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Mr. Michael Jacobs, P.G.
Pioneer Natural Resources USA, Inc.
303 W. Wall St., Suite 101
Midland, TX 79701

RE: October 2007 Groundwater Monitoring Data Report
Pioneer Natural Resources USA, Inc.
Biere 1-22 Well Site
East Poplar Oil Well Field
Poplar, Montana

Dear Mr. Jacobs:

Pursuant to the United States Environmental Protection Agency, Emergency Administrative Order Upon Consent (EAOC), Pioneer Natural Resources USA, Inc. (Pioneer) conducted quarterly groundwater monitoring and sampling in the vicinity of the Biere 1-22 oil well. The investigation was performed during October 2007 and included groundwater monitoring and sampling. This letter serves as a quarterly groundwater monitoring and sampling report under the EAOC.

During October 2nd through October 5th, 2007, monitor wells and selected available existing domestic wells were sampled. The locations of the monitor and domestic wells are shown on the figure provided in Appendix A. Wells were gauged using an electronic interface probe capable of detecting water and light non-aqueous phase liquid (LNAPL) with a precision of 0.01 feet. Prior to sample collection, wells were purged by use of a decontaminated submersible electric pump or disposable bailers.

To ensure representative groundwater samples were collected from the aquifer, water quality parameters were monitored and allowed to stabilize during the purging process prior to sample collection. Conductivity, temperature, and pH of the purged groundwater were monitored. Once at least three well volumes had been purged and the parameters had stabilized, samples were collected in the appropriate laboratory containers and preserved as directed by the laboratory. Samples were labeled and packaged on ice to maintain a temperature near 4 degrees Celsius. Tabulated water level elevations and depth to fluid data, water quality parameter readings, and inorganic and organic water chemistry results are presented in Tables 1, 2, and 3, respectively.

All groundwater samples were hand delivered to Energy Laboratories, Inc., in Billings, Montana for laboratory analysis. Appendix B contains chain of custody information, laboratory analytical reports, and laboratory quality assurance/quality control (QA/QC) data for these samples.

Please do not hesitate to call us if you have any questions regarding this report or the data contained herein.

Sincerely,
HKM Engineering Inc.

Christopher Leibli
Staff Geologist

Table 1 Depth to Water and LNAPL in Monitor Wells and Domestic Wells
Table 2 Inorganic Water Chemistry Data
Table 3 BTEX and TPH Analytical Results

Appendix A: Well Location Map
Appendix B: Laboratory Analytical Reports

cc: Mr. Ed Hance, Pioneer Natural Resources USA, Inc., 5205 N. O'Connor Blvd., Irving, TX 75039-3746

Table 1

Depth to Water and Product in Monitor Wells and Domestic Wells

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc.

Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
LAW-M01					12/5/2006		57.63		
					10/2/2007		58.00		
LAW-M03				1988.63	12/15/2006		31.47		1957.16
					3/13/2007		39.99		1948.64
					10/2/2007		31.76		1956.87
LAW-M04				1976.85	12/15/2006		23.14		1953.71
LAW-M05				2048.90	12/15/2006		98.58		1950.32
LAW-M06				2023.68	12/15/2006		76.18		1947.50
LAW-M08				2010.58	12/15/2006		62.40		1948.18
M-18	125151.8	72649.9	2047.10	2048.13	11/6/2001		80.80		1967.33
					2/19/2002		80.25		1967.88
					5/20/2002		80.60		1967.53
					8/19/2002		80.60		1967.53
					3/5/2003		79.60		1968.53
					5/12/2003		79.00		1969.13
					8/12/2003		80.46		1967.67
					3/18/2004		80.47		1967.66
					6/13/2004		80.30		1967.83
					3/2/2005		80.70		1967.43
					8/18/2005		80.60		1967.53
					8/22/2006		80.76		1967.37
					12/5/2006		80.57		1967.56
					10/2/2007		80.86		1967.27
M-25	125325.8	69631.8	2031.70	2033.33	11/9/2001		67.30		1966.03
M-27	122331.8	71238.71	2029.92	2031.19	8/13/2001		67.15		1964.04
					9/5/2001		67.28		1963.91
					11/6/2001		67.61		1963.58
					2/19/2002		67.07		1964.12
					5/20/2002		67.04		1964.15
					8/19/2002		67.74		1963.45
					11/4/2002		67.70		1963.49
					3/5/2003		68.88		1962.31
					5/12/2003		66.60		1964.59
					8/12/2003		67.30		1963.89
					11/9/2003		68.00		1963.19
					3/18/2004		67.39		1963.80
					6/7/2004		66.05		1965.14
					9/13/2004		67.12		1964.07
					11/18/2004		67.42		1963.77
					3/1/2005		67.19		1964.00
					5/24/2005		67.24		1963.95
					8/16/2005		67.50		1963.69
					11/15/2005		67.66		1963.53
					2/7/2006		67.42		1963.77
					5/23/2006		66.88		1964.31
					8/22/2006		67.81		1963.38
					12/5/2006		67.66		1963.53
					3/12/2007		67.29		1963.90
					10/2/2007		67.80		1963.39
M-28	118433.6	76557.04	2102.82	2096.63	5/31/2001		49.23		2047.40
					8/13/2001		48.85		2047.78
					9/5/2001		48.61		2048.02
					11/6/2001		49.06		2047.57
					2/19/2002		49.00		2047.63
					5/20/2002		49.10		2047.53
					8/19/2002		49.62		2047.01
					11/6/2002		49.73		2046.90
					3/5/2003		49.39		2047.24
					5/12/2003		50.50		2046.13
					8/12/2003		49.92		2046.71
					11/5/2003		50.28		2046.35

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc.

Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					3/16/2004		50.01		2046.62
					6/7/2004		50.04		2046.59
					9/15/2004		49.85		2046.78
					11/19/2004		49.73		2046.90
					3/1/2005		49.78		2046.85
					5/24/2005		50.31		2046.32
					8/16/2005		50.11		2046.52
					11/15/2005		50.66		2045.97
					2/7/2006		50.58		2046.05
					5/23/2006		49.88		2046.75
					8/22/2006		50.28		2046.35
					12/5/2006		50.33		2046.30
					3/12/2007		50.25		2046.38
					10/2/2007		50.10		2046.53
M-31	118180.7	75212.43	2085.00	2087.17	5/31/2001		40.37		2046.80
					8/13/2001		40.26		2046.91
					9/5/2001		40.15		2047.02
					11/6/2001		40.33		2046.84
					2/19/2002		40.42		2046.75
					5/20/2002		40.77		2046.40
					8/19/2002		41.22		2045.95
					11/4/2002		41.18		2045.99
					3/5/2003		41.30		2045.87
					5/12/2003		40.87		2046.30
					8/12/2003		41.62		2045.55
					11/5/2003		41.86		2045.31
					3/16/2004		41.65		2045.52
					6/7/2004		41.85		2045.32
					9/13/2004		41.65		2045.52
					11/18/2004		41.52		2045.65
					3/1/2005		41.65		2045.52
					5/24/2005		41.91		2045.26
					8/16/2005		41.07		2046.10
					11/15/2005		41.27		2045.90
					2/7/2006		41.34		2045.83
					5/23/2006		41.20		2045.97
					8/22/2006		41.36		2045.81
					12/5/2006		41.71		2045.46
					3/12/2007		41.80		2045.37
					10/2/2007		41.82		2045.35
M-39	110253.5	70939.4	2049.10	2050.63	11/6/2001		100.68		1949.95
					12/5/2006		100.60		1950.03
M-41					12/5/2006		42.24		
MOC- 1B	121916.3	75090.2	2077.05	2079.51	11/6/2001		28.25		2051.26
					11/4/2002		28.66		2050.85
					6/7/2004		28.48		2051.03
					12/5/2006		30.40		2049.11
					3/12/2007		30.41		2049.10
					10/2/2007		28.58		2050.93
MOC- 2	123531.9	72439.8	2036.10	2038.91	11/9/2001		73.50		1965.41
					12/5/2006		73.60		1965.31
					3/12/2007		73.01		1965.90
					10/2/2007		73.80		1965.11
MOC- 3				2010.56	12/5/2006		53.01		1957.55
					3/12/2007		53.93		1956.63
					10/2/2007		52.46		1958.10
MOC- 4				1966.63	12/5/2006		76.15		1890.48
					3/13/2007		75.62		1891.01
					10/2/2007		74.92		1891.71
MOC- 5				2055.86	12/5/2006		17.74		2038.12
					10/2/2007		15.66		2040.20
MOC- 7				2051.96	12/5/2006		34.74		2017.22

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Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					10/2/2007		33.16		2018.80
MOC- 8				1969.92	12/5/2006		75.17		1894.75
					10/2/2007		75.37		1894.55
MOC- 9				2051.83	12/5/2006		27.45		2024.38
					10/2/2007		25.92		2025.91
MOC-10				2052.66	12/5/2006		31.54		2021.12
					10/2/2007		30.38		2022.28
MOC-11				1974.04	12/5/2006		76.20		1897.84
					10/2/2007		74.87		1899.17
MOC-12				2053.25	12/5/2006		55.39		1997.86
					10/2/2007		54.25		1999.00
MOC-13					12/5/2006		35.59		
					10/2/2007		35.48		
MOC-14				2052.26	12/5/2006		35.13		2017.13
					10/2/2007		33.95		2018.31
MOC-16				2049.02	12/5/2006		30.40		2018.62
					10/2/2007		29.54		2019.48
MOC-17				2063.19	12/5/2006		31.92		2031.27
					10/2/2007		31.82		2031.37
MOC-18				2055.13	12/5/2006		33.03		2022.10
					10/2/2007		32.89		2022.24
MOC-19				1971.24	12/5/2006		75.29		1895.95
					10/2/2007		75.48		1895.76
MOC-20A				1991.89	12/5/2006		17.73		1974.16
					3/12/2007		19.66		1972.23
					10/2/2007		16.16		1975.73
MOC-20B				1926.46	12/5/2006		73.18		1853.28
					3/12/2007		72.60		1853.86
					10/2/2007		73.37		1853.09
MOC-23				2042.56	12/5/2006		25.78		2016.78
					10/2/2007		25.40		2017.16
PNR- 4	120239.6	75663.23	2080.86	2084.21	8/13/2001	27.38	56.31	28.93	2048.15
					9/4/2001	27.08	69.88	42.80	2044.28
					11/6/2001	29.01	69.88	40.87	2042.93
PNR- 5	119992.6	75218.06	2082.64	2085.56	5/31/2000		37.17		2048.39
					8/13/2001		37.04		2048.52
					9/5/2001		36.99		2048.57
					11/6/2001		37.05		2048.51
					2/19/2002		37.22		2048.34
					5/20/2002		38.25		2047.31
					8/19/2002		38.76		2046.80
					11/4/2002		38.81		2046.75
					3/5/2003		38.70		2046.86
					5/12/2003		38.53		2047.03
					8/12/2003		39.15		2046.41
					11/4/2003		39.39		2046.17
					3/16/2004		39.58		2045.98
					6/7/2004		39.54		2046.02
					9/13/2004		39.18		2046.38
					11/17/2004		39.27		2046.29
					3/2/2005		39.50		2046.06
					5/25/2005		39.53		2046.03
					8/17/2005		39.35		2046.21
					11/16/2005		39.24		2046.32
					2/9/2006		39.67		2045.89

