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REPORTS

DATE:

2001

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BURLINGTON RESOURCES

SAN JUAN DIVISION

March 27, 2002

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: 2001 Annual Groundwater Investigation and Remediation Reports
San Juan Basin, New Mexico

Dear Mr. Olson:

As required in Burlington Resources' approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 2001 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

Cozzens B#1
Hampton #4M
Johnson Federal #4 Metering Station
Standard Oil Com. #1
Maddox Com 1A

If you have questions or additional information is needed, please contact me at (505) 326-9537.

Sincerely,

Gregg Wurtz
Sr. Environmental Representative

Attachments - Groundwater Investigation and Remediation Reports

cc: Denny Foust - NMOCD Aztec
Bruce Gantner - BR
WFS - Mark Harvey (Cozzens B#1, Hampton #4M)
EPFS - Scott Pope (Johnson Fed. #4, Standard Oil Com.#1)
Facility and Correspondence Files

3401 East 30th Street, 87402-8807, P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700, Fax 505-326-9833

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ENVIRONMENTAL BUREAU
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BURLINGTON RESOURCES 2001 ANNUAL GROUNDWATER REPORT

Hampton #4M

SITE DETAILS

Location: Unit Letter N, Section 13, Township 30N, Range 11W; San Juan County, New Mexico
Land Type: Federal

PREVIOUS ACTIVITIES

PNM conducted limited excavation (approximately 60 cubic yards) of impacted soil underneath their former earthen pit and installed groundwater monitoring wells and a product recovery well.

Burlington Resources (BR) excavated impacted soil down to groundwater depth underneath our former area of operation and installed groundwater monitoring wells. During November 1998, BR began excavation of additional impacted soils to a depth of approximately 27 feet from under and around PNM's former earthen pit. Approximately 77 cubic yards of additional soils were also removed from BR's excavation in the southeast part of the location.

1999 ACTIVITIES

BR continued excavation work at the Hampton #4M location, continuing south from PNM's area of operation toward BR's area of operation. Impacted soils were excavated until all apparent source materials had been removed. Prior to backfilling, 30 barrels of Oxy-1 chemical was applied to the bottom and sides of the excavation to stimulate bioremediation. BR also installed a monitoring well (MW-13) in the vicinity of the former MW-4 and downgradient of BR's original excavation under the former tank battery. Details on these activities can be found in the status report submitted to the OCD on September 16, 1999.

BR installed three additional monitoring wells (MW-14,15,16) on the Hampton #4M location. BR also attempted to install two downgradient offsite wells, but both wells hit "auger refusal" prior to contacting any groundwater. Details on these wells and attempts can be found in the status reports submitted to the OCD on October 28, 1999 and January 11, 2000.

The OCD sampled the groundwater seep to the northwest side of the well pad on April 14, 1999. The analytical results show that benzene is present in concentrations in excess of New Mexico Water Quality Control Commission groundwater standards.

Groundwater sampling from monitoring well (MW-14) revealed a level of free phase hydrocarbons in the extreme southeast part of location.

2000 ACTIVITIES

Activities completed in 2000 included additional excavation, quarterly well monitoring, and PNMs transfer of environmental responsibility and ownership to Williams Field Services (WFS).

The excavation remediation work proposed in the April 12, 2000 letter to OCD was completed as planned. The excavation was located in the extreme southeast corner of the location adjacent to areas excavated in 1997 and 1998 and within the former tank battery location. The excavation activities were driven by the detection of free phase hydrocarbons in the monitoring well MW-14 installed in the southeast corner on October 1999. The monitoring wells MW-13 and MW-14 were destroyed during the excavation work and will be replaced with one well in a similar location as MW-14. The excavation was completed down to groundwater and approximately 120 cu. yds. were removed. Impacted soils were excavated until all apparent source materials had been removed. The contaminated soils were land farmed off location on a BR location within the same lease. The bottom of the excavation was ended into approximately 2 feet of dry non-contaminated blue green shale that appears to be the confining layer for the catchment basin encompassing the Hampton location. This current excavation work should represent the last remaining area to be excavated and no further excavation is planned or necessary at this time. The excavation has remained open to allow seepage of any potential free product that was detected in the ground water well MW-14 and to promote volatilization of the excavated area. To date, no measurable thickness of hydrocarbons has been detected on the surface of the approximately 1 foot of water in the bottom of the excavation. A sample will be collected of the water in the excavation in 2001 and analyzed for BTEX constituents.

Quarterly monitoring was performed for the first two quarters of 2000. The ground water results are provided in Attachment 1 and the analytical data for 2000 is also attached. The ground water monitoring for the last two quarters of 2000 was missed related to a miscommunication with consultants and the transfer of monitoring activities from PNM and BR. The first quarter groundwater samples have been collected for 2001 and the consultant has been given clear instructions regarding the sampling frequency and number of wells to be sampled for 2001. The upgradient well MW-1 was not sampled because it has demonstrated non-detect concentrations for four consecutive quarters and there is no potential source of contamination upgradient.

A summary of groundwater analytical data is presented in Attachment 1. A site diagram is presented as Attachment 2. An aerial photograph, which is from PNM's OCD exhibit, is also included as Attachment 3 for a better reference of scale.

2001 ACTIVITIES

The excavation completed in 2000 was backfilled with clean soil the third quarter of 2001. The landfarms associated with the excavated dirt were tested and determined clean and closed. Approximately a one foot static water level was observed in the open excavation in the first quarters of 2001. No visible sheen was observed on the water surface and a benzene level of 2 ug/l was detected in a second quarter 2001 grab sample. BR applied a potassium permanganate solution to the excavation to enhance the degradation of the hydrocarbons remaining in the exposed excavated soil and passively treat insitu the soils and ground water down gradient from the excavation prior to backfilling the excavation.

Quarterly monitoring was continued for the 2001. The ground water field notes and the analytical data are provided in Attachment 1 for 2001. The first quarter field notes were lost by the contractor performing the work, but the lab analysis was recovered. BR collected only water level data from the upgradient well MW-1. No constituents of concern were detected in four consecutive quarters at MW-1 and no upgradient source of contamination is present.

Wells MW-15, MW-11, and MW-9 remained clean for the four quarters of sampling in 2001. MW-11 is the furthest down gradient well to the north. Well MW-9 is upgradient of Williams equipment location and down gradient from BR's historical and current production equipment locations as well as the 2000 excavation work. The non-detect analytical results in MW-9 support the natural remediation and effectiveness of the excavation work performed upgradient of the well. Well MW-15 is within the current BR well production equipment containment berm and has not detected constituents of concern (COC). Clean ground water from MW-15, near BR's separator, indicates the separator pit is not a source of contamination.

Wells MW-12, MW-16, MW-5 and MW-7 detected COC. Well MW-12 is located adjacent and downgradient of the former Willaim's unlined pit and the levels of COC are elevated and remain within the range of 2000 sampling levels. MW-16 located on the eastern boundary of the location along a sandstone out crop shows COC level to be increasing in the last two quarters of 2001. MW-5 is located in the sand bed wash downgradient from the location and closest to William's unlined pit and the analytical results for 2001 are in a similar range to 2000. MW-7 is located in the sand bed wash downgradient from the location downgradient from well MW-5. The COC levels in MW-7 are similar to historic levels with the exception that a viable sheen was observed in the 4th quarter sampling event that has not been observed in prior events. A seep located northeast of the production location along the eastern side of the sand bed wash was sampled quarterly in 2001 and only the first quarter detected any COC. TMW-1 is located in the sand bed wash between MW-5 and MW-7 and no samples were collected because of insufficient water to collect a sample.

CONCLUSIONS

Burlington Resources has been in discussion with WFS to assure proper assessment and closure of this site. Currently, BR is managing the sampling and analysis activities with a cost sharing agreement with WFS.

Historically, the source of contamination appeared to be defined and originated from two areas related to BR and WFS historical operations. A considerable amount of work and effort has been performed by BR to remediate by excavation areas of contamination and prevent the migration of contamination away from the site. The excavation work appears to have been very effective in reducing or eliminating the free phase hydrocarbons from BR's upgradient location. The horizontal extent of the ground water contamination in the north direction appears to start approximately in an area near wells MW-16 and MW-12 and continues to well MW-7. The furthest downgradient well MW-11 has not detected contamination exceeding the New Mexico Water Quality Control Commissions ground water standards.

The zone of greatest hydraulic conductivity and the approximate natural ground water flow path is confined to a narrow flow path in the bottom of the box canyon following the sand bed wash that extends downgradient from the production location. Vertically the clay unit that forms the sides and basement of the canyon is thought to confine the contamination and ground water vertically. The auger refusal

encountered on the two downgradient offsite monitoring well attempts in 1999 support the theory that the ground water is located in a relatively narrow band generally following the surface drainage.

The ground water regime at the location appears to be typical for the San Jan Basin and the arid southwest. The hydrogeology consists of an unconfined aquifer comprised of fine eolian and alluvial sands and silts overlying an impermeable clay unit that forms the sides and basement of the small box canyon. The clay unit acts as an impermeable catchment that collects and concentrates meteoric water filtering through the overlying sediments. This ground water travels as bed flow along a narrow band following the ephemeral wash that drains the basin.

The water supply for local residents is supplied by the City of Aztec and no domestic wells were identified in the area adjacent to the site. The location is on the edge of a rural county subdivision with no residents to the east and south. The formations in this area typically do not produce a quality of water acceptable for domestic, livestock or irrigation use, nor do they produce sufficient quantities to be considered aquifers.

RECOMMENDATIONS

- BR recommends continuing a quarterly monitoring program and trend analyses of data to measure the passive natural remediation approach use to adequately remediate the dissolved hydrocarbons in the groundwater and any remaining trace amounts of soil hydrocarbon contamination.
- Burlington Resources will continue quarterly sampling the seep if sufficient water is available.
- BR will replace the monitoring well MW-14

Attachments: Attachment 1 - Groundwater Sampling Results Summary
Attachment 2 - Site Diagram
Attachment 3 - Aerial Photo

Attachment 1

GROUNDWATER ANALYTICAL RESULTS SUMMARY

Burlington Resource Hampton 4m Groundwater Monitoring Summary 2001

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-1			10/30/97	6110.10	2.4	2.3	<0.2	1.1	5.8	--	
Upgradient well			01/12/98	6107.47	4.3	3.3	0.2	1.0	8.8	--	
	6149.42		04/14/98	6107.52	1.0	1.3	<0.5	<0.5	2.3	--	
			07/01/98	6107.13	1.3	1.0	<0.5	3.7	6.0	--	42.0
			10/05/98	6106.09	<1.0	<1.0	<1.0	<3.0	<6.0	--	
			11/09/98	6107.40	NA	NA	NA	NA	NA	--	
			01/27/99	6107.51	0.8	0.9	<0.5	<1.5	1.7	--	
			05/05/99	6106.76	NA	NA	NA	NA	NA	--	
			07/12/99	6106.55	1.1	0.5	<0.5	<0.5	1.6	--	
			08/17/99	6106.47	NA	NA	NA	NA	NA	--	
			10/21/99	6106.60	NA	NA	NA	NA	NA	--	
			01/27/00	6106.39	no sample collected						
		BR/onsite labs	06/13/00	6106.39	no sample collected						
Sample analysis terminated		Lost	01/01/01								
		water level only	6/26/2001	6104.46	no sample collected						
		water level only	09/18/01	6104.95	no sample collected						
		water level only	12/18/02	6105.20	no sample collected						
MW-2			12/16/96	NM	3840.0	7960.0	896.0	7920.0	20616.0	NM	
PNM drip pit well			02/04/97	NC	NA	NA	NA	NA	NA	4.40	
	6122.23		08/27/97	NC	NA	NA	NA	NA	NA	4.75	
			10/29/97	NC	NA	NA	NA	NA	NA	4.58	
			01/12/98	NC	NA	NA	NA	NA	NA	4.41	
			04/14/98	NC	NA	NA	NA	NA	NA	2.59	
			07/01/98	NC	NA	NA	NA	NA	NA	2.25	
			10/05/98	NC	NA	NA	NA	NA	NA	2.01	
			11/09/98	NC	NA	NA	NA	NA	NA	2.15	
		Well destroyed during Burlington excavation									
MW-3			1/31/1997	NM	<0.2	<0.2	<0.2	<0.2	<0.2	--	
Up & cross-gradient to PNM			2/4/1997	6101.06	NA	NA	NA	NA	NA	--	
	6121.49		5/5/1997	NM	NA	NA	NA	NA	NA	--	
		(Burlington)	10/29/1997	6101.19	<0.2	<0.2	<0.2	<0.2	<0.2	--	
			1/12/1998	6101.11	<0.2	<0.2	<0.2	<0.2	<0.2	--	
			4/14/1998	6100.97	<0.5	<0.5	<0.5	<0.5	<0.5	--	
			7/1/1998	6101.14	0.03 JB	0.05 JB	<0.5	<0.5	0.08 JB	--	<30.0
			10/5/1998	6100.57	<1.0	<1.0	<1.0	<3.0	<6.0	--	
			11/9/1998	6100.89	<1.0	<1.0	<1.0	<3.0	<6.0	--	
		Well destroyed during Burlington excavation									
MW-4			1/31/1997	NM	811.7	1420.5	31.0	388.1	2651.3	--	
Upgradient PNM; downgradient Burlington			2/4/1997	6106.16	NA	NA	NA	NA	NA	--	
		(Burlington)	5/1/1997	NM	1162.0	1797.0	41.0	486.0	3486.0	--	
	6123.105		8/27/1997	6106.87	NA	NA	NA	NA	NA	--	
			10/29/1997	6106.73	NA	NA	NA	NA	NA	--	
			1/12/1998	6105.88	1251.0	6.0	82.0	24.0	1363.0	--	
			4/14/1998	6105.93	1100.0	7.2	28.0	12.0	1147.2	--	
			7/1/1998	6106.14	1400.0	50.0	120.0	124.0	1694.0	--	10.0 J
			10/5/1998	NC	NA	NA	NA	NA	NA	0.63	
			11/9/1998	NC	NA	NA	NA	NA	NA	0.26	
			1/27/1999	NC	NA	NA	NA	NA	NA	0.40	
		Well destroyed during Burlington excavation									
MW-5			10/29/1997	6075.23	5934	10024	709	8188	24855	--	
Downgradient along wash			1/12/1998	6075.09	7521	11213	779	8436	27949	--	
	6090.83		4/14/1998	6075.33	7000	11000	720	7800	26520	--	
			7/1/1998	6075.43	6500	10000	780	7500	24780	--	800
			10/5/1998	6074.48	6800	8400	740	6900	22840	--	
			11/9/1998	6074.89	6200	8200	670	6500	21570	--	
			1/27/1999	6074.87	6400	8900	660	6700	22660	--	
			5/5/1999	6075.23	6800	9800	900	7800	25300	--	
		(Burlington)	5/26/1999	NR	6600	10000	650	8100	25350	--	
			7/12/1999	6075.60	6300	10000	750	8800	25850	--	
			8/17/1999	6076.23	5400	9800	670	7500	23370	Sheen	
		(Eco. Split)	8/17/1999	6076.23	5900	8900	500	6200	21500	Sheen	
		(prelim.)	10/21/1999	6076.17	5200	9600	650	6900	22350	Sheen	
			1/27/2000	6076.10	4700	10000	680	7400	22780	sewer/black	
		BR/onsite labs	6/13/2000	6076.12	8400	19000	1700	22000	51100	sheeen	
		ACZ LABS	3/29/2001	lost	3890	9600	640	7730	21860	h2s odor	NR
		h2s odor	6/26/2001	6075.48	3800	11000	700	9000	24500		7400
		h2s odor	9/18/2001	6074.96	4100	11000	750	10000	25850		2200
		h2s odor	12/18/2001	6075.00	3200	9700	800	7800	21300	Sheen	6400
TMW-1 TEMP WELL IN WASH BETWEEN MW5 AND 7											
	NONE		1/27/2000	18.09 dtw	930	1400	350	6700	9380		
		BR/onsite labs	6/13/2000	17.44 dtw	2400	3400	550	9100	15450	Film	
		Lost									
			06/26/01	18.23 DTW	1100	3500	330	5500	10430		1300
			9/18/2001	18.99	well purged dry no sample collected						
		Dry	12/18/2001	19.59	No sample collected						
MW-6			11/12/1997	NC	NA	NA	NA	NA	NA	4.80	
PNM drip pit/product recovery			1/12/1998	NC	NA	NA	NA	NA	NA	4.71	
	6124.87		4/14/1998	NM	NA	NA	NA	NA	NA	pumping	
			7/1/1998	NC	NA	NA	NA	NA	NA	pumping	
			10/5/1998	NC	NA	NA	NA	NA	NA	pumping	
			11/9/1998	NC	NA	NA	NA	NA	NA	2.27	
		Well destroyed during Burlington excavation									

