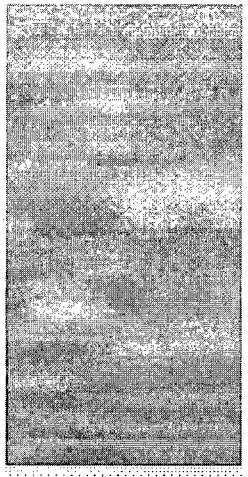
DATE PRINT SIGNATURE

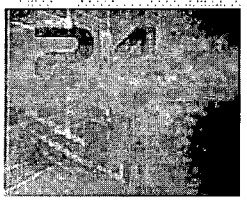
APPENDIX B

JUNE 2011 QUARTERLY GROUNDWATER LABORATORY ANALYTICAL REPORT

Gulf Coast
ACCUTEST
LABORATORIES

07/20/11





Technical Report for

Conoco Phillips

CRA: Sategna

Sategna 2E / 74932

Accutest Job Number: T79850

Sampling Date: 06/24/11

Report to:

Conestoga Rovers & Associates

keblanchard@craworld.com
christine.mathews@tetratech.com; cassandre.brown@tetratech.com
ATTN: Kelly Blanchard

Total number of pages in report: **24**

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) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103)

Sections: 1 2 3 4 5

Table of Contents

-1-

Sample Summary

Conoco Phillips

Job No: T79850

CRA: Sategna
Project No: Sategna 2E / 74932

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
T79850-1	06/24/11	14:30	06/28/11	AQ	Ground Water	GW-74932-062411-1B-01
T79850-1F	06/24/11	14:30	06/28/11	AQ	Groundwater Filtered	GW-74932-062411-1B-01 (DISSOLVED)
T79850-2	06/24/11	14:50	06/28/11	AQ	Ground Water	GW-74932-062411-CB-02
T79850-2F	06/24/11	14:50	06/28/11	AQ	Groundwater Filtered	GW-74932-062411-CB-02 (DISSOLVED)
T79850-3	06/24/11	15:10	06/28/11	AQ	Ground Water	GW-74932-062411-CB-03
T79850-3F	06/24/11	15:10	06/28/11	AQ	Groundwater Filtered	GW-74932-062411-CB-03 (DISSOLVED)

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74932-062411-1B-01		
Lab Sample ID:	T79850-1	**Date Sampled:**	06/24/11
Matrix:	AQ - Ground Water	**Date Received:**	06/28/11
		Percent Solids:	n/a
Project:	CRA: Sategna		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	2550	20	mg/l	1	06/30/11	BG	SM 2540C
Sulfate	1860	100	mg/l	200	07/08/11 22:12	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74932-062411-1B-01 (DISSOLVED)		
Lab Sample ID:	T79850-1F	**Date Sampled:**	06/24/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/28/11
		Percent Solids:	n/a
Project:	CRA: Sategna		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Manganese	174	15	ug/l	1	06/29/11	07/01/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5877
(2) Prep QC Batch: MP15113

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74932-062411-CB-02		
Lab Sample ID:	T79850-2	**Date Sampled:**	06/24/11
Matrix:	AQ - Ground Water	**Date Received:**	06/28/11
		Percent Solids:	n/a
Project:	CRA: Sategna		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	2450	20	mg/l	1	06/30/11	BG	SM 2540C
Sulfate	1790	100	mg/l	200	07/08/11 22:29	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74932-062411-CB-02 (DISSOLVED)		
Lab Sample ID:	T79850-2F	**Date Sampled:**	06/24/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/28/11
		Percent Solids:	n/a
Project:	CRA: Sategna		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Manganese	574	15	ug/l	1	06/29/11	07/01/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5877
(2) Prep QC Batch: MP15113

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74932-062411-CB-03		
Lab Sample ID:	T79850-3	**Date Sampled:**	06/24/11
Matrix:	AQ - Ground Water	**Date Received:**	06/28/11
		Percent Solids:	n/a
Project:	CRA: Sategna		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Total Dissolved	2860	20	mg/l	1	06/30/11	BG	SM 2540C
Sulfate	2080	100	mg/l	200	07/08/11 22:46	ES	EPA 300/SW846 9056

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	GW-74932-062411-CB-03 (DISSOLVED)		
Lab Sample ID:	T79850-3F	**Date Sampled:**	06/24/11
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/28/11
		Percent Solids:	n/a
Project:	CRA: Sategna		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Manganese	1700	15	ug/l	1	06/29/11	07/01/11	EG	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA5877
(2) Prep QC Batch: MP15113

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. T79850 320234

page 1 of 1

Client Name: TRH
Address: 6121 Indian School Rd NE #200
Phone/Fax: 505-884-0672
Client Contact: Kelly Blanchard Email: kblanchard@crain... .com
Project Name/No.: Sategna 2E (74932)
Site Name: Sategna
Site Location: Bloomfield, NM
Invoice To: Ph:

Requested Analysis: Sulfate, TDS; dissolved Manganese

matrix: W=water S=soil O=oil SL=sludge X=other; bottle: P=plastic A=amber glass G=glass V=vial X=other; size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other; pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

	SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	Sulfate, TDS	dissolved Manganese
1	GW-74932-062411-CB-01	6.24.11	1430		X	W	P	1	None	1	X	
1	GW-74932-062411-CB-01	6.24.11	1430		X	W	P	16	None	1		X
2	GW-74932-062411-CB-02	6.24.11	1450		X	W	P	1	None	1	X	
2	GW-74932-062411-CB-02	6.24.11	1450		X	W	P	16	None	1		X
3	GW-74932-062411-CB-03	6.24.11	1510		X	W	P	1	None	1	X	
3	GW-74932-062411-CB-03	6.24.11	1510		X	W	P	16	None	1		X