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Pioneer Natural Resources, USA, Inc.

Biere 1-22 Investigation

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Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					5/25/2006		39.67		2045.89
					8/22/2006		39.78		2045.78
					12/5/2006		39.91		2045.65
					3/12/2007		39.83		2045.73
					10/2/2007		39.47		2046.09
PNR- 6	119552.8	77716.9	2116.53	2119.07	5/31/2000		20.33		2098.74
					8/13/2001		20.55		2098.52
					9/5/2001		20.51		2098.55
					11/6/2001		21.02		2098.04
					2/19/2002		21.39		2097.68
					5/20/2002		21.65		2097.42
					8/19/2002		21.06		2098.01
					11/4/2002		21.23		2097.84
					3/4/2003		20.50		2098.57
					5/12/2003		22.12		2096.94
					8/12/2003		21.04		2098.02
					11/4/2003		21.60		2097.46
					3/16/2004		22.16		2096.91
					6/7/2004		20.32		2098.75
					9/13/2004		20.05		2099.02
					11/17/2004		20.78		2098.28
					2/28/2005		21.55		2097.52
					5/23/2005		21.88		2097.19
					8/16/2005		21.93		2097.13
					11/15/2005		22.47		2096.60
					2/7/2006		22.66		2096.41
					5/23/2006		22.35		2096.71
					8/22/2006		21.61		2097.45
					12/5/2006		20.96		2098.11
					3/12/2007		21.13		2097.94
					10/2/2007		19.24		2099.83
PNR- 7	120878.4	73768.46	2069.59	2072.22	5/31/2000		25.50		2046.72
					8/13/2001		25.19		2047.03
					9/5/2001		25.08		2047.14
					11/6/2001		25.47		2046.75
					2/19/2002		25.72		2046.50
					5/20/2002		26.20		2046.02
					8/19/2002		26.17		2046.05
					11/4/2002		26.54		2045.68
					3/4/2003		27.50		2044.72
					5/12/2003		27.39		2044.83
					8/12/2003		27.05		2045.17
					11/4/2003		27.40		2044.82
					3/16/2004		27.55		2044.67
					6/7/2004		27.32		2044.90
					9/13/2004		26.98		2045.24
					11/17/2004		27.35		2044.87
					3/1/2005		27.15		2045.07
					5/25/2005		27.90		2044.32
					8/17/2005		27.28		2044.94
					11/16/2005		27.78		2044.44
					2/9/2006		27.88		2044.34
					5/24/2006		28.09		2044.13
					8/22/2006		28.02		2044.20
					12/5/2006		27.92		2044.30
					3/12/2007		27.97		2044.25
					10/4/2007		28.07		2044.15
PNR- 8	118196.1	73316.85	2060.21	2062.99	5/31/2000		63.64		1999.35
					8/13/2001		63.53		1999.46
					9/5/2001		63.84		1999.15
					11/6/2001		64.54		1998.45
					2/19/2002		64.21		1998.78
					5/20/2002		64.40		1998.59
					8/19/2002		64.61		1998.38
					11/4/2002		64.56		1998.43
					3/4/2003		64.00		1998.99
					5/12/2003		64.84		1998.15
					8/12/2003		64.94		1998.05