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-7			1/12/1998	6047.12	780.0	246.0	258.0	3942.0	5226.0	--	
Downgradient along wash; adj pipeline			04/14/98	6047.09	820.0	340.0	190.0	2450.0	3800.0	--	
	6066.91		07/01/98	6047.03	950.0	440.0	200.0	3020.0	4610.0	--	200.0
			10/05/98	6046.77	1600.0	930.0	180.0	1530.0	4240.0	--	
			11/09/98	6046.77	1800.0	1000.0	160.0	1240.0	4200.0	--	
			01/27/99	6046.77	2100.0	1000.0	160.0	1050.0	4310.0	--	
			05/05/99	6046.44	210.0	2.9	30.0	147.0	389.9	--	
	(Burlington)		05/26/99	NR	190.0	7.4	32.0	150.0	379.4	--	
			7/12/1999	6046.04	130.0	7.2	22.0	101.3	260.5	--	
			8/17/1999	6046.61	NA	NA	NA	NA	NA	--	
	(prelim.)		10/21/1999	6047.47	260.0	11.0	15.0	89.0	375.0	--	
			01/27/00	6047.65	670.0	580.0	54.0	680.0	1984.0		
		BR/onsite labs	06/17/00	6047.87	420.0	1100.0	75.0	1400.0	2995.0		
		ACZ/lost	09/29/01	lost	830.0	150.0	320.0	1790.0	3090.0		
		H2S odor	06/26/01	6047.38	540.0	330.0	250.0	1410.0	2530.0		310.0
		H2S odor	09/18/01	6047.06	870.0	560.0	320.0	2020.0	3770.0		620.0
		h2s odor	12/18/01	6046.71	400.0	30.0	160.0	885.0	1475.0	Sheen	790.0
MW-8			1/12/1998	6104.71	6410.0	17301.0	693.0	9397.0	33801.0	Sheen	
Upgradient PNM; downgradient Burlington			4/14/1998	6104.41	NA	NA	NA	NA	NA	0.37	
	6122.97		7/1/1998	6105.14	NA	NA	NA	NA	NA	0.37	
			10/5/1998	6104.54	NA	NA	NA	NA	NA	0.13	
			11/9/1998	6104.77	NA	NA	NA	NA	NA	0.02	
			Well destroyed during Burlington excavation								
MW-9			7/1/1998	6100.12	12.0	0.2	0.6	1.3	14.1	--	<30.0
Upgradient PNM, crossgradient Burlington			10/5/1998	6100.03	16.0	<1.0	1.1	2.1	19.2	--	
	6122.52		11/9/1998	6100.40	12.0	<1.0	<1.0	<3.0	12.0	--	
			1/27/1999	6099.23	0.8	<0.5	<0.5	2.2	3.0	--	
			5/5/1999	6099.92	73.0	<0.5	2.2	1.6	76.8	--	
			5/26/1999	6100.07	120.0	<0.5	2.5	1.8	124.3	--	
		(Burlington)	5/26/1999	NR	120.0	<0.5	1.6	0.8	122.4	--	
			7/12/1999	6100.18	140.0	<0.5	1.5	<0.5	141.5	--	
		(prelim.)	8/17/1999	6100.92	290.0	<0.5	0.6	<1.5	290.6	--	
		(prelim.)	10/21/1999	6100.73	320.0	<0.5	0.6	<1.5	320.0	Sheen	
			1/27/2000	6100.62	130.0	nd	nd	nd	130.0		
		BR/onsite labs	6/13/2000	6100.54	<0.5	1.9	<0.5	2.5	4.4		
		ACZ/lost	3/29/2001	lost	<0.2	<0.2	<0.2	<0.2	0.0		
			6/26/2001	6099.90	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
			9/18/2001	6099.85	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		no odor	12/18/2001	6099.82	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
MW-10			7/1/1998	NC	NA	NA	NA	NA	NA	2.00	
Upgradient PNM, downgradient Burlington			10/5/1998	NC	NA	NA	NA	NA	NA	1.91	
	6122.5		11/9/1998	NC	NA	NA	NA	NA	NA	2.10	
			Well destroyed during Burlington excavation								
MW-11			1/27/1999	5958.60	<0.5	2.5	0.7	13.1	16.3	--	
Downgradient well - 1800', near road	6015.75		5/5/1999	5958.65	<0.5	<0.5	<0.5	<1.5	0.0	--	
		(Burlington)	5/26/1999	NR	0.8	1.7	<0.5	1.1	3.6	--	
			7/12/1999	5958.27	NA	NA	NA	NA	NA	--	
			8/17/1999	5958.62	NA	NA	NA	NA	NA	--	
	(prelim.)		10/21/1999	5958.90	<0.5	<0.5	<0.5	<1.5	<3.0	--	
			1/27/2000	5959.10	<0.5	<0.5	<0.5	<0.5	<0.5		
		BR/onsite labs	6/13/2000	5959.21	<0.5	<0.5	<0.5	0.9	0.9		
		ACZ/lost	3/29/2001	lost	<0.2	<0.2	<0.2	<0.2	0.0		NR
		rdish brn h2o	6/26/2001	2959.14	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		rdish brn h2o	9/18/2001	5959.26	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		no odor	12/18/2001	5959.25	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
MW-12 (source well @ MW-6)	6109.02		5/5/1999		790.0	840.0	260.0	2880.0	4770.0	--	
			5/5/1999		1200	13000	5100	68000	87300.0	--	
SOIL sample TPH (ppm)	2350		5/26/1999	6099.45	1900	820	200	1720	4640.0	Sheen	
		(Burlington)	5/26/1999		1800	640	160	1600	4200.0	--	
			7/12/1999	6099.63	4500	760	400	3100	8760.0	Sheen	
		(duplicate)	7/12/1999		4600	730	390	3080	8800.0	Sheen	
			8/17/1999	6100.56	4800	5000	320	3390	13510.0	Sheen	
		(Eco. Split)	8/17/1999	6100.56	5900	6100	390	4100	16490.0	Sheen	
		(prelim.)	10/21/1999	6100.17	5600	650	540	2890	9680.0	Sheen	
			1/27/2000	6070.49	4100	550	430	2379	7459.0		
		BR/onsite labs	6/13/2000	6085.43	5000	1300	490	2700	9490.0		
		ACZ/lost	3/29/2001	LOST	5170	1790	366	2520	9846.0		NR
		h2s odor	6/26/2001	6084.8	4800	1900	390	2560	9650.0		280.0
		h2s odor	9/18/2001	6084.71	5100	2400	450	2820	10750.0	Sheen	320.0
		h2s odor	12/18/2001	6084.72	4000	1500	320	1880	7700.0	Sheen	1600.0
MW-13	6122.76		5/26/1999	--	1800.0	25.0	12.0	35.3	1872.3	--	
BROG well between pit & MW-4		(Burlington)	5/26/1999	--	2100	22	8.8	29	2159.8	--	
			7/12/1999	6104.3	2100	14	9.9	10.9	2134.8	--	
			8/17/1999	6104.7	1900	<10	<10	<30	1900.0	--	
		(prelim.)	10/21/1999	6104.71	1600	<10	<10	<30	1600.0		
			1/27/2000	6104.44	1600	2.2	1.5	0.5	1604.2		
		BR/onsite labs	6/13/2000	6104.59	730	<2.5	<2.5	<2.5	730.0		
MW-14		--	10/21/1999	--	not sampled - 2 feet of free product					1.92	
BROG well near TPW07			depth to water 22.14, depth to product 20.22 (no datum surveyed yet)								
			1/27/2000	Not sampled 2.5 feet free product		depth to water 22.90		depth to product 20.40			
		BR/onsite labs	6/13/2000	Not sampled 2.16 feet product		Depth to water 22.51		depth to product 22.51			

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-15	No survey data	(prelim.)	10/21/1999	--	<0.5	1.2	<0.5	1.5	2.7	--	
BROG well near separator pit	ground level MP			depth to water 17.84 (no datum surveyed yet)							
			1/27/2000		<0.5	<0.5	<0.5	<0.5	0.0		
				depth to water (DTW) 18.36 (no survey data available)							
			6/13/2000	0	<0.5	<0.5	<0.5	<0.5	<0.5		
				18.08 DTW							
		ACZ/lost	3/29/2001	lost	<0.2	<0.2	<0.2	<0.2	0		NR
		Onsite	6/29/2001	19.66 DTW	<0.5	<0.5	<0.5	<0.5	0.0		<1.0
		Onsite	9/18/2001	19.22 DTW	<0.5	<0.5	<0.5	<0.5	0.0		<1.0
		no odor	12/18/2001	19.12 DTW	<0.5	<0.5	<0.5	<0.5	0.0		<1.0
MW-16	No survey	(prelim.)	10/21/1999	--	220.0	300.0	5.4	142.0	667.4	--	
Recovery well near excavation		(Burlington)	10/21/1999	--	214.0	268.0	4.0	151.0	637.0	--	
				depth to water 14.93 (no datum surveyed yet)							
			1/27/2000		1600	170	56	225	2051.0		
				depth to water 24.22 (no survey data available			Note stick up added to well in 2000				
		BR/onsite labs	6/13/2000	24.16 DTW	8700	430	680	2200	12010.0		
				No sample collected well could not be found due to excavation materials adjacent to well							
		H2s odor	6/29/2001	24.91	9300	1100	810	3410	14644.9		3100.0
			9/18/2001	24.77	11000	6400	590	6400	24414.8	sheen	5400.0
		HC odor	12/18/2001	24.82	9900	6900	570	7400	24770.0	sheen	6300.0
TMP-1			11/11/1997	NM	2171.0	4185.0	190.0	2856.0	9402.0	--	
11			7/1/1998	6057.61	2000.0	4300.0	180.0	2700.0	9180.0	--	80.0
MP =	6076.48		11/9/1998	NM	980.0	1900.0	84.0	1540.0	4504.0	--	
		(prelim.)	10/21/1999	6058.11	1000.0	3100.0	410.0	9700.0	14210.0		
EB WELL			11/25/1997	5959.74	<0.2	<0.2	<0.2	<0.2	<0.2	--	
Downgradient private well			10/21/1999	5960.93							
MP =	6028.64										
Burlington Excavation	Surface Water		2/11/1998	15'	1800	1700	<25	1420	4920	rainbow	
	Surface Water		7/1/1998	6106.26	10.0	0.4	0.1	1.5	12.0	rainbow	<30.0
	Surface Water		11/9/1998	NM	2.9	16.0	<1	18.1	37.0	--	
	Soil - @ water		7/1/1998	NM	36000.0	560000.0	100000.0	1430000.0	2126000.0	--	
Intermittent Seep	Surface Water		7/1/1998	6098.72	1.6	0.7	0.6	0.36	3.26	rainbow	6.0 J
			4/14/1999		40.0	2.2	2.1	19.00	63.30	rainbow	
		(prelim.)	10/21/1999		65.0	230.0	11.0	434.00	740.00		
		ACZ/lost	3/29/2001	none	11.6	<0.2	0.7J	25.40	37.00		NR
		seep	6/29/2001	none	<0.5	<0.5	<0.5	<1.0	0.00		<0.5
		seep	9/18/2001	none	<0.5	<0.5	<0.5	<1.0	0.00		<0.5
		seep	12/18/2001	none	<0.5	<0.5	<0.5	<1.0	0.00		<0.5

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
Burlington Temporary Monitoring Well Sampling											

Sample	Matrix	Date Sampled	Depth (ft)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Total BTEX (ppb)	TPH (mg/Kg)	PID (ppm)
TPW-01	Water	6/5/1997		20.0	<1	<1	<1	20.0	NA	0
	Soil		25-26'	<1	<1	<1	<1	<1	<10	
TPW-02	Water	6/5/1997	Product	NA	NA	NA	NA	NA	NA	187
	Soil		25-26'	2000.0	4600.0	14000.0	39000.0	59600.0	600.0	
TPW-03	Water	6/5/1997	Dry	NA	NA	NA	NA	NA	NA	0
	Soil	6/5/1997	25-26	<1	<1	<1	<1	<1	25	
TPW-04	Water	6/6/1997		2000.0	3100.0	57.0	810.0	5967.0	NA	33
	Soil	6/6/1997	20-21.5'	28.0	3.4	76.0	40.0	147.4	52	
TPW-05	Water	6/6/1997		5800.0	460.0	16000.0	7000.0	29260.0	NA	470
	Soil	6/6/1997	15-16'	4000.0	10000.0	4500.0	28000.0	46500.0	61	
TPW-06	Water	6/6/1997		1600.0	3400.0	48.0	690.0	5738.0	NA	61
	Soil	6/6/1997	16-16.5'	<1	<1	2.8	4.8	7.6	11	
TPW-07	Water	6/6/1997		5300.0	18000.0	620.0	9300.0	33220.0	NA	948
	Soil	6/6/1997	15-16'	7000.0	74000.0	20000.0	170000.0	271000.0	250	
Burlington Profile Borings										
SB-1 (near BROG excavation)	Soil	10/8/1998	15-16'	335	697	181	1808	3021	26.4	1555
SB-2 (near PNM former pit)	Soil	10/8/1998	15'	1950	9960	2460	22590	36960	194	>2000
PNM Test Holes along Wash									**PID (ppm)**	
TH-1	Soil	11/11/1997	12.7'	NA	NA	NA	NA	NA	1412	
TH-2	Soil	11/11/1997	14.4'	NA	NA	NA	NA	NA	1357	
TH-3	Soil	11/11/1997	16.5'	NA	NA	NA	NA	NA	0	
TH-4	Soil	11/11/1997	15'	NA	NA	NA	NA	NA	279	
TH-5	Soil	11/11/1997	14.5'	NA	NA	NA	NA	NA	1211	
TH-6	Soil	11/11/1997	16'	NA	NA	NA	NA	NA	0	
TH-7 (temporary well)	Water	11/11/1997	NA	2171.0	4185.0	190.0	2856.0	170000.0	279	
TH-8	Soil	11/12/1997	14'	NA	NA	NA	NA	NA	0	

Notes: All wells sampled byPNM unless otherwise noted in the "Sample Notes" column.
J = Analyte detected below Practical Quantitation Limit
B = Analyte detected in the associated Method Blank
NM = Not measured
NA = Not analyzed
NC = Not Calculated (product)

2001 Excavation standing water	none	grab	6/26/2002	None	2	<0.5	<0.5	<0.5	2		<0.5

L31380

Chain of Custody Record

PHILIP ENVIRONMENTAL
4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2865

Project Name B.R. Well Samplins
Project Number 62800288 Phase . Task 0301 .
Samplers C. Maez
Laboratory Name ACZ LABS
Location Steamboat Springs CO.

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX 8021	Comments
HAMPTON MW5	3-29-01	1203	H_2O	2		HAMPTON #4M
HAMPTON TPW7	3-29-01	0925	H_2O	2		HAMPTON #4M open pit
HAMPTON MW7	3-29-01	1445	H_2O	2		" "
HAMPTON MW9	3-29-01	1026	H_2O	2		" "
HAMPTON MW11	3-29-01	1421	H_2O	2		" "
HAMPTON MW12	3-29-01	1122	H_2O	2		" "
HAMPTON MW15	3-29-01	1004	H_2O	2		" "
HAMPTON Seep	3-29-01	1140	H_2O	2		HAMPTON #4M Seep in wash

Relinquished by:

Signature	Date	Time
Chris A. May	3-29-01	1600

Received By:

Signature	Date	Time

Samples Iced: ☑ Yes ☐ No

Preservatives (ONLY for Water Samples)
- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☑ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☑ Other (Specify) HCL
- ☐ Other (Specify) _____

Carrier: U.P.S. Airbill No.