Client/Consultant Remarks: Please filter and preserve metals @ lab

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☒ Y ☐ N
Temp: 4.5

Requested TAT: Contract ☐ 72hr ☐ 24hr ☐ Standard ☐ 48hr ☐ Other ☐

Special Reporting Requirements Results: Fax ☐ Email ☒ PDF ☐
Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [signature]	date 6.24.00	time 1900	2. Received by: fedex
3. Relinquished by: fedex	date 6/28/11	time 1010	4. Received by: [signature]
5. Relinquished by:	date	time	6. Received by Laboratory:

☐ 8880 Interchange Drive Houston, TX 77054 (713) 660-0901
☐ 500 Ambassador Caffery Parkway Scott, LA 70583 (337) 237-4775
☐ 459 Hughes Drive Traverse City, MI 49686 (231) 947-5777

3.1 3

T79850: Chain of Custody
Page 1 of 3

ACCUTEST LABORATORIES

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: T79850 **Client:** CRA **Project:**

Date / Time Received: 6/28/2011 **Delivery Method:** **Airbill #'s:** 486899904872

No. Coolers: 1 **Therm ID:** 110; **Temp Adjustment Factor:** -0.5;

Cooler Temps (Initial/Adjusted): #1: (5/4.5);

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

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Cooler temp verification:	Glass Thermometer	
3. Cooler media:	Ice (Bag)	

Quality Control Preservation	Y	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	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

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

Sample Integrity - Instructions	Y	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

6/28/11

Accutest Laboratories
V:713.271.4700

10165 Harwin Drive
F: 713.271.4770

Houston, TX 77036
www.accutest.com

T79850: Chain of Custody
Page 2 of 3

ACCUTEST LABORATORIES

Sample Receipt Log

Job #: T79850 **Date / Time Received:** 6/28/2011 10:10:00 AM **Initials:** VG

Client: CRA

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	T79850-1	32oz	1	3B	N/P	Note #2 - Preservative check not applicable.	110	5	-0.5	4.5
1	T79850-1	500 ml	2	1DD	N/P	Note #2 - Preservative check not applicable.	110	5	-0.5	4.5
1	T79850-2	32oz	1	3B	N/P	Note #2 - Preservative check not applicable.	110	5	-0.5	4.5
1	T79850-2	500 ml	2	1DD	N/P	Note #2 - Preservative check not applicable.	110	5	-0.5	4.5
1	T79850-3	32oz	1	3B	N/P	Note #2 - Preservative check not applicable.	110	5	-0.5	4.5
1	T79850-3	500 ml	2	1DD	N/P	Note #2 - Preservative check not applicable.	110	5	-0.5	4.5

T79850: Chain of Custody
Page 3 of 3

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: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

QC Batch ID: MP15113
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/29/11

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		
Lead	3.0	1	1.8		
Lithium	300	2	2		
Magnesium	5000	7.7	7.9		
Manganese	15	.054	1.9	0.86	<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 MP15113: T79850-1F, T79850-2F, T79850-3F

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: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

QC Batch ID: MP15113
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/29/11 06/29/11

Metal	T79839-5F Original	DUP	RPD	QC Limits	T79839-5F Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic	anr								
Barium	anr								
Beryllium									
Boron									
Cadmium	anr								
Calcium									
Chromium	anr								
Cobalt									
Copper									
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese	5270	5500	4.3	0-20	5270	5500	400	57.5 (a)	80-120
Molybdenum									
Nickel									
Potassium									
Selenium	anr								
Silver	anr								
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP15113: T79850-1F, T79850-2F, T79850-3F

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
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

QC Batch ID: MP15113
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/29/11

Metal	T79839-5F 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	anr					
Lead	anr					
Lithium						
Magnesium						
Manganese	5270	5650	400	95.0	2.7	20
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP15113: T79850-1F, T79850-2F, T79850-3F

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: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

QC Batch ID: MP15113
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/29/11

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese	426	400	106.5	80-120
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP15113: T79850-1F, T79850-2F, T79850-3F

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

SERIAL DILUTION RESULTS SUMMARY

Login Number: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

QC Batch ID: MP15113
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 06/29/11

Metal	T79839-5F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese	5270	5230	0.8	0-10
Molybdenum				
Nickel				
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP15113: T79850-1F, T79850-2F, T79850-3F

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

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: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Solids, Total Dissolved	GN32568	10	3.0	mg/l	500	496	99.2	80-120%
Sulfate	GP13815/GN32828	0.50	0.0	mg/l	10	9.28	92.8	90-110%

Associated Samples:
Batch GN32568: T79850-1, T79850-2, T79850-3
Batch GP13815: T79850-1, T79850-2, T79850-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN32568	T79850-3	mg/l	2860	2890	1.0	0-5%
Sulfate	GP13815/GN32828	T79848-5	mg/l	176	172	2.3	0-20%

Associated Samples:
Batch GN32568: T79850-1, T79850-2, T79850-3
Batch GP13815: T79850-1, T79850-2, T79850-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T79850
Account: CONOCO - Conoco Phillips
Project: CRA: Sategna

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Sulfate	GP13815/GN32828	T79848-5	mg/l	176	200	371	97.5	80-120%

Associated Samples:
Batch GP13815: T79850-1, T79850-2, T79850-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

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