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Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					11/4/2003		68.50		1994.49
					3/16/2004		65.41		1997.58
					6/7/2004		64.98		1998.01
					9/13/2004		65.16		1997.83
					11/16/2004		65.61		1997.38
					3/2/2005		65.64		1997.35
					5/26/2005		65.94		1997.05
					8/18/2005		65.75		1997.24
					11/17/2005		66.26		1996.73
					2/9/2006		66.09		1996.90
					5/24/2006		65.77		1997.22
					8/22/2006		66.11		1996.88
					12/5/2006		66.09		1996.90
					3/12/2007		66.13		1996.86
					10/2/2007		66.41		1996.58
PNR- 9	119459.5	69844.36	2014.11	2017.26	5/31/2000		56.46		1960.80
					8/13/2001		57.29		1959.97
					9/5/2001		57.28		1959.98
					11/6/2001		57.61		1959.65
					2/19/2002		57.12		1960.14
					5/20/2002		57.08		1960.18
					8/19/2002		57.90		1959.36
					11/4/2002		57.29		1959.97
					3/4/2003		57.11		1960.15
					5/12/2003		56.47		1960.79
					8/12/2003		57.33		1959.93
					11/4/2003		57.40		1959.86
					3/18/2004		57.31		1959.95
					6/7/2004		56.04		1961.22
					9/13/2004		57.12		1960.14
					11/16/2004		57.26		1960.00
					3/1/2005		57.12		1960.14
					5/24/2005		57.19		1960.07
					8/16/2005		57.38		1959.88
					11/15/2005		57.74		1959.52
					2/9/2006		57.24		1960.02
					5/23/2006		56.69		1960.57
					8/22/2006		57.67		1959.59
					12/5/2006		57.39		1959.87
					3/12/2007		59.96		1957.30
					10/2/2007		57.73		1959.53
PNR-10	117193.4	69833.02	2009.17	2011.69	5/31/2000		53.93		1957.76
					8/13/2001		53.93		1957.76
					9/5/2001		54.03		1957.66
					11/6/2001		54.37		1957.32
					2/19/2002		53.88		1957.81
					5/20/2002		53.79		1957.90
					8/19/2002		54.27		1957.42
					11/4/2002		54.04		1957.65
					3/4/2003		53.84		1957.85
					5/12/2003		53.17		1958.52
					8/12/2003		54.11		1957.58
					11/4/2003		54.30		1957.39
					3/18/2004		53.99		1957.70
					6/7/2004		52.74		1958.95
					9/13/2004		53.85		1957.84
					11/16/2004		53.99		1957.70
					3/1/2005		53.80		1957.89
					5/24/2005		53.94		1957.75
					8/16/2005		54.11		1957.58
					11/15/2005		54.48		1957.21
					2/7/2006		54.03		1957.66
					5/23/2006		53.38		1958.31
					8/22/2006		54.42		1957.27
					12/5/2006		54.11		1957.58
					3/12/2007		53.55		1958.14
					10/2/2007		54.41		1957.28
PNR-12	120894.2	77696.47	2098.44	2101.23	5/31/2000		51.10		2050.13

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Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					8/13/2001		49.90		2051.33
					9/5/2001		49.67		2051.56
					11/6/2001		50.52		2050.71
					2/19/2002		50.80		2050.43
					5/20/2002		51.40		2049.83
					8/19/2002		51.20		2050.03
					11/4/2002		50.86		2050.37
					3/4/2003		51.79		2049.44
					5/12/2003		51.95		2049.28
					8/12/2003		50.80		2050.43
					11/4/2003		54.10		2047.13
					3/16/2004		51.75		2049.48
					6/7/2004		51.01		2050.22
					9/13/2004		50.51		2050.72
					11/16/2004		51.05		2050.18
					2/28/2005		51.52		2049.71
					5/23/2005		51.74		2049.49
					8/15/2005		51.05		2050.18
					11/15/2005		51.98		2049.25
					2/7/2006		52.12		2049.11
					5/23/2006		51.54		2049.69
					8/22/2006		52.00		2049.23
					12/5/2006		52.00		2049.23
					3/12/2007		51.92		2049.31
					10/2/2007		51.20		2050.03
PNR-13	120919.1	75568.22	2079.38	2081.12	8/13/2001		30.44		2050.68
					9/5/2001		30.19		2050.93
					11/6/2001		30.46		2050.66
					2/19/2002		31.48		2049.64
					5/20/2002		32.05		2049.07
					8/19/2002		32.32		2048.80
					11/4/2002		32.34		2048.78
					3/4/2003		32.96		2048.16
					5/12/2003		33.01		2048.11
					8/12/2003		32.50		2048.62
					11/4/2003		32.87		2048.25
					3/16/2004		33.20		2047.92
					6/7/2004		32.93		2048.19
					9/13/2004		32.48		2048.64
					11/16/2004		32.27		2048.85
					3/1/2005		32.92		2048.20
					5/24/2005		33.26		2047.86
					8/17/2005		36.33		2044.79
					11/16/2005		34.33		2046.79
					2/8/2006		33.29		2047.83
					5/24/2006		33.49		2047.63
					8/22/2006		33.58		2047.54
					12/5/2006		33.63		2047.49
					3/12/2007		33.62		2047.50
					10/2/2007		33.04		2048.08
PNR-14	120383.7	75564.46	2079.82	2082.11	8/13/2001		32.50		2049.61
					9/4/2001		32.27		2049.84
					11/6/2001		32.30		2049.81
					2/19/2002		33.42		2048.69
					5/20/2002		33.77		2048.34
					8/19/2002		34.33		2047.78
					11/4/2002		34.27		2047.84
					3/4/2003		34.67		2047.44
					5/12/2003		34.71		2047.40
					8/12/2003		34.48		2047.63
					11/5/2003		34.75		2047.36
					3/16/2004		34.80		2047.31
					6/7/2004		34.71		2047.40
					9/13/2004		34.23		2047.88
					11/17/2004		34.43		2047.68
					3/2/2005		34.55		2047.56
					5/25/2005		34.78		2047.33
					8/17/2005		34.41		2047.70
					11/16/2005		34.64		2047.47

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc.

Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					2/9/2006		34.90		2047.21
					5/24/2006		34.96		2047.15
					8/22/2006		34.94		2047.17
					12/5/2006		35.10		2047.01
					3/12/2007		35.05		2047.06
					10/2/2007		34.57		2047.54
PNR-15	120382.2	75856.48	2081.92	2084.10	8/13/2001		33.86		2050.24
					9/4/2001		33.84		2050.26
					11/6/2001		34.30		2049.80
					2/19/2002		35.36		2048.74
					5/20/2002		35.87		2048.23
					8/19/2002		36.20		2047.90
					11/4/2002		36.22		2047.88
					3/5/2003	36.20	36.22	0.02	2047.89
					5/12/2003		36.81		2047.29
					8/12/2003		36.20		2047.90
					11/5/2003		36.26		2047.84
					3/16/2004		36.44		2047.66
					6/7/2004		36.31		2047.79
					9/15/2004		35.72		2048.38
					11/17/2004		36.00		2048.10
					3/2/2005		36.12		2047.98
					5/25/2005		36.39		2047.71
					8/17/2005		35.88		2048.22
					11/16/2005		36.17		2047.93
					2/8/2006		36.25		2047.85
					5/24/2006		36.48		2047.62
					8/22/2006		36.49		2047.61
					12/5/2006		36.65		2047.45
					3/12/2007		36.55		2047.55
					10/2/2007		35.98		2048.12
PNR-16	119667.9	72830.79	2053.88	2056.80	8/13/2001		13.83		2042.97
					9/5/2001		12.70		2044.10
					11/6/2001		14.50		2042.30
					2/19/2002		14.76		2042.04
					5/20/2002		13.76		2043.04
					8/19/2002		9.47		2047.33
					11/4/2002		11.69		2045.11
					3/4/2003		15.20		2041.60
					5/12/2003		10.21		2046.59
					8/12/2003		13.41		2043.39
					11/4/2003		15.42		2041.38
					3/16/2004		17.25		2039.55
					6/7/2004		7.49		2049.31
					9/13/2004		10.07		2046.73
					11/16/2004		11.90		2044.90
					3/1/2005		14.08		2042.72
					5/24/2005		12.67		2044.13
					8/17/2005		13.24		2043.56
					11/15/2005		15.89		2040.91
					2/7/2006		17.04		2039.76
					5/24/2006		13.54		2043.26
					8/22/2006		14.67		2042.13
					12/5/2006		14.36		2042.44
					3/12/2007		15.67		2041.13
					10/2/2007		16.20		2040.60
PNR-17	120093.5	75846.65	2084.06	2086.14	8/13/2001	30.40	55.62	25.22	2048.17
					9/4/2001	30.42	55.86	25.44	2048.09
					11/6/2001	30.98	55.86	24.88	2047.70
					2/19/2002	32.04	55.77	23.73	2046.98
					5/20/2002	32.75			
					8/19/2002	33.62			
					11/4/2002	37.68	40.43	2.75	2047.63
					3/4/2003	38.37	40.31	1.94	2047.19
					5/12/2003	38.55	40.42	1.87	2047.03
					8/12/2003	38.22	40.04	1.82	2047.37
					11/6/2003	38.28	41.11	2.83	2047.01
					3/16/2004	37.95	43.46	5.51	2046.54

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Pioneer Natural Resources, USA, Inc.

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Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					6/7/2004	37.83	43.33	5.50	2046.66
					9/16/2004	37.38	42.71	5.33	2047.16
					11/17/2004	38.19	40.65	2.46	2047.21
					3/2/2005	38.47	39.28	0.81	2047.43
					5/25/2005	38.55	40.15	1.60	2047.11
					8/17/2005	38.23	39.12	0.89	2047.64
					11/16/2005	38.54	38.64	0.10	2047.57
					2/8/2006	38.50	38.59	0.09	2047.61
					5/24/2006	38.78	39.02	0.24	2047.29
					8/22/2006	38.69	38.82	0.13	2047.41
					12/5/2006	39.87	39.96	0.09	2046.24
					3/12/2007	38.83	38.86	0.03	2047.30
					10/2/2007	38.32	38.35	0.03	2047.81
PNR-18	119551	77712.15	2116.21	2118.16	8/13/2001		68.90		2049.26
					9/5/2001		68.58		2049.58
					11/6/2001		69.08		2049.08
					2/19/2002		69.11		2049.05
					5/20/2002		70.10		2048.06
					8/19/2002		69.71		2048.45
					11/4/2002		69.36		2048.80
					3/4/2003		70.02		2048.14
					5/12/2003		70.38		2047.78
					8/12/2003		69.65		2048.51
					11/4/2003		70.30		2047.86
					3/16/2004		70.10		2048.06
					6/7/2004		69.44		2048.72
					9/13/2004		69.39		2048.77
					11/16/2004		69.71		2048.45
					2/28/2005		69.96		2048.20
					5/23/2005		70.13		2048.03
					8/15/2005		69.92		2048.24
					11/15/2005		70.61		2047.55
					2/7/2006		70.63		2047.53
					5/23/2006		69.96		2048.20
					8/22/2006		70.40		2047.76
					12/5/2006		70.44		2047.72
					3/12/2007		70.24		2047.92
					10/2/2007		70.05		2048.11
PNR-19	118844.2	73751.07	2071.26	2073.23	8/13/2001		25.75		2047.48
					9/5/2001		25.68		2047.55
					11/6/2001		25.98		2047.25
					2/19/2002		26.00		2047.23
					5/20/2002		26.37		2046.86
					8/19/2002		26.75		2046.48
					11/4/2002		26.86		2046.37
					3/4/2003		27.30		2045.93
					5/12/2003		27.52		2045.71
					8/12/2003		27.44		2045.79
					11/4/2003		27.58		2045.65
					3/16/2004		27.77		2045.46
					6/7/2004		27.67		2045.56
					9/13/2004		27.38		2045.85
					11/16/2004		27.46		2045.77
					3/1/2005		27.51		2045.72
					5/25/2005		27.90		2045.33
					8/17/2005		27.69		2045.54
					11/16/2005		27.85		2045.38
					2/8/2006		27.87		2045.36
					5/24/2006		28.13		2045.10
					8/22/2006		28.14		2045.09
					12/5/2006		28.29		2044.94
					3/13/2007		28.47		2044.76
					10/2/2007		28.22		2045.01
PNR-20	117277.4	75018.84	2084.55	2087.16	8/18/2001		41.20		2045.96
					9/5/2001		41.05		2046.11
					11/6/2001		41.58		2045.58
					2/19/2002		41.41		2045.75
					5/20/2002		41.60		2045.56