Shipping and Lab Notes:

PE-176 4/95

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Maddox MW 1

ACZ ID: *L31380-05*
Date Sampled: 03/28/01 25:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2	9.8		ug/L	0.2	0.5
Ethylbenzene	000100-41-4	1.3		ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7	2.4		ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	109		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Maddox MW 2

ACZ ID: *L31380-06*
Date Sampled: 03/28/01 45:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/2/01
Analysis Date: 4/2/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2		U	ug/L	0.2	0.5
Ethylbenzene	000100-41-4		U	ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7		U	ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	101		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Maddox MW 3

ACZ ID: *L31380-07*
Date Sampled: 03/28/01 05:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/2/01
Analysis Date: 4/2/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2		U	ug/L	0.2	0.5
Ethylbenzene	000100-41-4		U	ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7		U	ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	101		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton MW 5

ACZ ID: *L31380-08*
Date Sampled: 03/29/01 03:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/2/01
Analysis Date: 4/2/01
Dilution Factor: 50

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2	3890		ug/L	10	30
Ethylbenzene	000100-41-4	640		ug/L	10	50
Toluene	000108-88-3	9600		ug/L	10	50
Xylenes	001330-20-7	7730		ug/L	10	50

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	108		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton MW 7

ACZ ID: *L31380-10*
Date Sampled: 03/29/01 45:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 50

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2	830		ug/L	10	30
Ethylbenzene	000100-41-4	320		ug/L	10	50
Toluene	000108-88-3	150		ug/L	10	50
Xylenes	001330-20-7	1790		ug/L	10	50

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	106		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton MW 9

ACZ ID: *L31380-11*
Date Sampled: 03/29/01 20:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2		U	ug/L	0.2	0.5
Ethylbenzene	000100-41-4		U	ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7		U	ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	99		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton MW 11

ACZ ID: *L31380-12*
Date Sampled: 03/29/01 21:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2		U	ug/L	0.2	0.5
Ethylbenzene	000100-41-4		U	ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7		U	ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	97		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton MW 12

ACZ ID: *L31380-13*
Date Sampled: 03/29/01 22:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 25

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2	5170		ug/L	5	10
Ethylbenzene	000100-41-4	366		ug/L	5	30
Toluene	000108-88-3	1790		ug/L	5	30
Xylenes	001330-20-7	2620		ug/L	5	30

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	114		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton MW 15

ACZ ID: *L31380-14*
Date Sampled: 03/29/01 04:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2		U	ug/L	0.2	0.5
Ethylbenzene	000100-41-4		U	ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7		U	ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	97		%	80	120

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Organic Analytical Results

Burlington Resources, Inc.

Project ID: B.R. Well Sampling
Sample ID: Hampton Seep

ACZ ID: *L31380-15*
Date Sampled: 03/29/01 40:00
Date Received: 03/31/2001
Sample Matrix: Ground Water

Benzene, Toluene, Ethylbenzene & Xylenes

Analysis Method: M8020
Extract Method: Method

Analyst: smp
Extract Date: 4/3/01
Analysis Date: 4/3/01
Dilution Factor: 1

Compound

Parameter	CAS	Result	Qual	Units	MDL	PQL
Benzene	000071-43-2	11.6		ug/L	0.2	0.5
Ethylbenzene	000100-41-4	0.7	J	ug/L	0.2	1
Toluene	000108-88-3		U	ug/L	0.2	1
Xylenes	001330-20-7	25.4		ug/L	0.2	1

Surrogate Recoveries

Parameter	CAS	Result	Qual	Units	MDL	PQL
Bromofluorobenzene	00000460004	106		%	80	120

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Organic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality contreol sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
E	Analyte concentration exceeds calibration range.
P	Analyte concentration differs from second detector by more than 40%.
M	Analyte concentration is estimated due to matrix interferences.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990
(5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update II, September 1994.
(6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculation
(2) Organic analyses are reported on an "as received" basis.

REPIN03.11.00.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic QC Summary

Burlington Resources, Inc.
Project ID: ***B.R. Well Sampling***
ACZ Project ID: ***L31380***

BTX

EPA 8020

WG119349

Matrix Spike — Sample ID: L31380-15MS — PCN/SCN: OP000929-1 — Analyzed: 04/02/2001

Compound	QC	Sample	Found	Units	Rec (%)	Lower	Upper	RPD (%)	Limit	Qual
Benzene	25	11.55	37.5	µg/L	103.8	50	150			
Toluene	75		79.6	µg/L	106.1	50	150			
Ethylbenzene	25	0.66	27.0	µg/L	105.5	50	150			
Xylenes Total	100	25.39	133.7	µg/L	108.3	50	150			
Bromofluorobenzene (Surr)	50		50.9	µg/L	102	85	115			

Matrix Spike Duplicate — Sample ID: L31380-15MSD — PCN/SCN: OP000929-1 — Analyzed: 04/02/2001

Compound	QC	Sample	Found	Units	Rec (%)	Lower	Upper	RPD (%)	Limit	Qual
Benzene	25	11.55	37.7	µg/L	104.4	50	150	0.4	20	
Toluene	75		79.9	µg/L	106.6	50	150	0.4	20	
Ethylbenzene	25	0.66	27.2	µg/L	106.3	50	150	0.7	20	
Xylenes Total	100	25.39	135.2	µg/L	109.8	50	150	1.1	20	
Bromofluorobenzene (Surr)	50		53.05	µg/L	106.1	85	115			

CCV — Sample ID: WG119349CCV1 — PCN/SCN: OP000929-1 — Analyzed: 04/02/2001

Compound	QC	Sample	Found	Units	Rec (%)	Lower	Upper	RPD (%)	Limit	Qual
Benzene	25		26	µg/L	104.0	85	115			
Toluene	75		80.4	µg/L	107.2	85	115			
Ethylbenzene	25		26.4	µg/L	105.6	85	115			
Xylenes Total	100		105.8	µg/L	105.8	85	115			
Bromofluorobenzene (Surr)	50		49.93	µg/L	99.9	85	115			

CCV — Sample ID: WG119349CCV2 — PCN/SCN: OP000929-1 — Analyzed: 04/02/2001

Compound	QC	Sample	Found	Units	Rec (%)	Lower	Upper	RPD (%)	Limit	Qual
Benzene	25		27.1	µg/L	108.4	85	115			
Toluene	75		83.5	µg/L	111.3	85	115			
Ethylbenzene	25		27	µg/L	108.0	85	115			
Xylenes Total	100		109.6	µg/L	109.6	85	115			
Bromofluorobenzene (Surr)	50		52.2	µg/L	104.4	85	115			

CCV — Sample ID: WG119349CCV3 — PCN/SCN: OP000929-1 — Analyzed: 04/02/2001

Compound	QC	Sample	Found	Units	Rec (%)	Lower	Upper	RPD (%)	Limit	Qual
Benzene	25		26.5	µg/L	106.0	85	115			
Toluene	75		80.7	µg/L	107.6	85	115			
Ethylbenzene	25		26.8	µg/L	107.2	85	115			
Xylenes Total	100		108	µg/L	108.0	85	115			
Bromofluorobenzene (Surr)	50		51.58	µg/L	103.2	85	115			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic QC Summary

Burlington Resources, Inc.
Project ID: ***B.R. Well Sampling***
ACZ Project ID: ***L31380***

BTX

EPA 8020

WG119349

Prep Blank **Sample ID: WG119349PBW** **Analyzed: 04/02/2001**

Compound	QC	Sample	Found	Units	Rec (%)	Lower	Upper	RPD (%)	Limit	Qual
Benzene			Not Detected							U
Toluene			Not Detected							U
Ethylbenzene			Not Detected							U
Xylenes Total			Not Detected							U
Bromofluorobenzene (Surr)	50		49.54	µg/L	99.1	85	115			

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
Project ID: B.R. Well Sampling

ACZ Project ID: L31380
Date Received: 3/31/01
Received By: GEORGE

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			√
2) Are the custody seals on the cooler intact?	√		
3) Are the custody seals on the sample containers intact?			√
4) Is there a Chain of Custody or other directive shipping papers present?	√		
5) Is the Chain of Custody complete?	√		
6) Is the Chain of Custody in agreement with the samples received?	√		
7) Is there enough sample for all requested analyses?	√		
8) Are all samples within holding times for requested analyses?	√		
9) Were all sample containers received intact?	√		
10) Are the temperature blanks present?	√		
11) Are the trip blanks (VOA and/or Cyanide) present?			√
12) Are samples requiring no headspace, headspace free?	√		
13) Do the samples that require a Foreign Soils Permit have one?			√

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
ACZ		5.4	15

Notes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
Project ID: B.R. Well Sampling

ACZ Project ID: L31380
Date Received: 3/31/01
Received By: GEORGE

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG< 2	B < 2	BG< 2	O < 2	T >12	P >12	N/A	RAD
L31380-01	Standard Oil MW										√	
L31380-02	Johnson Fed. M										√	
L31380-03	Fogelson MW 1										√	
L31380-04	Cozzens MW 4										√	
L31380-05	Maddox MW 1										√	
L31380-06	Maddox MW 2										√	
L31380-07	Maddox MW 3										√	
L31380-08	Hampton MW 5										√	
L31380-09	Hampton T pw 7										√	
L31380-10	Hampton MW 7										√	
L31380-11	Hampton MW 9										√	
L31380-12	Hampton MW 11										√	
L31380-13	Hampton MW 12										√	
L31380-14	Hampton MW 15										√	
L31380-15	Hampton Seep										√	

WELL OBSERVATION DATA

Project Name Burlington Resources well Sampling Project No. 6178

Project Manager Lisa Lien Cost Code

Client Company Burlington Resources Date 6-26-01

Site Name HAMPTON 4M

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Depth to Sinking Product (Feet)	Total Well Depth (Feet)	Floating Product Thickness	Sinking Product Thickness	Comments
MW 1	1148			44.94					

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments

Signature Chris Mg Date 6-26-01

Golden Environmental Management GEM

Well Development and Purging Data

Project No. 6178
Task No. —
Well No. MW 15

Development ☐
Purging ☑

Site Name/Identification HAMPTON 4-M
Site Address Rural San Juan CO.

Client/Project Name Burlington Resources BR well Sampling
Project Manager Lisa Winn

Development Criteria
☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 25.32
Initial Depth to Water (feet) 19.66
Height of Water Column in Well (feet) 5.66
Diameter (inches): Well 2" Gravel Pack

Instruments / Serial No. (if applicable)
☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other

Methods of Development
Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☐ Other

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	5.66	0.92x3	2.76
Gravel Pack			
Drilling Fluids			
Total			2.76

Water Disposal
on site in pit

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-26-01	1225		X				.75	.75			18.1	4.50	2890		Cloudy no odor
	1227		X				.75	1.5			15.9	4.50	2750		Cloudy no odor
	1229		X				.75	2.25			15.6	4.57	2640		" "
	1231		X				.75	3			15.3	4.61	2540		" "
	1233		X			22.64	.75	3.75			15.6	4.68	2510		no change

Circle the date and time that the development criteria are met.

Comments SAmpled for BTEX 1253

Developer's Signature (s) [signature] Date 6-26-01 Reviewer [signature] Date 7/3/01

Well Development and Purging Data

Project No. 6178 Development ☐
Task No. Purging ☑
Well No. MW 9 Site Name/Identification HAMPTON 4-1 A Site Address Rural San Juan CO
Page 1 of 1
Client/Project Name Burlington Resources BR well Sampling Project Manager LISA winn

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 32.89
Initial Depth to Water (feet) 22.61
Height of Water Column in Well (feet) 10.28
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.28	167x3	5.01
Gravel Pack			
Drilling Fluids			
Total			5.01

Instruments

	Serial No. (if applicable)
☑ PH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

on site in pit

Sampling Activities

Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-26-01	1319		x				1.25	1.25			14.6	6.86	2810		Cloudy no odor
	1326		x				1.25	2.50			17	6.39	2880		Cloudy no odor
	1329		x				1.25	3.75			15.9	6.50	2860		" "
	1332		x				1.25	5.0			15.6	6.48	2870		" "
	1335		x			31.60	1.25	6.25			15.5	6.47	2910		no change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 1340

Developer's Signature (s) Chris A. May Date 6-26-01 Reviewer J. Winn Date 7/3/01

Well Development and Purging Data

Project No. 6178 Development ☐
Task No. — Purging ☑
Well No. MW 12 Site Name/Identification HAMPTON #1-M Site Address Rural San Juan CO
Client/Project Name Burlington Resources BR well Sampling Project Manager Lisa Winn

Page 1 of 1

Development Criteria
☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 34.40
Initial Depth to Water (feet) 24.22
Height of Water Column in Well (feet) 10.18
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well Cubic Feet	Water Volume in Well Gallons	Gallons to be Removed
Well Casing	10.18	1.66x3	41.98
Gravel Pack			
Drilling Fluids			
Total			41.98

Instruments
	Serial No. (if applicable)
☑ PH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Methods of Development
Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal
on site in pit

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-26-01	1406	x					1	1			21.2	6.38	3080		Cloudy/grey
	1411	x					1	2			18.8	6.36	3000		" "
	1414	x					1	3			18.2	6.34	2930		" "
	1417	x					1	4			18	6.32	2890		" "
	1420	x				32.20	1	5			18.5	6.36	2880		no change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 1430

Developer's Signature (s) [signature] Date 6-26-01 Reviewer [signature] Date 7/3/01

Well Development and Purging Data

Project No. 6178 Development ☐
Task No. — Purging ☑
Well No. MW5 Site Name/Identification HAMPTON 4-M Site Address Rural San Juan CO
Client/Project Name Burlington Resources BR well sampling Project Manager LISA Linn

Page 1 of 1

Development Criteria
☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 20.16
Initial Depth to Water (feet) 15.39
Height of Water Column in Well (feet) 4.77
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.77	0.77×3	2.31
Gravel Pack			
Drilling Fluids			
Total			2.31

Instruments (Serial No. (if applicable))
☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other

Methods of Development
Pump: ☐ Centrifugal ☐ Submersible ☐ Peristaltic
Bailer: ☑ Bottom Valve ☐ Double Check Valve ☐ Stainless-steel Kemmerer
☐ Other

Water Disposal
in pit on site

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-26-01	1442						.5	.5			24.6	6.61	3970		Clear Black Yellow Chips Rotten Odor
	1444						.5	1			21.9	6.56	3740		" "
	1446						.5	1.5			19.6	6.46	3640		" "
	1447						.5	2			18.2	6.29	3580		" "
						18.80	.5	2.5			17.7	6.43	3530		no change

Circle the date and time that the development criteria are met.

Comments Samples for BTEX 1500

Developer's Signature (s) [signature] Date 6-26-01 Reviewer [signature] Date 7/3/01

Well Development and Purging Data

GEM — Golden Environmental Management

Project No. 6178 | Development ☐ | Page 1 of 1
Task No. — | Purging ☑
Well No. TMW 1 | Site Name/Identification HAMPTON 4-M | Site Address Rural San Juan CO.

Client/Project Name Burlington Resources BR well Sampling | Project Manager

Development Criteria
☑ ③ to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 19.61
Initial Depth to Water (feet) 18.23
Height of Water Column in Well (feet) 1.38
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	1.34	0.22x3	0.66
Gravel Pack			
Drilling Fluids			
Total			0.66

Instruments / Serial No. (if applicable)
☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other

Methods of Development
Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal
In pit on site

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-27-01	1004		x				.12				20.1	7.06	4486		Clear yellowish tint [illegible]
	1005		x			19.40	.12				18.2	7.06	4310		no change

Circle the date and time that the development criteria are met.

Comments After Bailing Approximately .24 gal Bailed well Dry Let Recover Sampled for BTEX 1100

Developer's Signature (s) [signature] Date 6-27-01 Reviewer [signature] Date 7/3/01

Well Development and Purging Data

Golden Environmental Management (GEM)

Project No. 6179 | Development ☐ | Purging ☑ | Page 1 of 1

Task No. —

Well No. MW 7 | Site Name/Identification HAMPTON 4-M | Site Address Rural San Juan CO.

Client/Project Name Burlington Resources BR Well Sampling | Project Manager Lisa Winn

Development Criteria

☑ ③ to 5 Casing Volumes of Water Removal

☑ Stabilization of Indicator Parameters

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 21.23

Initial Depth to Water (feet) 19.52

Height of Water Column in Well (feet) 1.71

Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	1.71	0.27x3	0.81
Gravel Pack			
Drilling Fluids			
Total			0.81

Instruments / Serial No. (if applicable)

☑ PH Meter — Hydac

☐ DO Monitor

☑ Conductivity Meter — Hydac

☑ Temperature Meter — Hydac

☐ Other

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

Bailer

☑ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

On Site in pit

Sampling Activities

Type of Container VOA | No. of Containers 2

Parameters Sampled For BTex

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-27-01	1038						.20	.20			17.7	7.25	4210		Cloudy, Black spec, Rotton Egg odor, yellow
	1040						.20	.40			16.2	7.24	4000		" "
	1042						.20	.60			15.7	7.22	3950		" "
	1046						.20	.80			14.9	7.21	3920		" "
						20.67	.20	1			14.7	7.19	3900		No Change

Circle the date and time that the development criteria are met.

Comments Sampled for BTex 1055

Developer's Signature (s) [signature] | Date 6-27-01 | Reviewer [signature] | Date 7/3/01

GEM — Golden Environmental Management

Well Development and Purging Data

Project No. 6179
Task No. —
Well No. MW 16

Development ☐
Purging ☑

Site Name/Identification HAMPTON 4-M
Site Address Rural San Juan CO.

Client/Project Name Burlington Resources BR well Sampling
Project Manager Lisa Winn

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29.68
Initial Depth to Water (feet) 24.71
Height of Water Column in Well (feet) 4.97
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.97	3.24x3	9.72
Gravel Pack			
Drilling Fluids			
Total			9.72

Instruments — Serial No. (if applicable)

☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

on Site in pit

Sampling Activities

Type of Container VOA No. of Containers 2
Parameters Sampled For BTex

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-27-01	1133		X				2	2			21.2	7.11	3840		Cloudy Black specs mild Rotten egg odor
	1136		X				2	4			20	7.13	3650		✓
	1140		X			28.98	2	6			18.3	7.14	3630		no Change

Circle the date and time that the development criteria are met.

Comments After Bailing approximately 6 gal Bailed well Dry Let Recover Sampled for BTEX 1200

Developer's Signature (s) [signature] Date 6-27-01 Reviewer [signature] Date 7/3/01

Well Development and Purging Data

Project No. 6179 Development ☐
Task No. ____ Purging ☑
Well No. MW 11 Site Name/Identification HAMPTON H-M Site Address Rural San Juan Co.
Client/Project Name Burlington Resources D.R. well Sampling Project Manager Lisa Winn

Page 1 of 1

Development Criteria
☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other ____

Water Volume Calculation
Initial Depth of Well (feet) 21.51
Initial Depth to Water (feet) 56.61
Height of Water Column in Well (feet) 14.9
Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	14.9	2.43x3	7.29
Gravel Pack			
Drilling Fluids			
Total			7.29

Instruments / **Serial No. (if applicable)**
☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other ____

Methods of Development
Pump: ☐ Centrifugal ☐ Submersible ☐ Peristaltic
Bailer: ☑ Bottom Valve ☐ Double Check Valve ☐ Stainless-steel Kemmerer
☐ Other ____

Water Disposal
On site in pit

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-27-01	1244		X				1.5	1.5			19.4	7.19	2400		Cloudy Reddish Brown no odor
	1250		X				1.5	3			17.1	7.19	2320		" "
	1259		X				1.5	4.5			16.7	7.18	2320		" "
	1306		X				1.5	6			16.8	7.18	2300		" "
	1314		X			65.45	1.5	7.5			16.8	7.17	2290		no Change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 1330

Developer's Signature (s) Chris Mac Date 6-27-01 Reviewer J Winn Date 7/3/01

11371

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 6-2[illegible]-01

Page: 1 of 1

Purchase Order No.:	Project No. 6178

SEND INVOICE TO

Name	Greg [illegible]
Company	[illegible]
Dept.	
Address	P.O. Box [illegible]
City, State, Zip	Farmington NM [illegible]

REPORT RESULTS TO

Name	Les [illegible]
Title	[illegible]
Company	[illegible]
Mailing Address	[illegible]
City, State, Zip	Farmington NM [illegible]
Telephone No.	
Telefax No.	

PROJECT LOCATION: HAMPTON 4-M

SAMPLER'S SIGNATURE: [illegible]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	PRES.	Number of Containers	BTEX 8021								LAB ID
HAMPTON 4M - MW 15	6-26-01	1253	H_2O	HCL	2	X								
HAMPTON 4M - MW 9	6-26-01	1340	H_2O	HCL	2	X								
HAMPTON 4M - MW 12	6-26-01	1430	H_2O	HCL	2	X								
HAMPTON 4M - MW 5	6-26-01	1500	H_2O	HCL	2	X								
HAMPTON 4M - OPEN HOLE	6-26-01	1230	H_2O	HCL	2	X								
HAMPTON 4M - SEEP	6-26-01	1455	H_2O	HCL	2	X								
HAMPTON 4M - TMW 1	6-27-01	1100	H_2O	HCL	2	X								
HAMPTON 4M - MW 7	6-27-01	1055	H_2O	HCL	2	X								
HAMPTON 4M - MW 16	6-27-01	1200	H_2O	HCL	2	X								
HAMPTON 4M - MW 11	6-27-01	1330	H_2O	HCL	2	X								

Relinquished by: [illegible]	Date/Time / 0800	Received by: [illegible]	Date/Time [illegible]
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: ____________________ Date ____________

(Client Signature Must Accompany Request)

Special Instructions / Remarks:

11371

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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Date: 6-29-01

Page: 1 of 1

Purchase Order No.:

Project No. 6178

SEND INVOICE TO
Name Greg Wurtz
Company Burlington Resources
Dept.
Address P.O. Box 4289
City, State, Zip Farmington NM 87499-4289

REPORT RESULTS TO
Name Lisa Winn
Title Project Manager
Company BEM
Mailing Address 906 S. [illegible] Blvd
City, State, Zip Farmington NM 87401
Telephone No.
Telefax No.

PROJECT LOCATION: HAMPTON 4-M

SAMPLER'S SIGNATURE: [signature]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	BTEX 8021								LAB ID
HAMPTON 4M - MW 15	6-26-01	1253	H_2O	HCL	2	X								0106054-01A
HAMPTON 4M - MW 9	6-26-01	1340	H_2O	HCL	2	X								-02A
HAMPTON 4M - MW 12	6-26-01	1430	H_2O	HCL	2	X								-03A
HAMPTON 4M - MW 5	6-26-01	1500	H_2O	HCL	2	X								-04A
HAMPTON 4M - OPEN HOLE	6-26-01	1230	H_2O	HCL	2	X								-05A
HAMPTON 4M - Seep	6-26-01	1455	H_2O	HCL	2	X								-06A
HAMPTON 4M - TMW 1	6-27-01	1100	H_2O	HCL	2	X								-07A
HAMPTON 4M - MW 7	6-27-01	1055	H_2O	HCL	2	X								-08A
HAMPTON 4M - MW 16	6-27-01	1200	H_2O	HCL	2	X								-09A
HAMPTON 4M - MW 11	6-27-01	1330	H_2O	HCL	2	X								-10A

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	6/29 / 0800	[signature]	6/29/01 [illegible]

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: ____________ Date ____________
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

To Re-order Call 325-9600 or Fax 325-9764 alphagraphics FORM # 01

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FAX: (505) 327-1496

July 10, 2001

Lisa Winn
Golden Environmental Management
906 San Juan Blvd
Farmington, NM 87401
TEL: (505) 566-9116
FAX (505) 566-9120

RE: Burlington Resources; Hampton 4-M (6178) Order No.: 0106054

Dear Lisa Winn,

On Site Technologies, LTD. received 10 samples on 6/28/2001 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD. **Date:** *10-Jul-01*

CLIENT:	Golden Environmental Management
Project:	Burlington Resources; Hampton 4-M (6178)
Lab Order:	0106054

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 15
Lab ID:	0106054-01A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 12:53:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	7/2/2001
Toluene	ND	0.5		µg/L	1	7/2/2001
Ethylbenzene	ND	0.5		µg/L	1	7/2/2001
m,p-Xylene	ND	1		µg/L	1	7/2/2001
o-Xylene	ND	0.5		µg/L	1	7/2/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 9
Lab ID:	0106054-02A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 1:40:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	7/2/2001
Toluene	ND	0.5		µg/L	1	7/2/2001
Ethylbenzene	ND	0.5		µg/L	1	7/2/2001
m,p-Xylene	ND	1		µg/L	1	7/2/2001
o-Xylene	ND	0.5		µg/L	1	7/2/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 5
Lab ID:	0106054-04A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 3:00:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DC**
Benzene	3800	50		µg/L	100	7/3/2001
Toluene	11000	50		µg/L	100	7/3/2001
Ethylbenzene	700	50		µg/L	100	7/3/2001
m,p-Xylene	7400	100		µg/L	100	7/3/2001
o-Xylene	1600	50		µg/L	100	7/3/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	Open Hole
Lab ID:	0106054-05A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 12:30:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	2	0.5		µg/L	1	7/2/2001
Toluene	ND	0.5		µg/L	1	7/2/2001
Ethylbenzene	ND	0.5		µg/L	1	7/2/2001
m,p-Xylene	ND	1		µg/L	1	7/2/2001
o-Xylene	ND	0.5		µg/L	1	7/2/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	TMW 1
Lab ID:	0106054-07A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 11:00:00 AM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	1100	25		µg/L	50	7/2/2001
Toluene	3500	25		µg/L	50	7/2/2001
Ethylbenzene	330	25		µg/L	50	7/2/2001
m,p-Xylene	4200	50		µg/L	50	7/2/2001
o-Xylene	1300	25		µg/L	50	7/2/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	Seep
Lab ID:	0106054-06A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 2:55:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	7/2/2001
Toluene	ND	0.5		µg/L	1	7/2/2001
Ethylbenzene	ND	0.5		µg/L	1	7/2/2001
m,p-Xylene	ND	1		µg/L	1	7/2/2001
o-Xylene	ND	0.5		µg/L	1	7/2/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 7
Lab ID:	0106054-08A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 10:55:00 AM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	540	5		µg/L	10	7/2/2001
Toluene	330	5		µg/L	10	7/2/2001
Ethylbenzene	250	5		µg/L	10	7/2/2001
m,p-Xylene	1100	10		µg/L	10	7/2/2001
o-Xylene	310	5		µg/L	10	7/2/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 16
Lab ID:	0106054-09A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 12:00:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DC**
Benzene	9300	25		µg/L	50	7/3/2001
Toluene	1100	25		µg/L	50	7/3/2001
Ethylbenzene	810	25		µg/L	50	7/3/2001
m,p-Xylene	3100	50		µg/L	50	7/3/2001
o-Xylene	310	25		µg/L	50	7/3/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 11
Lab ID:	0106054-10A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 1:30:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	7/2/2001
Toluene	ND	0.5		µg/L	1	7/2/2001
Ethylbenzene	ND	0.5		µg/L	1	7/2/2001
m,p-Xylene	ND	1		µg/L	1	7/2/2001
o-Xylene	ND	0.5		µg/L	1	7/2/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *10-Jul-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 4-M
Work Order:	0106054	**Client Sample ID:**	MW 12
Lab ID:	0106054-03A **Matrix:** AQUEOUS	**Collection Date:**	6/26/2001 2:30:00 PM
Project:	Burlington Resources; Hampton 4-M (6178)	**COC Record:**	11371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	4800	50		µg/L	100	7/2/2001
Toluene	1900	50		µg/L	100	7/2/2001
Ethylbenzene	390	50		µg/L	100	7/2/2001
m,p-Xylene	2300	100		µg/L	100	7/2/2001
o-Xylene	260	50		µg/L	100	7/2/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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EMAIL: ONSITE@ONSITELTD.COM

On Site Technologies, LTD.

Date: *10-Jul-01*

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT

Method Blank

Sample ID: **MB1**	Batch ID: **GC-1_010702**	Test Code: **SW8021B**	Units: **µg/L**	Analysis Date **7/2/2001**	Prep Date:
Client ID:	**0106054**	Run ID:	**GC-1_010702A**	SeqNo: **39305**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0671	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0772	0.5									J

Sample ID: **MB1**	Batch ID: **GC-1_010703**	Test Code: **SW8021B**	Units: **µg/L**	Analysis Date **7/3/2001**	Prep Date:
Client ID:	**0106054**	Run ID:	**GC-1_010703A**	SeqNo: **39342**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0845	0.5									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *10-Jul-01*

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0106043-01AMS** Batch ID: **GC-1_010702** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/2/2001** Prep Date:
Client ID: **0106054** Run ID: **GC-1_010702A** SeqNo: **39306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	349.3	2.5	200	160.4	94.5%	70	130				
Ethylbenzene	248.7	2.5	200	76.15	86.3%	70	130				
m,p-Xylene	840.2	5	400	484.8	88.9%	70	130				
Methyl tert-Butyl Ether	207.8	5	200	6.308	100.7%	70	130				
o-Xylene	303.8	2.5	200	110.5	96.7%	70	130				
Toluene	726.7	2.5	200	538.6	94.0%	70	130				

Sample ID: **0106043-01AMSD** Batch ID: **GC-1_010702** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/2/2001** Prep Date:
Client ID: **0106054** Run ID: **GC-1_010702A** SeqNo: **39307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	346.1	2.5	200	160.4	92.9%	70	130	349.3	0.9%	8	
Ethylbenzene	242	2.5	200	76.15	82.9%	70	130	248.7	2.8%	7	
m,p-Xylene	823.1	5	400	484.8	84.6%	70	130	840.2	2.0%	7	
Methyl tert-Butyl Ether	216	5	200	6.308	104.9%	70	130	207.8	3.9%	6	
o-Xylene	304	2.5	200	110.5	96.8%	70	130	303.8	0.1%	6	
Toluene	721.9	2.5	200	538.6	91.6%	70	130	726.7	0.7%	6	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0106054-04AMS** Batch ID: **GC-1_010703** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/3/2001** Prep Date:
Client ID: **MW 5** **0106054** Run ID: **GC-1_010703A** SeqNo: **39343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7728	50	4000	3698	100.7%	70	130				
Ethylbenzene	4853	50	4000	687.4	104.2%	70	130				
m,p-Xylene	15180	100	8000	7196	99.9%	70	130				
Methyl tert-Butyl Ether	4116	100	4000	17.3	102.5%	70	130				
o-Xylene	5788	50	4000	1620	104.2%	70	130				
Toluene	14840	50	4000	10790	101.4%	70	130				

Sample ID: **0106054-04AMSD** Batch ID: **GC-1_010703** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/3/2001** Prep Date:
Client ID: **MW 5** **0106054** Run ID: **GC-1_010703A** SeqNo: **39344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7617	50	4000	3698	98.0%	70	130	7728	1.4%	8	
Ethylbenzene	4782	50	4000	687.4	102.4%	70	130	4853	1.5%	7	
m,p-Xylene	14960	100	8000	7196	97.1%	70	130	15180	1.5%	7	
Methyl tert-Butyl Ether	4146	100	4000	17.3	103.2%	70	130	4116	0.7%	6	
o-Xylene	5722	50	4000	1620	102.6%	70	130	5788	1.1%	6	
Toluene	14610	50	4000	10790	95.6%	70	130	14840	1.6%	6	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *10-Jul-01*

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_010702** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/2/2001** Prep Date:

Client ID: **0106054** Run ID: **GC-1_010702A** SeqNo: **39304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.64	0.5	40	0.0671	103.9%	80	120				
Ethylbenzene	42.33	0.5	40	0	105.8%	80	120				
m,p-Xylene	82.72	1	80	0	103.4%	80	120				
Methyl tert-Butyl Ether	41.32	1	40	0	103.3%	80	120				
o-Xylene	42.39	0.5	40	0	106.0%	80	120				
Toluene	41.83	0.5	40	0.0772	104.4%	80	120				

Sample ID: **LCS WATER** Batch ID: **GC-1_010703** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/3/2001** Prep Date:

Client ID: **0106054** Run ID: **GC-1_010703A** SeqNo: **39341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.39	0.5	40	0	103.5%	80	120				
Ethylbenzene	42.14	0.5	40	0	105.4%	80	120				
m,p-Xylene	82.55	1	80	0	103.2%	80	120				
Methyl tert-Butyl Ether	41.09	1	40	0	102.7%	80	120				
o-Xylene	42.21	0.5	40	0	105.5%	80	120				
Toluene	41.73	0.5	40	0.0845	104.1%	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *10-Jul-01*

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0105** Batch ID: **GC-1_010702** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/2/2001** Prep Date:
Client ID: **0106054** Run ID: **GC-1_010702A** SeqNo: **39301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.85	0.5	20	0	109.3%	85	115				
Ethylbenzene	22.33	0.5	20	0	111.6%	85	115				
m,p-Xylene	44.01	1	40	0	110.0%	85	115				
Methyl tert-Butyl Ether	21.24	1	20	0	106.2%	85	115				
o-Xylene	22.3	0.5	20	0	111.5%	85	115				
Toluene	22.06	0.5	20	0	110.3%	85	115				
1,4-Difluorobenzene	113.5	0	120	0	94.6%	70	130				
4-Bromochlorobenzene	122.9	0	120	0	102.4%	70	130				
Fluorobenzene	113.7	0	120	0	94.7%	70	130				