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Pioneer Natural Resources, USA, Inc.

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Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					8/19/2002		41.91		2045.25
					11/4/2002		41.78		2045.38
					3/4/2003		42.30		2044.86
					5/12/2003		42.41		2044.75
					8/12/2003		42.39		2044.77
					11/4/2003		45.20		2041.96
					3/16/2004		42.56		2044.60
					6/7/2004		42.57		2044.59
					9/13/2004		42.37		2044.79
					11/17/2004		42.61		2044.55
					3/1/2005		42.37		2044.79
					5/24/2005		42.71		2044.45
					8/16/2005		42.56		2044.60
					11/15/2005		43.59		2043.57
					2/9/2006		42.72		2044.44
					5/23/2006		42.57		2044.59
					8/22/2006		42.82		2044.34
					12/5/2006		42.81		2044.35
					3/12/2007		42.80		2044.36
					10/2/2007		43.05		2044.11
PNR-21	116715.5	75819.76	2099.04	2101.59	8/13/2001		58.80		2042.79
					9/5/2001		58.68		2042.91
					11/6/2001		59.12		2042.47
					2/19/2002		58.81		2042.78
					5/20/2002		58.80		2042.79
					8/19/2002		59.02		2042.57
					11/4/2002		58.89		2042.70
					3/5/2003		58.78		2042.81
					5/12/2003		58.80		2042.79
					8/12/2003		59.32		2042.27
					11/5/2003		59.70		2041.89
					3/16/2004		59.46		2042.13
					6/7/2004		59.43		2042.16
					9/13/2004		59.31		2042.28
					11/17/2004		59.46		2042.13
					3/1/2005		59.23		2042.36
					5/24/2005		59.43		2042.16
					8/16/2005		59.35		2042.24
					11/15/2005		59.82		2041.77
					2/9/2006		59.64		2041.95
					5/23/2006		59.60		2041.99
					8/22/2006		59.53		2042.06
					12/5/2006		59.57		2042.02
					3/12/2007		59.46		2042.13
					10/2/2007		59.84		2041.75
PNR-22	118350.3	77714.35	2127.38	2129.43	8/13/2001		81.50		2047.93
					9/5/2001		81.21		2048.22
					11/6/2001		81.66		2047.77
					2/19/2002		81.48		2047.95
					5/20/2002		81.90		2047.53
					8/19/2002		82.11		2047.32
					11/4/2002		81.75		2047.68
					3/4/2003		82.41		2047.02
					5/12/2003		82.62		2046.81
					8/12/2003		82.22		2047.21
					11/5/2003		82.60		2046.83
					3/16/2004		82.47		2046.96
					6/7/2004		82.24		2047.19
					9/13/2004		81.98		2047.45
					11/18/2004		82.15		2047.28
					3/1/2005		82.22		2047.21
					5/24/2005		82.65		2046.78
					8/16/2005		82.52		2046.91
					11/15/2005		83.07		2046.36
					2/7/2006		83.08		2046.35
					5/25/2006		82.58		2046.85
					8/22/2006		82.78		2046.65
					12/5/2006		82.80		2046.63
					3/12/2007		82.60		2046.83

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Pioneer Natural Resources, USA, Inc.