Sample ID: **CCV2 BTEX_0105** Batch ID: **GC-1_010702** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/2/2001** Prep Date:
Client ID: **0106054** Run ID: **GC-1_010702A** SeqNo: **39302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21	0.5	20	0	105.0%	85	115				
Ethylbenzene	21.32	0.5	20	0	106.6%	85	115				
m,p-Xylene	42.24	1	40	0	105.6%	85	115				
Methyl tert-Butyl Ether	21.53	1	20	0	107.6%	85	115				
o-Xylene	21.52	0.5	20	0	107.6%	85	115				
Toluene	21.19	0.5	20	0	105.9%	85	115				
1,4-Difluorobenzene	114	0	120	0	95.0%	70	130				
4-Bromochlorobenzene	120.8	0	120	0	100.6%	70	130				
Fluorobenzene	112.8	0	120	0	94.0%	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0105** Batch ID: **GC-1_010702** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/2/2001** Prep Date:
Client ID: **0106054** Run ID: **GC-1_010702A** SeqNo: **39303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.04	0.5	40	0	102.6%	85	115				
Ethylbenzene	41.46	0.5	40	0	103.7%	85	115				
m,p-Xylene	81.21	1	80	0	101.5%	85	115				
Methyl tert-Butyl Ether	41.07	1	40	0	102.7%	85	115				
o-Xylene	41.79	0.5	40	0	104.5%	85	115				
Toluene	41.39	0.5	40	0	103.5%	85	115				
1,4-Difluorobenzene	112.7	0	120	0	93.9%	70	130				
4-Bromochlorobenzene	119	0	120	0	99.1%	70	130				
Fluorobenzene	112.4	0	120	0	93.7%	70	130				

Sample ID: **CCV1 BTEX_0105** Batch ID: **GC-1_010703** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/3/2001** Prep Date:
Client ID: **0106054** Run ID: **GC-1_010703A** SeqNo: **39339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.82	0.5	20	0	109.1%	85	115				
Ethylbenzene	22.18	0.5	20	0	110.9%	85	115				
m,p-Xylene	43.77	1	40	0	109.4%	85	115				
Methyl tert-Butyl Ether	21.38	1	20	0	106.9%	85	115				
o-Xylene	22.2	0.5	20	0	111.0%	85	115				
Toluene	22.01	0.5	20	0	110.0%	85	115				
1,4-Difluorobenzene	113.8	0	120	0	94.8%	70	130				
4-Bromochlorobenzene	122.8	0	120	0	102.4%	70	130				
Fluorobenzene	113.2	0	120	0	94.3%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-M (6178)

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV2 BTEX_0105** Batch ID: **GC-1_010703** Test Code: **SW8021B** Units: **µg/L** Analysis Date **7/3/2001** Prep Date:

Client ID: **0106054** Run ID: **GC-1_010703A** SeqNo: **39340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.65	0.5	20	0	108.2%	85	115				
Ethylbenzene	21.8	0.5	20	0	109.0%	85	115				
m,p-Xylene	43.01	1	40	0	107.5%	85	115				
Methyl tert-Butyl Ether	21.34	1	20	0	106.7%	85	115				
o-Xylene	21.9	0.5	20	0	109.5%	85	115				
Toluene	21.68	0.5	20	0	108.4%	85	115				
1,4-Difluorobenzene	113.8	0	120	0	94.8%	70	130				
4-Bromochlorobenzene	123.2	0	120	0	102.7%	70	130				
Fluorobenzene	113.1	0	120	0	94.3%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 10-Jul-01

CLIENT: Golden Environmental Management
Work Order: 0106054
Project: Burlington Resources; Hampton 4-
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0106042-01A	91.4	106	91.5
0106043-01A	90.3	99.9	91.9
0106043-01AMS	90.5	106	90.7
0106043-01AMSD	90.6	104	92.3
0106048-03A	96.8	101	95
0106054-01A	95.8	103	95
0106054-02A	95.2	103	95.2
0106054-03A	93.6	101	93.3
0106054-04A	93.4	102	93.9
0106054-04AMS	93.5	103	92.5
0106054-04AMSD	93.3	104	92.8
0106054-05A	95.7	94.9	95.3
0106054-06A	94.9	101	94.8
0106054-07A	93.5	99.4	93.6
0106054-08A	91.8	100	92.8
0106054-09A	91.4	102	92
0106054-10A	95.1	103	94.8
CCV1 BTEX_01052	94.8	102	94.3
CCV2 BTEX_01052	94.8	103	94.3
CCV3 BTEX_01052	93.9	99.1	93.7
LCS WATER	93.6	103	93.8
MB1	95.5	102	94.6

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

WELL OBSERVATION DATA

Project Name B.R. well Sampling Project No. 6178

Project Manager LISA minn Cost Code

Client Company Burlington Resources Date 9-18-01

Site Name HAMPTON #4M

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Depth to Sinking Product (Feet)	Total Well Depth (Feet)	Floating Product Thickness	Sinking Product Thickness	Comments
MW 1	0840			44.47					

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments

Signature Chris A Mine Date 9-18-01

Well Development and Purging Data

GEM Golden Environmental Management

Project No. 6124
Task No.
Well No. TMW 1

Development ☐
Purging ☒

Site Name/Identification HAMPTON #4 M
Site Address Rural San Juan Co.

Client/Project Name Burlington Resources B.R. well Sampling
Project Manager Lisa Winn

Development Criteria
- ☒ 3 to 5 Casing Volumes of Water Removal
- ☒ Stabilization of Indicator Parameters
- ☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 19.61
Initial Depth to Water (feet) 18.99
Height of Water Column in Well (feet) .62
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	0.62	0.10X3	0.30
Gravel Pack			
Drilling Fluids			
Total			0.30

Instruments / Serial No. (if applicable)
- ☒ PH Meter — Hydac
- ☐ DO Monitor
- ☒ Conductivity Meter — Hydac
- ☐ Temperature Meter — Hydac
- ☐ Other

Methods of Development
Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

Bailer
- ☒ Bottom Valve
- ☐ Double Check Valve
- ☐ Stainless-steel Kemmerer

☐ Other

Water Disposal
on Site in pit

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-19-01	1030		X			19.50	.10	.10			21.5	7.19	4890		Cloudy, yellow, Smell, no odor [illegible]

Circle the date and time that the development criteria are met.

Comments Bailed Approximately .10 gal Bailed well Dry did not Recover did not collect Sample

Developer's Signature (s) Chris A-Mag Date 9-18-01 Reviewer LWinn Date 9/27/01

Well Development and Purging Data

GEM — Golden Environmental Management

Project No. 9118
Task No.
Well No. MW 5

Development ☐
Purging ☑

Page 1 of 1

Site Name/Identification HAMPTON #4M
Site Address Rural San Juan CO.

Client/Project Name Burlington Resources RR well sampling
Project Manager Lisa Winn

Development Criteria
☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 20.16
Initial Depth to Water (feet) 15.86
Height of Water Column in Well (feet) 4.3
Diameter (inches): Well 2" Gravel Pack

Instruments — Serial No. (if applicable)
☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Item	Water Volume in Well — Cubic Feet	Gallons	Gallons to be Removed
Well Casing	4.3	0.70x3	2.1
Gravel Pack			
Drilling Fluids			
Total			2.1

Water Disposal
On site in pit

Sampling Activities
Type of Container ____ No. of Containers ____
Parameters Sampled For

Water Removal Data

Date	Time	Development Method — Pump	Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons) — Increment	Cumulative	Product Volume Removed (gallons) — Increment	Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-18-01	1143		X				.5	.5			21.4	6.89	4310		Clou dy Dark Grey Rotten Egg smell w/ specs
	1145		X				.5	1			19.8	6.59	4170		
	1147		X				.5	1.5			19.9	6.48	4070		
	1149		X			19.06	.5	2			19.2	6.50	4020		no Change

Circle the date and time that the development criteria are met.

Comments After Bailing Approximately 2 gal Bailed well Dry Let Recover sampled for BTX 1210

Developer's Signature (s) [signature] Date 9-18-01 Reviewer [signature] Date 9/27/01

Well Development and Purging Data

Project No. 6178 Development ☐ Page 1 of 1
Task No. Purging ☑
Well No. MW 7 Site Name/Identification HAMPTON #4M Site Address Rural San Juan Co.
Client/Project Name Burlington Resources B.R. well Sampling Project Manager Lisa Winn

Development Criteria
☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 21.23
Initial Depth to Water (feet) 19.85
Height of Water Column in Well (feet) 1.38
Diameter (inches): Well 2" Gravel Pack

Instruments / Serial No. (if applicable)
☑ PH Meter — Hydac
☐ DO Monitor
☑ Conductivity Meter — Hydac
☑ Temperature Meter — Hydac
☐ Other

Methods of Development
Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	1.38	0.22x3	0.66
Gravel Pack			
Drilling Fluids			
Total			0.66

Water Disposal
On site in pit

Sampling Activities
Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-18-01	1257					20.41	.75	.75			18.2	7.16	4380		Cloudy yellow [illegible]

Circle the date and time that the development criteria are met.

Comments Small amount of water took one set of water quality Readings Collected BTEX Samples 1310

Developer's Signature (s) Chris A. May Date 9-18-01 Reviewer L Winn Date 9/27/01

Well Development and Purging Data

Golden Environmental Management GEM

Project No. 6178
Task No.
Well No. MW 9

Development ☐
Purging ☑

Site Name/Identification HAMPTON #4M
Site Address Rural San Juan CO.

Page 1 of 1

Client/Project Name Burlington Resources BR well Sampling
Project Manager Lisa Winn

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 32.89
Initial Depth to Water (feet) 22.67
Height of Water Column in Well (feet) 10.22
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.22	.16X3	4.98
Gravel Pack			
Drilling Fluids			
Total			4.98

Instruments

Instrument	Serial No. (if applicable)
☑ PH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

On Site in pit

Sampling Activities

Type of Container VOA No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-18-01	0934		X				1	1			14.5	5.53	2880		[illegible]
	0936		X				1	2			14.6	5.99	2990		
	0938		X				1	3			14.5	6.15	3070		
	0941		X				1	4			14.6	6.23	3110		
	09[illegible]		X			22.9[illegible]	1	5			14.9	6.26	3140		[illegible]

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 0950

Developer's Signature (s) [signature] Date 9-18-01 Reviewer [signature] Date 9/27/01

Well Development and Purging Data

Project No. 6178 | Development ☐ | Purging ☑ | Page 1 of 1

Task No.

Well No. MW 11 | Site Name/Identification HAMPTON #4M | Site Address Rural San Juan Co.

Client/Project Name Burlington Resources BR Well Sampling | Project Manager Lisa Hunn

Development Criteria

- ☐ 3 to 5 Casing Volumes of Water Removal
- ☐ Stabilization of Indicator Parameters
- ☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 21.51
Initial Depth to Water (feet) 5C.47
Height of Water Column in Well (feet) 15.04
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	15.04	2.45X3	7.35
Gravel Pack			
Drilling Fluids			
Total			7.35

Instruments

	Serial No. (if applicable)
☑ PH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Water Disposal

on site in P.T

Methods of Development

Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

Bailer
- ☑ Bottom Valve
- ☐ Double Check Valve
- ☐ Stainless-steel Kemmerer

☐ Other

Sampling Activities

Type of Container VOA | No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
	1403		X				1.5	1.5			17.8	8.03	2810		Cloudy Brown to Clear
	1407		X				1.5	3			16.9	2.40	2450		" "
	1412		X				1.5	4.5			16.4	2.04	2400		" "
	1417		X				1.5	6			16.2	6.82	2340		" "
	1422		X			07.93	1.5	7.5			16.3	6.35	2170		No Change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 1430

Developer's Signature (s) [signature] Date 9-18-01 Reviewer [signature] Date 9/27/01

Well Development and Purging Data

Golden Environmental Management (GEM)

Project No. 6178

Task No.

Development ☐

Purging ☒

Well No. MW 12

Site Name/Identification HAMPTON #4M

Site Address Rural San Juan Co.

Client/Project Name Burlington Resources B.R Well Sampling

Project Manager Lisa Winn

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

☐ Stabilization of Indicator Parameters

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 34.40

Initial Depth to Water (feet) 24.31

Height of Water Column in Well (feet) 10.09

Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.09	1.64X3	4.92
Gravel Pack			
Drilling Fluids			
Total			4.92

Instruments

Instrument	Serial No. (if applicable)
☒ PH Meter	Hydac
☐ DO Monitor	
☐ Conductivity Meter	Hydac
☒ Temperature Meter	Hydac
☐ Other	

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

Bailer

☒ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

On site in pit

Sampling Activities

Type of Container VOA No. of Containers 2

Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-18-01	1021		X				1	1			15.9	6.24	3100		[illegible]
	1024		X				1	2			15.9	6.28	3080		〃 〃
	1027		X				1	3			15.5	6.29	3050		〃 〃
	1030		X				1	4			15.4	6.27	3060		〃 〃
	1033		X			24.63	1	5			15.5	6.31	3040		no change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 1045

Developer's Signature (s) [signature] Date 9-18-01 Reviewer [signature] Date 9/27/01

Well Development and Purging Data

Golden Environmental Management GEM

Project No. 6179 | Development ☐ | Purging ☑ | Page 1 of 1

Task No.

Well No. MW 15 | Site Name/Identification HAMPTON #4M | Site Address Rural San Juan Co.

Client/Project Name Burlington Resources BR Well Sampling | Project Manager Lisa Winn

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 25.32
Initial Depth to Water (feet) 19.22
Height of Water Column in Well (feet) 6.1
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.1	0.99x3	2.97
Gravel Pack			
Drilling Fluids			
Total			2.97

Instruments

Instrument	Serial No. (if applicable)
☑ PH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal
ON Site in pit

Sampling Activities

Type of Container VOA | No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-18-01	0857		X				.75	.75			17.6	4.94	3260		Cloudy/no odor
	0859		X				.75	1.5			16.6	4.39	3140		Cloudy/no odor
	0902		X				.75	2.25			16.4	4.46	3120		Cloudy Grey/silt no odor
	0905		X				.75	3			16.6	4.50	3090		" "
	0907		X			22.38	.75	3.75			16.6	4.74	2920		no Change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 0915

Developer's Signature (s) Chris A Mary | Date 9-18-01 | Reviewer LWinn | Date 9/27/01

Well Development and Purging Data

Project No. 6178 | Development ☐ | Purging ☑ | Page 1 of 1

Task No.

Well No. MW 16 | Site Name/Identification HAMPTON/ECM | Site Address Rural San Juan CO.

Client/Project Name Burlington Resources B.R. well Sampling | Project Manager Lisa minn

Development Criteria
- ☑ 3 to 5 Casing Volumes of Water Removal
- ☐ Stabilization of Indicator Parameters
- ☐ Other

Water Volume Calculation
- Initial Depth of Well (feet) 29.68
- Initial Depth to Water (feet) 24.77
- Height of Water Column in Well (feet) 4.91
- Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.91	3.20x3	9.6
Gravel Pack			
Drilling Fluids			
Total			9.6

Instruments | **Serial No. (if applicable)**
- ☑ PH Meter — Hydac
- ☐ DO Monitor
- ☑ Conductivity Meter — Hydac
- ☑ Temperature Meter — Hydac
- ☐ Other

Water Disposal 1 bbl
ON SITE in pit

Methods of Development

Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

Bailer
- ☑ Bottom Valve
- ☐ Double Check Valve
- ☐ Stainless-steel Kemmerer

☐ Other

Sampling Activities
Type of Container WA | No. of Containers 2
Parameters Sampled For BTEX

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-18-01	1102		X				2	2			17.7	7.04	3500		cloudy, sheen
	1105		X				2	4			16	6.62	3500		no change
						28.83	1	5			—	—	—		

Circle the date and time that the development criteria are met.

Comments After Bailing Approximately 5 gal Bailed well Dry Let Recover Sampled for BTEX 1130

Developer's Signature (s) Chris A Mc | Date 9-18-01 | Reviewer [signature] | Date 9/27/01

11324

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 9/12/01

Page: 1 of 1

Purchase Order No.:

Project No. C179

SEND INVOICE TO

Name

Company

Dept.

Address

City, State, Zip

REPORT RESULTS TO

Name

Title

Company

Mailing Address

City, State, Zip

Telephone No.

Telefax No.

PROJECT LOCATION: HAMPTON #4M

SAMPLER'S SIGNATURE:

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	BTEX (8021)	LAB ID
HAMPTON #4M MW 5	9-11-01	1210	H2O	HCl	2	X	
HAMPTON #4M MW 7	9-11-01	1310	H2O	HCl	2	X	
HAMPTON #4M MW 9	9-11-01	0950	H2O	HCl	2	X	
HAMPTON #4M MW 11	9-11-01	1130	H2O	HCl	2	X	
HAMPTON #4M MW 12	9-11-01	1045	H2O	HCl	2	X	
HAMPTON #4M MW 15	9-11-01	0915	H2O	HCl	2	X	
HAMPTON #4M MW 16	9-11-01	1130	H2O	HCl	2	X	
HAMPTON #4M SCOOP	9-11-01	1200	H2O	HCl	2	X	
Trip Blank	9-5-01	0900	H2O	HCl	1	X	

ANALYSIS REQUESTED

Relinquished by:	Date/Time	Received by:	Date/Time
	9/12/01		9/12/01 1010
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On-Site Yellow - LAB Pink - Sampler Goldenrod - Client

11524

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 9 19 01

Page: 1 of 1

Purchase Order No.: | Project No. C178

SEND INVOICE TO
Name: Greg Hunt Z
Company: Burlington Resources | Dept.
Address: P.O. Box 4289
City, State, Zip: Farmington NM. 87499-4289

REPORT RESULTS TO
Name: Lisa Kinn | Title: Project manager
Company: GOLDEN Environmental Mgmt.
Mailing Address: 706 E. San Juan Blvd. Suite D.
City, State, Zip: Farmington N.M. 87401
Telephone No: (505) 566 9115 | Telefax No: (505) 566-9120

PROJECT LOCATION: HAMPTON #4M

SAMPLER'S SIGNATURE: Lisa Kinn

SAMPLE IDENTIFICATION	SAMPLE DATE	TIME	MATRIX	PRES.	Number of Containers	BTEX 8021	LAB ID
HAMPTON #4M MW 5	9-18-01	1210	H_2O	HCl	2	X	0109021-01A
HAMPTON #4M MW 7	9-18-01	1310	H_2O	HCl	2	X	-02A
HAMPTON #4M MW 9	9-19-01	0950	H_2O	HCl	2	X	-03A
HAMPTON #4M MW 11	9-19-01	1130	H_2O	HCl	2	X	-04A
HAMPTON #4M MW 12	9-19-01	1045	H_2O	HCl	2	X	-05A
HAMPTON #4M MW 15	9-18-01	0915	H_2O	HCl	2	X	-06A
HAMPTON #4M MW 16	9-19-01	1130	H_2O	HCl	2	X	-07A
HAMPTON #4M Seep	9-18-01	1200	H_2O	HCl	2	X	-08A
Trip Blank	9-5-01	0900	H_2O	HCl	1	X	-09A

ANALYSIS REQUESTED

Relinquished by: Lisa Kinn	Date/Time 9/19/01 1010	Received by:	Date/Time 9/19/01 1010
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

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ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

September 24, 2001

Lisa Winn
Golden Environmental Management
906 San Juan Blvd
Farmington, NM 87401
TEL: (505) 566-9116
FAX (505) 566-9120

RE: Hampton #4M Order No.: 0109021

Dear Lisa Winn,

On Site Technologies, LTD. received 9 samples on 9/19/2001 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD. **Date:** *24-Sep-01*

CLIENT: Golden Environmental Management
Project: Hampton #4M
Lab Order: 0109021

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 5
Lab ID:	0109021-01A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 12:10:00 PM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	4100	50		µg/L	100	9/19/2001
Toluene	11000	50		µg/L	100	9/19/2001
Ethylbenzene	760	50		µg/L	100	9/19/2001
m,p-Xylene	7800	100		µg/L	100	9/19/2001
o-Xylene	2200	50		µg/L	100	9/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 7
Lab ID:	0109021-02A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 1:10:00 PM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	870	5		µg/L	10	9/19/2001
Toluene	560	5		µg/L	10	9/19/2001
Ethylbenzene	320	5		µg/L	10	9/19/2001
m,p-Xylene	1400	10		µg/L	10	9/19/2001
o-Xylene	620	5		µg/L	10	9/19/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 9
Lab ID:	0109021-03A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 9:50:00 AM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	9/19/2001
Toluene	ND	0.5		µg/L	1	9/19/2001
Ethylbenzene	ND	0.5		µg/L	1	9/19/2001
m,p-Xylene	ND	1		µg/L	1	9/19/2001
o-Xylene	ND	0.5		µg/L	1	9/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 11
Lab ID:	0109021-04A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 2:30:00 PM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	9/19/2001
Toluene	ND	0.5		µg/L	1	9/19/2001
Ethylbenzene	ND	0.5		µg/L	1	9/19/2001
m,p-Xylene	ND	1		µg/L	1	9/19/2001
o-Xylene	ND	0.5		µg/L	1	9/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 12
Lab ID:	0109021-05A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 10:45:00 AM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	5100	50		µg/L	100	9/19/2001
Toluene	2400	50		µg/L	100	9/19/2001
Ethylbenzene	430	50		µg/L	100	9/19/2001
m,p-Xylene	2500	100		µg/L	100	9/19/2001
o-Xylene	320	50		µg/L	100	9/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 15
Lab ID:	0109021-06A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 9:15:00 AM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	9/19/2001
Toluene	ND	0.5		µg/L	1	9/19/2001
Ethylbenzene	ND	0.5		µg/L	1	9/19/2001
m,p-Xylene	ND	1		µg/L	1	9/19/2001
o-Xylene	ND	0.5		µg/L	1	9/19/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	MW 16
Lab ID:	0109021-07A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 11:30:00 AM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	11000	50		µg/L	100	9/21/2001
Toluene	6400	25		µg/L	50	9/19/2001
Ethylbenzene	590	25		µg/L	50	9/19/2001
m,p-Xylene	5400	50		µg/L	50	9/19/2001
o-Xylene	1000	25		µg/L	50	9/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton #4M
Work Order:	0109021	**Client Sample ID:**	Seep
Lab ID:	0109021-08A **Matrix:** AQUEOUS	**Collection Date:**	9/18/2001 12:00:00 PM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	9/19/2001
Toluene	ND	0.5		µg/L	1	9/19/2001
Ethylbenzene	ND	0.5		µg/L	1	9/19/2001
m,p-Xylene	ND	1		µg/L	1	9/19/2001
o-Xylene	ND	0.5		µg/L	1	9/19/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *24-Sep-01*

Client:	Golden Environmental Management	**Client Sample Info:**	Hampton 34M
Work Order:	0109021	**Client Sample ID:**	Trip Blank
Lab ID:	0109021-09A **Matrix:** AQUEOUS	**Collection Date:**	9/5/2001 9:00:00 AM
Project:	Hampton #4M	**COC Record:**	11524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DM**
Benzene	ND	0.5		µg/L	1	9/19/2001
Toluene	ND	0.5		µg/L	1	9/19/2001
Ethylbenzene	ND	0.5		µg/L	1	9/19/2001
m,p-Xylene	ND	1		µg/L	1	9/19/2001
o-Xylene	ND	0.5		µg/L	1	9/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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Date: *24-Sep-01*

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT

Method Blank

Sample ID: **MB1** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0974	0.5									J

Sample ID: **MB1** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010921A** SeqNo: **42520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.1082	0.5									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *24-Sep-01*

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0109001-01AMS** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.98	0.5	40	0	107.5%	70	130				
Ethylbenzene	53.68	0.5	40	11	106.7%	70	130				
m,p-Xylene	189.6	1	80	110	99.5%	70	130				
Methyl tert-Butyl Ether	41.71	1	40	0	104.3%	70	130				
o-Xylene	117.5	0.5	40	75	106.2%	70	130				
Toluene	96.26	0.5	40	54	105.6%	70	130				

Sample ID: **0109001-01AMSD** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.88	0.5	40	0	104.7%	70	130	42.98	2.6%	8	
Ethylbenzene	52.17	0.5	40	11	102.9%	70	130	53.68	2.9%	7	
m,p-Xylene	184.4	1	80	110	92.9%	70	130	189.6	2.8%	7	
Methyl tert-Butyl Ether	41.52	1	40	0	103.8%	70	130	41.71	0.5%	6	
o-Xylene	114.6	0.5	40	75	99.1%	70	130	117.5	2.5%	6	
Toluene	93.67	0.5	40	54	99.2%	70	130	96.26	2.7%	6	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0109021-07AMS** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:
Client ID: **MW 16** **0109021** Run ID: **GC-1_010921A** SeqNo: **42521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	15740	50	4000	11000	118.4%	70	130				
Ethylbenzene	4890	50	4000	800	102.2%	70	130				
m,p-Xylene	14000	100	8000	6000	100.0%	70	130				
Methyl tert-Butyl Ether	4005	100	4000	0	100.1%	70	130				
o-Xylene	5279	50	4000	1100	104.5%	70	130				
Toluene	11440	50	4000	7100	108.4%	70	130				

Sample ID: **0109021-07AMSD** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:
Client ID: **MW 16** **0109021** Run ID: **GC-1_010921A** SeqNo: **42522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	15300	50	4000	11000	107.4%	70	130	15740	2.8%	8	
Ethylbenzene	4752	50	4000	800	98.8%	70	130	4890	2.9%	7	
m,p-Xylene	13610	100	8000	6000	95.1%	70	130	14000	2.8%	7	
Methyl tert-Butyl Ether	3952	100	4000	0	98.8%	70	130	4005	1.3%	6	
o-Xylene	5137	50	4000	1100	100.9%	70	130	5279	2.7%	6	
Toluene	11120	50	4000	7100	100.6%	70	130	11440	2.8%	6	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *24-Sep-01*

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS WATER** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:

Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	45.07	0.5	40	0	112.7%	80	120				
Ethylbenzene	42.93	0.5	40	0	107.3%	80	120				
m,p-Xylene	84.42	1	80	0	105.5%	80	120				
Methyl tert-Butyl Ether	44.56	1	40	0	111.4%	80	120				
o-Xylene	42.75	0.5	40	0	106.9%	80	120				
Toluene	43.03	0.5	40	0.0974	107.3%	80	120				

Sample ID: **LCS WATER** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:

Client ID: **0109021** Run ID: **GC-1_010921A** SeqNo: **42519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.32	0.5	40	0	105.8%	80	120				
Ethylbenzene	42.38	0.5	40	0	106.0%	80	120				
m,p-Xylene	83.35	1	80	0	104.2%	80	120				
Methyl tert-Butyl Ether	39.44	1	40	0	98.6%	80	120				
o-Xylene	42.63	0.5	40	0	106.6%	80	120				
Toluene	41.98	0.5	40	0.1082	104.7%	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *24-Sep-01*

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1 BTEX_0107** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:

Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.46	0.5	40	0	106.2%	85	115				
Ethylbenzene	42.36	0.5	40	0	105.9%	85	115				
m,p-Xylene	83.22	1	80	0	104.0%	85	115				
Methyl tert-Butyl Ether	40.78	1	40	0	101.9%	85	115				
o-Xylene	42.29	0.5	40	0	105.7%	85	115				
Toluene	41.93	0.5	40	0	104.8%	85	115				
1,4-Difluorobenzene	111	0	120	0	92.5%	70	130				
4-Bromochlorobenzene	134.4	0	120	0	112.0%	70	130				
Fluorobenzene	107	0	120	0	89.2%	70	130				

Sample ID: **CCV2 BTEX_0107** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:

Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.77	0.5	40	0	104.4%	85	115				
Ethylbenzene	41.55	0.5	40	0	103.9%	85	115				
m,p-Xylene	81.61	1	80	0	102.0%	85	115				
Methyl tert-Butyl Ether	41.47	1	40	0	103.7%	85	115				
o-Xylene	41.76	0.5	40	0	104.4%	85	115				
Toluene	41.25	0.5	40	0	103.1%	85	115				
1,4-Difluorobenzene	111	0	120	0	92.5%	70	130				
4-Bromochlorobenzene	134.5	0	120	0	112.1%	70	130				
Fluorobenzene	107	0	120	0	89.2%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3 BTEX_0107** Batch ID: **GC-1_010919** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/19/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010919A** SeqNo: **42445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.77	0.5	40	0	106.9%	85	115				
Ethylbenzene	42.56	0.5	40	0	106.4%	85	115				
m,p-Xylene	83.42	1	80	0	104.3%	85	115				
Methyl tert-Butyl Ether	40.61	1	40	0	101.5%	85	115				
o-Xylene	42.69	0.5	40	0	106.7%	85	115				
Toluene	42.22	0.5	40	0	105.6%	85	115				
1,4-Difluorobenzene	110.5	0	120	0	92.1%	70	130				
4-Bromochlorobenzene	135.9	0	120	0	113.3%	70	130				
Fluorobenzene	107.2	0	120	0	89.3%	70	130				

Sample ID: **CCV1 BTEX_0107** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010921A** SeqNo: **42516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.48	0.5	40	0	106.2%	85	115				
Ethylbenzene	42.58	0.5	40	0	106.4%	85	115				
m,p-Xylene	84.09	1	80	0	105.1%	85	115				
Methyl tert-Butyl Ether	39.48	1	40	0	98.7%	85	115				
o-Xylene	42.85	0.5	40	0	107.1%	85	115				
Toluene	42.1	0.5	40	0	105.3%	85	115				
1,4-Difluorobenzene	114.2	0	120	0	95.2%	70	130				
4-Bromochlorobenzene	134.4	0	120	0	112.0%	70	130				
Fluorobenzene	114.2	0	120	0	95.2%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV2 BTEX_0107** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010921A** SeqNo: **42517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41	0.5	40	0	102.5%	85	115				
Ethylbenzene	41.1	0.5	40	0	102.7%	85	115				
m,p-Xylene	80.86	1	80	0	101.1%	85	115				
Methyl tert-Butyl Ether	40.04	1	40	0	100.1%	85	115				
o-Xylene	41.23	0.5	40	0	103.1%	85	115				
Toluene	40.82	0.5	40	0	102.1%	85	115				
1,4-Difluorobenzene	113.5	0	120	0	94.6%	70	130				
4-Bromochlorobenzene	124.4	0	120	0	103.7%	70	130				
Fluorobenzene	113.9	0	120	0	94.9%	70	130				

Sample ID: **CCV3 BTEX_0107** Batch ID: **GC-1_010921** Test Code: **SW8021B** Units: **µg/L** Analysis Date **9/21/2001** Prep Date:
Client ID: **0109021** Run ID: **GC-1_010921A** SeqNo: **42518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.35	0.5	40	0	103.4%	85	115				
Ethylbenzene	41.25	0.5	40	0	103.1%	85	115				
m,p-Xylene	80.99	1	80	0	101.2%	85	115				
Methyl tert-Butyl Ether	40.19	1	40	0	100.5%	85	115				
o-Xylene	41.57	0.5	40	0	103.9%	85	115				
Toluene	41.08	0.5	40	0	102.7%	85	115				
1,4-Difluorobenzene	113.5	0	120	0	94.6%	70	130				
4-Bromochlorobenzene	124.4	0	120	0	103.7%	70	130				
Fluorobenzene	114.4	0	120	0	95.3%	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 24-Sep-01

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0109001-01A	93.2	111	90.2
0109001-01AMS	91.9	112	89.4
0109001-01AMSD	92.1	112	89.3
0109005-01A	81.5	97.4	80.4
0109009-01A	93.7	112	90.6
0109009-02A	93.4	111	90.5
0109009-03A	93.2	112	90.9
0109017-04B	93	112	90
0109019-01A	92.7	110	90.8
0109020-01A	95.2	101	97
0109021-01A	91.6	113	89.2
0109021-02A	89.9	110	87.8
0109021-03A	93.6	112	90.5
0109021-04A	93.2	112	90.4
0109021-05A	91.9	111	89.4
0109021-06A	93.3	111	90.7
0109021-07A	93.2	102	94.1
0109021-07AMS	92.7	103	93.5
0109021-07AMSD	93.2	103	93.4
0109021-08A	93.2	110	90.8
0109021-09A	92.9	111	90.7
0109022-01A	94.6	102	95.6
0109022-02A	93.4	118	90.6
0109022-03A	93	112	90.6
0109023-01A	95.9	111	96.6
0109023-02A	95.8	111	96.3
0109023-03A	95.5	112	96.6

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

CLIENT: Golden Environmental Management
Work Order: 0109021
Project: Hampton #4M
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0109023-04A	96.5	99.8	97.3
0109023-05A	95.4	101	96.6
0109023-06A	96.2	101	96.5
0109023-07A	95.8	101	96.6
0109023-08A	96	101	96.5
0109023-09A	95.4	102	94.3
0109025-01A	96.1	96.8	96.8
0109025-02A	95.9	105	96.7
0109025-03A	96.2	111	97.3
0109025-04A	95.5	105	96.7
0109025-05A	95.5	105	96.5
0109025-06A	94	104	96.2
0109025-07A	95.5	101	96.9
0109025-08A	95.7	101	96.3
CCV1 BTEX_01070	95.2	112	95.2
CCV2 BTEX_01070	94.6	104	94.9
CCV3 BTEX_01070	94.6	104	95.3
LCS WATER	94.8	106	95.3
MB1	95.9	106	96.3

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number TMW 1 Page 1 of 1

Project Name B. R. well Sampling Project Manager Lisa Winn Project No. 517000138

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural San Juan CO.