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Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.[a] (ft)
					10/2/2007		82.66		2046.77
PNR-23	120090.1	75562.18	2083.00	2085.27	8/13/2001		35.85		2049.42
					9/4/2001		35.90		2049.37
					11/6/2001		36.03		2049.24
					2/19/2002		36.88		2048.39
					5/20/2002		37.35		2047.92
					8/19/2002		37.78		2047.49
					11/4/2002		37.81		2047.46
					3/4/2003		38.26		2047.01
					5/12/2003		38.34		2046.93
					8/12/2003		38.13		2047.14
					11/6/2003		38.36		2046.91
					3/16/2004		38.62		2046.65
					6/7/2004		38.51		2046.76
					9/15/2004		38.10		2047.17
					11/17/2004		38.35		2046.92
					3/2/2005		38.51		2046.76
					5/25/2005		38.78		2046.49
					8/17/2005		38.44		2046.83
					11/16/2005		38.57		2046.70
					2/9/2006		38.79		2046.48
					5/25/2006		38.67		2046.60
					8/22/2006		38.75		2046.52
					12/5/2006		38.90		2046.37
					3/12/2007		38.85		2046.42
					10/2/2007		38.36		2046.91
PNR-24	120093	75563.95	2083.00	2085.68	8/13/2001		36.30		2049.38
					9/4/2001		36.31		2049.37
					11/6/2001		36.45		2049.23
					2/19/2002		37.17		2048.51
					5/20/2002		37.52		2048.16
					8/19/2002		37.88		2047.80
					11/4/2002	37.90	39.68	1.78	2047.25
					3/4/2003	38.38	40.05	1.67	2046.80
					5/12/2003	38.48	38.48	0.00	2047.20
					8/12/2003	38.39	39.35	0.96	2047.00
					11/6/2003	38.53	39.90	1.37	2046.74
					3/16/2004	38.70	44.30	5.60	2045.30
					6/7/2004	38.65	39.98	1.33	2046.63
					9/15/2004	38.33	38.51	0.18	2047.30
					11/17/2004	38.51	39.21	0.70	2046.96
					3/2/2005	38.61	39.50	0.89	2046.80
					5/25/2005	38.74	39.91	1.17	2046.59
					8/17/2005	38.54	38.89	0.35	2047.03
					11/16/2005	38.65	39.09	0.44	2046.90
					2/8/2006	38.63	39.24	0.61	2046.87
					5/24/2006	38.90	39.87	0.97	2046.49
					8/22/2006	38.86	39.85	0.99	2046.52
					12/5/2006	39.12	39.75	0.63	2046.37
					3/12/2007	39.06	39.26	0.20	2046.56
					10/2/2007		38.65		2047.03
PNR-25	120376.3	75850.35	2081.92	2084.03	8/13/2001	33.78	34.08	0.30	2050.16
					9/4/2001		33.73		2050.30
					11/6/2001		34.09		2049.94
					2/19/2002	34.98	36.63	1.65	2048.56
					5/20/2002	35.36			
					8/19/2002	35.64			
					11/4/2002	35.55	37.48	1.93	2047.90
					3/4/2003	35.91	38.04	2.13	2047.48
					5/12/2003	36.02	38.04	2.02	2047.40
					8/12/2003	35.62	37.03	1.41	2047.99
					11/5/2003	35.15	37.50	2.35	2048.17
					3/16/2004	35.93	38.00	2.07	2047.48
					6/7/2004	35.86	37.53	1.67	2047.67
					9/15/2004	35.37	36.58	1.21	2048.30
					11/17/2004	35.60	37.08	1.48	2047.99
					3/2/2005	35.66	37.35	1.69	2047.86
					5/25/2005	35.90	37.86	1.96	2047.54

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HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					8/17/2005	35.55	37.03	1.48	2048.04
					11/16/2005	35.77	37.51	1.74	2047.74
					2/8/2006	35.82	37.88	2.06	2047.59
					5/24/2006	36.01	38.12	2.11	2047.39
					8/22/2006	36.04	38.19	2.15	2047.34
					12/5/2006	36.15	38.30	2.15	2047.23
					3/12/2007	36.12	38.23	2.11	2047.28
					10/2/2007	35.65	37.02	1.37	2047.97
PNR-26	120096.8	75842.87	2084.06	2086.15	8/13/2001	34.65	36.85	2.20	2050.84
					9/4/2001	35.96	37.12	1.16	2049.84
					11/6/2001	36.24	37.12	0.88	2049.65
					2/19/2002	36.98	39.30	2.32	2048.47
					5/20/2002	37.43			
					8/19/2002	37.78			
					11/4/2002	37.76	40.15	2.39	2047.67
					3/4/2003	38.11	40.07	1.96	2047.45
					5/12/2003	38.20	40.09	1.89	2047.38
					8/12/2003	37.82	39.98	2.16	2047.68
					11/6/2003	37.93	39.99	2.06	2047.60
					3/16/2004	38.80	40.01	1.21	2046.99
					6/7/2004	38.02	40.02	2.00	2047.53
					9/16/2004	37.60	39.73	2.13	2047.91
					11/17/2004	37.79	39.98	2.19	2047.70
					3/2/2005	37.87	40.00	2.13	2047.64
					5/25/2005	38.01	39.92	1.91	2047.57
					8/17/2005	37.78	40.00	2.22	2047.70
					11/16/2005	37.92	40.00	2.08	2047.61
					2/8/2006	37.90	40.01	2.11	2047.62
					5/24/2006	38.23	40.05	1.82	2047.37
					8/22/2006	38.18	40.04	1.86	2047.41
					12/5/2006	38.35	40.05	1.70	2047.29
					3/12/2007	38.34	40.03	1.69	2047.30
					10/2/2007	37.94	40.03	2.09	2047.58
PNR-27	115617	75023.06	2092.86	2095.30	9/5/2001		67.28		2028.02
					11/6/2001		55.68		2039.62
					2/19/2002		55.32		2039.98
					5/20/2002		55.25		2040.05
					8/19/2002		55.34		2039.96
					11/4/2002		55.25		2040.05
					3/5/2003		55.17		2040.13
					5/12/2003		55.62		2039.68
					8/12/2003		55.67		2039.63
					11/5/2003		56.20		2039.10
					6/7/2004		56.80		2038.50
					9/13/2004		55.73		2039.57
					11/17/2004		55.91		2039.39
					3/2/2005		55.63		2039.67
					5/24/2005		55.79		2039.51
					8/16/2005		55.64		2039.66
					11/15/2005		56.04		2039.26
					2/8/2006		55.65		2039.65
					5/23/2006		55.66		2039.64
					8/22/2006		55.85		2039.45
					12/5/2006		55.92		2039.38
					3/12/2007		55.79		2039.51
					10/2/2007		56.23		2039.07
PNR-28	115394.9	73020.13	2079.64	2078.44	9/5/2001		46.38		2032.06
					11/6/2001		44.85		2033.59
					2/19/2002		44.67		2033.77
					5/20/2002		44.45		2033.99
					8/19/2002		44.59		2033.85
					11/4/2002		44.55		2033.89
					3/5/2003		44.49		2033.95
					5/12/2003		44.40		2034.04
					8/12/2003		44.89		2033.55
					11/5/2003		46.20		2032.24
					6/7/2004		45.24		2033.20
					9/15/2004		45.19		2033.25