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☐ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 19.61
Initial Depth to Water (feet) 19.59
Height of Water Column in Well (feet) .02
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	.02		
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (If applicable)

☒ pH Meter _____
☐ DO Monitor _____
☒ Conductivity Meter _____
☒ Temperature Meter _____
☐ Other _____

Water Disposal

On site

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-18-01	1349						DRY								

Comments Did NOT Sample Because NOT enough water in well for water quality Readings or to collect Sample

Developer's Signature(s) Chris A Mey Date 12-18-01 Reviewer [signature] Date 12/21/01

☐ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 5

Project Name B.R. well sampling Project Manager Lisa Winn Project No. 15170001.38

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural San Juan CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 20.16
Initial Depth to Water (feet) 15.83
Height of Water Column in Well (feet) 4.33
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	4.33	0.7043	2.1
Gravel Pack			
Drilling Fluids			
Total			2.1

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

ON SITE in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-18-01	1308		X				.5	.5			14.9	6.68	3446		Cloudy Grey Bottom egg odor, Sheen
	1310		X				.5	1			15.5	6.70	3637		" "
	1313		X				.5	1.5			15.7	6.73	3658		" "
	1316		X				.5	2			15.3	6.82	3576		" "
	1320		X			17.64	.5	2.5			15.4	6.87	3574		no change

Comments SAmpled for BTEX 1327

Developer's Signature(s) [signature] Date 12-18-01 Reviewer [signature] Date 12/21/01

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 7

Page 1 of 1

Project Name BR well Sampling

Project Manager Lisa Winn

Project No. 151700138

Client Company Burlington Resources

Site Name Hampton #4M

Site Address Rural San Juan CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 21.23'
Initial Depth to Water (feet) 20.20
Height of Water Column in Well (feet) 1.03
Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	1.03	0.16 x 3	0.48
Gravel Pack			
Drilling Fluids			
Total			0.48

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI G3
☐ DO Monitor	
☑ Conductivity Meter	YSI G3
☑ Temperature Meter	YSI G3
☐ Other _____	

Water Disposal

On Site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-18-01	1401		X			20.62	.5	.5			13	6.92	3784		Cloudy, sheen yellow chips, bottom egg odor

Comments After Bailing approximately .5 gal Bailed well Dry Let Recover Sampled for BTEX 1415

Developer's Signature(s) _____ Date 12-18-01

Reviewer _____ Date 12/21/01

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 9

Page 1 of 1

Project Name B.R. well Sampling

Project Manager Lisa winn

Project No. 157000139

Client Company Burlington Resources

Site Name HAMPTON #9M

Site Address Rural San Juan CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 32.89
Initial Depth to Water (feet) 22.70
Height of Water Column in Well (feet) 10.19
Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.19	16.6 x 3	4.99
Gravel Pack			
Drilling Fluids			
Total			4.98

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

On Site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-19-01	1033		x				1	1			14.2	5.90	2995		cloudy no odor
	1036		x				1	2			14.3	6.47	3020		cloudy light grey no odor
	1039		x				1	3			14.2	6.54	3053		" "
	1042		x				1	4			14.4	6.54	2999		" "
	1046		x			22.87	1	5			14.2	6.54	2998		no change

Comments SAMpled For BTEX 1100

Developer's Signature(s) Chris L Mann Date 12-19-01

Reviewer [signature] Date 12/21/01

1520

amec

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 11 Page 1 of 1

Project Name B.R well Sampling Project Manager Lisa Winn Project No. 151200013A

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural San Juan CO

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal (4)
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 71.51
Initial Depth to Water (feet) 56.50
Height of Water Column in Well (feet) 15.01
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	15.01	2.44X3	7.32
Gravel Pack			
Drilling Fluids			
Total			7.32

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	YSI 63
☑ Conductivity Meter	
☑ Temperature Meter	YSI 63
☐ Other	

Methods of Development

Pump: ☐ Centrifugal ☐ Submersible ☐ Peristaltic
Bailer: ☑ Bottom Valve ☐ Double Check Valve ☐ Stainless-steel Kemmerer
☐ Other

Water Disposal

On site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-18-01	1440		X				1.5				13.1	6.65	2178		Cloudy Light Brown Mud
	1446						1.5				12.6	6.63	2189		" "
	1452						1.5				13	6.51	2126		" "
	1458						1.5				13	6.53	2162		" "
	1504					56.80	1.5				13.1	6.48	2183		No Change

Comments Sampled for BTEX 1517

Developer's Signature(s) Chad May Date 12-18-01 Reviewer [signature] Date 12/21/01

L:\forms\MW Dvlpmnt 2.dot 11/29/01

☐ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 12 Page 1 of 1

Project Name BR well Sampling Project Manager Lisa Winn Project No. 1512000139

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural San Juan Co.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 34.40
Initial Depth to Water (feet) 24.30
Height of Water Column in Well (feet) 10.10
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.10	1.64 x 3	4.92
Gravel Pack			
Drilling Fluids			
Total			4.92

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

on site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-18-01	1131		X				1	1			13.7	6.40	2921		Cloudy, Light Grey Bottoms, odor, Sheen
	1135		X				1	2			14.3	6.42	2951		Cloudy, Grey Sheen Bottoms odor
	1139		X				1	3			14.3	6.44	2877		" "
	1143		X				1	4			13.9	6.41	2976		" "
	1146		X			24.46	1	5			14.1	6.41	2924		No Change

Comments SAMPLED for BTEX 1157

Developer's Signature(s) [signature] Date 12-18-01 Reviewer [signature] Date 12/21/01

0930

amec

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 15

Page 1 of 1

Project Name B.R. well Sampling

Project Manager Lisa Winn

Project No. 1517000138

Client Company Burlington Resources

Site Name HAMPTON #4M

Site Address Rural San Juan CO

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☐ Other

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

Water Volume Calculation

Initial Depth of Well (feet) 25.32
Initial Depth to Water (feet) 19.12
Height of Water Column in Well (feet) 6.2
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.2	1.01x3	3.03
Gravel Pack			
Drilling Fluids			
Total			3.03

Instruments

Serial No. (If applicable)

☑ pH Meter YSI 63
☐ DO Monitor
☑ Conductivity Meter YSI 63
☑ Temperature Meter YSI 63
☐ Other

Water Disposal on site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-18-01	0948		X				.75	.75			14.4	3.96	3037		Cloudy Light Brown no odor
	0950		X				.75	1.5			14.9	3.86	3043		" "
	0951		X				.75	2.25			15.1	3.89	2988		" "
	0953		X				.75	3			15	3.91	3024		" "
	0955		X			22.14	.75	3.75			14.9	3.97	3039		no change

Comments SAmpled for BTex 1004

Developer's Signature(s) [signature] Date 12-14-01 Reviewer [signature] Date 12/21/01

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Page 1 of 1

Well Number MW 16
Project Name B.R. well Sampling
Project Manager Lisa Winn
Project No 151700138
Client Company Burlington Resources
Site Name HAMPTON #4M
Site Address Rural San Juan Co.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29.68
Initial Depth to Water (feet) 24.82
Height of Water Column in Well (feet) 4.86
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	4.86	3.17 x 3	9.51
Gravel Pack			
Drilling Fluids			
Total			9.51

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

On site in pit

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
12-19-01	1227		X				2	2			14.3	6.76	3181		Cloudy Sheen HC. Odor Light Grey
	1231		X				2	4			14.3	6.77	3211		" "
	1233		X			28.46	1	5			—	—	—		no Change

Comments After Bailing Approximately 5 gal Bailed well Dry Let Recover Sampled for BTEX 1245

Developer's Signature(s) Chris A. May Date 12-18-01 Reviewer [signature] Date 12/21/01

☐ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number Seep

Project Name B.R. well Sampling Project Manager Lisa winn Project No. 512000138

Client Company Burlington Resources

Site Name Hampton #4M Site Address Rural San Juan CO

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☐ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) _____
Initial Depth to Water (feet) _____
Height of Water Column in Well (feet) _____
Diameter (inches): Well ____ Gravel Pack____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (If applicable)

☐ pH Meter _____
☐ DO Monitor _____
☐ Conductivity Meter _____
☐ Temperature Meter _____
☐ Other _____

Water Disposal

_____

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
12-18-01	1335														

Comments Sample Taken from Spring in wash, Down gradient from Hampton Location 1335

Developer's Signature(s) [signature] Date 12-18-01 Reviewer [signature] Date 12/21/01

WELL OBSERVATION DATA

Project Name: B.R well Sampling

Project No.: 151200013

Project Mngr: LISA winn

Task:

Client Co.: Burlington Resources

Date: 12-18-01

Site Name: HAMPTON #1M

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Depth to Sinking Product (Feet)	Total Well Depth (Feet)	Floating Product Thickness	Sinking Product Thickness	Comments
MW 1	1015			44.22					

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments:

Signature: Lisa A. Winn

Date: 12-18-01

11603

ON SITE TECHNOLOGIES, LTD.

CHAIN OF CUSTODY RECORD

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 12 19 01
Page: 1 of 1

Purchase Order No.:	Project No. 1512000139
SEND INVOICE TO Name	Greg Wurtz
Company	Burlington Resources
Dept.	
Address	P.O. Box 4289
City, State, Zip	Farmington NM 87499-4289
REPORT RESULTS TO Name	Lisa Winn
Title	Project Manager
Company	IMEC
Mailing Address	2060 Afton place
City, State, Zip	Farmington NM 87401
Telephone No.	505 327-7928
Telefax No.	505-326 5721

PROJECT LOCATION: HAMPTON #4M

SAMPLER'S SIGNATURE: [signature]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	BTEX 8021								LAB ID
HAMPTON MW 5	12-18-01	1327	H_2O	HCl	2	X								
HAMPTON MW 7	12-18-01	1415	H_2O	HCl	2	X								
HAMPTON MW 9	12-18-01	1100	H_2O	HCl	2	X								
HAMPTON MW 11	12-18-01	1517	H_2O	HCl	2	X								
HAMPTON MW 12	12-18-01	1157	H_2O	HCl	2	X								
HAMPTON MW 15	12-18-01	1021	H_2O	HCl	2	X								
HAMPTON MW 16	12-18-01	1245	H_2O	HCl	2	X								
HAMPTON Seep	12-18-01	1535	H_2O	HCl	2	X								
Trip Blank	12-18-01	0820	H_2O	HCl	2	X								

Relinquished by: [signature]	Date/Time 1630 4/1	Received by: [signature]	Date/Time 12/19/01 1630
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Method of Shipment:		Rush / 24-48 Hours / 10 Working Days / By Date	

Authorized by: ______ Date ______
(Client Signature Must Accompany Request)

Special Instructions / Remarks:
Also send results to Greg Wurtz at Burlington

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

To Re-order Call 325-9600 or Fax 325-9764 alphagraphics FORM #01

11603

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

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LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 12 18 01

Page: 1 of 1

Purchase Order No.: | Project No.: 51000134

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington Resources | Dept.:
Address: P.O. Box 4289
City, State, Zip: Farmington NM. 87499-4289

REPORT RESULTS TO
Name: Lisa Winn | Title: Project Manager
Company: AMEC
Mailing Address: 2060 Afton Place
City, State, Zip: Farmington N.M. 87401
Telephone No: 505-327-7928 | Telefax No: 505-326-5721

PROJECT LOCATION: HAMPTON #4M

SAMPLER'S SIGNATURE: Chris A. May

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	BTEX 8021	LAB ID
HAMPTON MW 5	12-18-01	1327	H_2O	HCl	2	X	0112021-01A
HAMPTON MW 7	12-18-01	1415	H_2O	HCl	2	X	-02A
HAMPTON MW 9	12-18-01	1100	H_2O	HCl	2	X	-03A
HAMPTON MW 11	12-18-01	517	H_2O	HCl	2	X	-04A
HAMPTON MW 12	12-18-01	1157	H_2O	HCl	2	X	-05A
HAMPTON MW 15	12-18-01	1004	H_2O	HCl	2	X	-06A
HAMPTON MW 16	12-18-01	1245	H_2O	HCl	2	X	-07A
HAMPTON SEEP	12-18-01	1336	H_2O	HCl	2	X	-08A
Trip Blank	12-18-01	0820	H_2O	HCl	2	X	-09A

ANALYSIS REQUESTED

Relinquished by: Chris A. May	Date/Time 1630 12/18/01	Received by: David J. Morton	Date/Time 12/18/01 1630
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:
Also send results to Greg Wurtz at Burlington

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

December 20, 2001

Lisa Winn
AMEC Earth & Environmental Inc.
2060 Afton Place
Farmington, NM 87401
TEL: (505) 327-7928
FAX (505) 326-5721

RE: Hamptron #4M Order No.: 0112021

Dear Lisa Winn,

On Site Technologies, LTD. received 9 samples on 12/18/2001 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD. **Date:** *20-Dec-01*

CLIENT: AMEC Earth & Environmental Inc.
Project: Hamptron #4M
Lab Order: 0112021

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

P.O. BOX 2606 • FARMINGTON, NM 87499
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ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-5
Lab ID:	0112021-01A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 1:27:00 PM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	3200	50		µg/L	100	12/19/2001
Toluene	9700	50		µg/L	100	12/19/2001
Ethylbenzene	600	50		µg/L	100	12/19/2001
m,p-Xylene	6400	100		µg/L	100	12/19/2001
o-Xylene	1400	50		µg/L	100	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-7
Lab ID:	0112021-02A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 2:15:00 PM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	400	5		µg/L	10	12/19/2001
Toluene	30	5		µg/L	10	12/19/2001
Ethylbenzene	160	5		µg/L	10	12/19/2001
m,p-Xylene	790	10		µg/L	10	12/19/2001
o-Xylene	95	5		µg/L	10	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499
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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-9
Lab ID:	0112021-03A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 11:00:00 AM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	ND	0.5		µg/L	1	12/19/2001
Toluene	ND	0.5		µg/L	1	12/19/2001
Ethylbenzene	ND	0.5		µg/L	1	12/19/2001
m,p-Xylene	ND	1		µg/L	1	12/19/2001
o-Xylene	ND	0.5		µg/L	1	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-11
Lab ID:	0112021-04A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 3:17:00 PM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	ND	0.5		µg/L	1	12/19/2001
Toluene	ND	0.5		µg/L	1	12/19/2001
Ethylbenzene	ND	0.5		µg/L	1	12/19/2001
m,p-Xylene	ND	1		µg/L	1	12/19/2001
o-Xylene	ND	0.5		µg/L	1	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
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B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-12
Lab ID:	0112021-05A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 11:57:00 AM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	4000	50		µg/L	100	12/19/2001
Toluene	1500	50		µg/L	100	12/19/2001
Ethylbenzene	320	50		µg/L	100	12/19/2001
m,p-Xylene	1600	100		µg/L	100	12/19/2001
o-Xylene	280	50		µg/L	100	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-15
Lab ID:	0112021-06A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 10:04:00 AM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	ND	0.5		µg/L	1	12/19/2001
Toluene	ND	0.5		µg/L	1	12/19/2001
Ethylbenzene	ND	0.5		µg/L	1	12/19/2001
m,p-Xylene	ND	1		µg/L	1	12/19/2001
o-Xylene	ND	0.5		µg/L	1	12/19/2001

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- Surr: - Surrogate

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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	MW-16
Lab ID:	0112021-07A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 12:45:00 PM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	9900	50		µg/L	100	12/19/2001
Toluene	6900	25		µg/L	50	12/19/2001
Ethylbenzene	570	25		µg/L	50	12/19/2001
m,p-Xylene	6300	50		µg/L	50	12/19/2001
o-Xylene	1100	25		µg/L	50	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	Seep
Lab ID:	0112021-08A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 1:35:00 PM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	1	0.5		µg/L	1	12/19/2001
Toluene	0.6	0.5		µg/L	1	12/19/2001
Ethylbenzene	ND	0.5		µg/L	1	12/19/2001
m,p-Xylene	ND	1		µg/L	1	12/19/2001
o-Xylene	0.6	0.5		µg/L	1	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *20-Dec-01*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0112021	**Client Sample ID:**	Trip Blank
Lab ID:	0112021-09A **Matrix:** AQUEOUS	**Collection Date:**	12/18/2001 8:20:00 AM
Project:	Hamptron #4M	**COC Record:**	11603

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **DDM**
Benzene	ND	0.5		µg/L	1	12/19/2001
Toluene	ND	0.5		µg/L	1	12/19/2001
Ethylbenzene	ND	0.5		µg/L	1	12/19/2001
m,p-Xylene	ND	1		µg/L	1	12/19/2001
o-Xylene	ND	0.5		µg/L	1	12/19/2001

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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Date: *20-Dec-01*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0112021
Project: Hamptron #4M

QC SUMMARY REPORT

Method Blank

Sample ID: **MB_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112021** Run ID: **GC-1_011219A** SeqNo: **45950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
o-Xylene	ND	0.5									
Toluene	.2371	0.5									J
1,4-Difluorobenzene	104	0									
4-Bromochlorobenzene	112.6	0									
Fluorobenzene	102.8	0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *20-Dec-01*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0112021
Project: Hamptron #4M

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0112021-02AMS** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:
Client ID: **MW-7** **0112021** Run ID: **GC-1_011219A** SeqNo: **45951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	779.8	5	400	400	94.9%	70	130				
Ethylbenzene	534.6	5	400	160	93.6%	70	130				
m,p-Xylene	1629	10	800	790	104.9%	70	130				
o-Xylene	485.2	5	400	95	97.6%	70	130				
Toluene	410.1	5	400	30	95.0%	70	130				
1,4-Difluorobenzene	980.7	0	1100	0	89.2%	77	112				
4-Bromochlorobenzene	1165	0	1100	0	105.9%	88	116				
Fluorobenzene	996.2	0	1100	0	90.6%	87	102				

Sample ID: **0112021-02AMSD** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:
Client ID: **MW-7** **0112021** Run ID: **GC-1_011219A** SeqNo: **45952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	793	5	400	400	98.3%	70	130	779.8	1.7%	6	
Ethylbenzene	532.5	5	400	160	93.1%	70	130	534.6	0.4%	7	
m,p-Xylene	1616	10	800	790	103.3%	70	130	1629	0.8%	6	
o-Xylene	488.5	5	400	95	98.4%	70	130	485.2	0.7%	5	
Toluene	401.6	5	400	30	92.9%	70	130	410.1	2.1%	6	
1,4-Difluorobenzene	1005	0	1100	0	91.3%	77	112	0	0.0%	0	
4-Bromochlorobenzene	1150	0	1100	0	104.5%	88	116	0	0.0%	0	
Fluorobenzene	1010	0	1100	0	91.8%	87	102	0	0.0%	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *20-Dec-01*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0112021
Project: Hamptron #4M

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:

Client ID: **0112021** Run ID: **GC-1_011219A** SeqNo: **45949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.24	0.5	40	0	93.1%	80	120				
Ethylbenzene	37.52	0.5	40	0	93.8%	80	120				
m,p-Xylene	77.72	1	80	0	97.2%	80	120				
o-Xylene	39.09	0.5	40	0	97.7%	80	120				
Toluene	37.35	0.5	40	0.2	92.9%	80	120				
1,4-Difluorobenzene	100	0	110	0	90.9%	77	112				
4-Bromochlorobenzene	114.1	0	110	0	103.8%	88	116				
Fluorobenzene	101	0	110	0	91.8%	87	102				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *20-Dec-01*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0112021
Project: Hamptron #4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:
Client ID: **0112021** Run ID: **GC-1_011219A** SeqNo: **45946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.08	0.5	20	0	95.4%	85	115				
Ethylbenzene	19.61	0.5	20	0	98.1%	85	115				
m,p-Xylene	40.03	1	40	0	100.1%	85	115				
o-Xylene	20.34	0.5	20	0	101.7%	85	115				
Toluene	19.64	0.5	20	0	98.2%	85	115				
1,4-Difluorobenzene	101.8	0	110	0	92.6%	77	112				
4-Bromochlorobenzene	114.2	0	110	0	103.8%	88	116				
Fluorobenzene	101.4	0	110	0	92.2%	87	102				

Sample ID: **CCV2_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:
Client ID: **0112021** Run ID: **GC-1_011219A** SeqNo: **45947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.35	0.5	20	0	91.7%	85	115				
Ethylbenzene	17.96	0.5	20	0	89.8%	85	115				
m,p-Xylene	37.12	1	40	0	92.8%	85	115				
o-Xylene	19.3	0.5	20	0	96.5%	85	115				
Toluene	18.69	0.5	20	0	93.5%	85	115				
1,4-Difluorobenzene	101.8	0	110	0	92.5%	77	112				
4-Bromochlorobenzene	113	0	110	0	102.7%	88	116				
Fluorobenzene	101.9	0	110	0	92.7%	87	102				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0112021
Project: Hamptron #4M

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3_011219** Batch ID: **GC-1_011219** Test Code: **SW8021B** Units: **µg/L** Analysis Date **12/19/2001** Prep Date:
Client ID: **0112021** Run ID: **GC-1_011219A** SeqNo: **45948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.27	0.5	20	0	96.4%	85	115				
Ethylbenzene	19.51	0.5	20	0	97.6%	85	115				
m,p-Xylene	40.07	1	40	0	100.2%	85	115				
o-Xylene	20.6	0.5	20	0	103.0%	85	115				
Toluene	19.94	0.5	20	0	99.7%	85	115				
1,4-Difluorobenzene	102.1	0	110	0	92.8%	77	112				
4-Bromochlorobenzene	114.2	0	110	0	103.8%	88	116				
Fluorobenzene	101.2	0	110	0	92.0%	87	102				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 20-Dec-01

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0112021
Project: Hamptron #4M
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

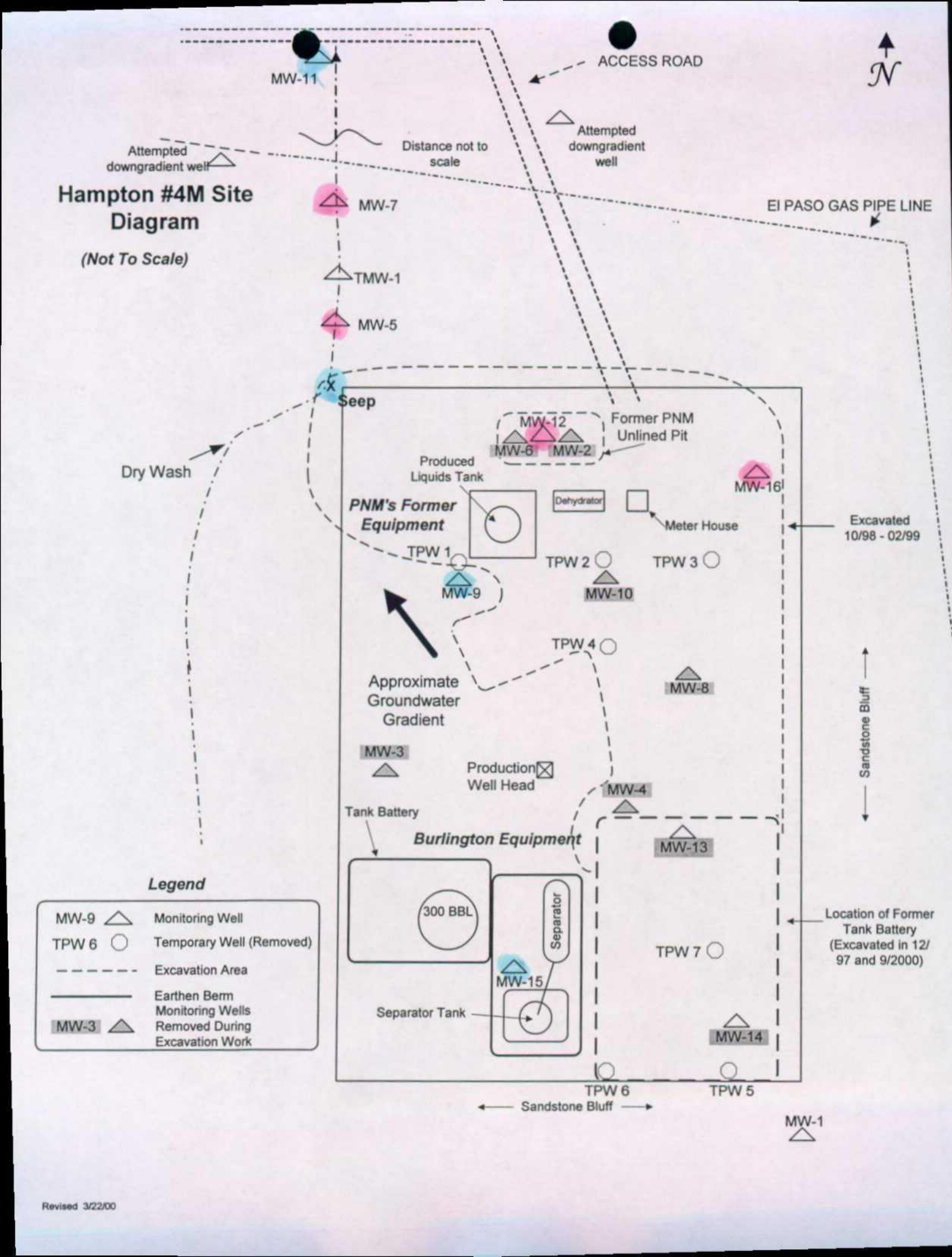
Sample ID	14FBZ	4BCBZ	FLBZ
0112021-01A	91.4	104	91.3
0112021-02A	92.3	107	92.6
0112021-02AMS	89.2	106	90.6
0112021-02AMSD	91.3	104	91.8
0112021-03A	93.5	104	92.8
0112021-04A	92.4	105	93.1
0112021-05A	93.2	104	93
0112021-06A	94.4	105	93.2
0112021-07A	90.7	103	91.1
0112021-08A	93.8	105	93.8
0112021-09A	94.3	106	93.8
0112022-01A	93.6	104	93.6
0112023-01A	92.9	101	92.6
0112023-02A	87	105	90.4
0112023-03A	96.2	112	96.9
0112023-04A	93	106	92.7
CCV1_011219	92.6	104	92.2
CCV2_011219	92.5	103	92.7
CCV3_011219	92.8	104	92
LCS_011219	90.9	104	91.8
MB_011219	94.5	102	93.5

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	77-112
4BCBZ	=	4-Bromochlorobenzene	88-116
FLBZ	=	Fluorobenzene	87-102

*** Surrogate recovery outside acceptance limits**

Attachment 2

SITE DIAGRAM


Hampton #4M Site Diagram
(Not To Scale)
MW-11
ACCESS ROAD
N
Attempted downgradient well
Distance not to scale
Attempted downgradient well
MW-7
EI PASO GAS PIPE LINE
TMW-1
MW-5
Seep
Dry Wash
MW-12
MW-6
MW-2
Former PNM Unlined Pit
Produced Liquids Tank
MW-16
PNM's Former Equipment
Dehydrator
Meter House
Excavated 10/98 - 02/99
TPW 1
TPW 2
TPW 3
MW-9
MW-10
TPW 4
MW-8
Approximate Groundwater Gradient
Sandstone Bluff
MW-3
Production Well Head
MW-4
Tank Battery
Burlington Equipment
MW-13
300 BBL
Separator
Location of Former Tank Battery (Excavated in 12/97 and 9/2000)
TPW 7
MW-15
Separator Tank
MW-14
TPW 6
TPW 5
Sandstone Bluff
MW-1
Legend
MW-9 Monitoring Well
TPW 6 Temporary Well (Removed)
Excavation Area
Earthen Berm
MW-3 Monitoring Wells Removed During Excavation Work
Revised 3/22/00

Attachment 3

AERIAL PHOTO

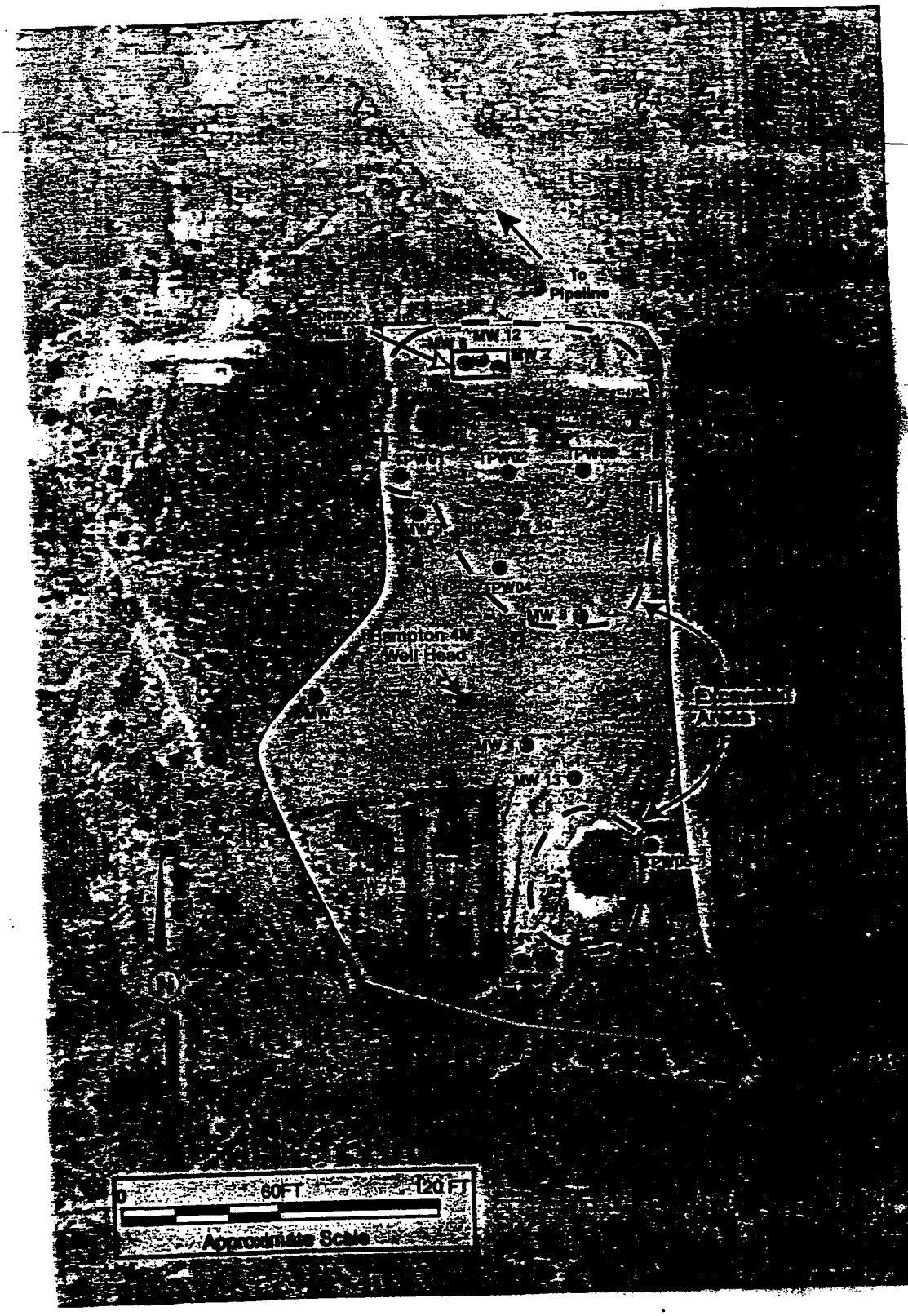


Figure 1: Hampton 4M Site Map (Monitor Well Locations)