Table 1 - Depth to Water and LNAPL in Monitor Wells and Domestic Wells

Pioneer Natural Resources, USA, Inc.

Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					11/17/2004		45.28		2033.16
					3/1/2005		45.06		2033.38
					5/25/2005		45.23		2033.21
					8/16/2005		45.02		2033.42
					11/15/2005		45.61		2032.83
					2/8/2006		45.17		2033.27
					5/23/2006		45.17		2033.27
					8/22/2006		45.21		2033.23
					12/5/2006		45.37		2033.07
					3/12/2007		45.24		2033.20
					10/2/2007		45.65		2032.79
PNR-29	113949.1	73049.79	2073.76	2072.64	9/5/2001		41.86		2030.78
					11/6/2001		40.28		2032.36
					2/19/2002		40.03		2032.61
					5/20/2002		39.80		2032.84
					8/19/2002		39.96		2032.68
					11/4/2002		39.82		2032.82
					3/5/2003		39.70		2032.94
					5/12/2003		40.17		2032.47
					8/12/2003		40.21		2032.43
					11/4/2003		40.70		2031.94
					6/15/2004		40.54		2032.10
					9/15/2004		40.54		2032.10
					11/17/2004		40.64		2032.00
					3/1/2005		40.39		2032.25
					5/25/2005		40.68		2031.96
					8/16/2005		40.42		2032.22
					11/15/2005		41.03		2031.61
					2/8/2006		40.45		2032.19
					5/23/2006		40.47		2032.17
					8/22/2006		40.60		2032.04
					12/5/2006		40.63		2032.01
					3/12/2007		40.68		2031.96
					10/2/2007		40.95		2031.69
PNR-30-06				2083.55	10/19/2006		37.91		2045.64
					12/5/2006	37.50	40.70	3.20	2045.09
					3/12/2007	37.39	40.86	3.47	2045.12
PNR-31-06				2100.98	10/19/2006		58.69		2042.29
					12/5/2006		58.85		2042.13
					3/12/2007		58.59		2042.39
					10/2/2007		58.95		2042.03
PNR-32-06				2100.01	10/19/2006		57.87		2042.14
					12/5/2006		58.00		2042.01
					3/12/2007		57.80		2042.21
					10/2/2007		58.16		2041.85
PNR-33-06				2144.53	10/19/2006		102.50		2042.03
					12/5/2006		100.76		2043.77
					3/12/2007		102.35		2042.18
					10/2/2007		102.81		2041.72
PNR-34-07				2052.14	3/12/2007		93.84		1958.30
					10/2/2007		94.31		1957.83
PNR-35-07				2059.75	3/12/2007		71.15		1988.60
					10/2/2007		71.55		1988.20
PNR-36-07				2107.00	3/12/2007		54.74		2052.26
					10/2/2007		53.88		2053.12
USGS 92-12	123453.5	75096.38	2063.92	2065.92	5/31/2001		15.10		2050.82
					8/13/2001		10.70		2055.22
					9/5/2001		12.12		2053.80
					11/6/2001		13.11		2052.81
					2/19/2002		13.85		2052.07
					5/20/2002		13.65		2052.27
					8/19/2002		12.68		2053.24

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Pioneer Natural Resources, USA, Inc.

Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					11/4/2002		12.77		2053.15
					3/4/2003		14.20		2051.72
					5/12/2003		12.58		2053.34
					8/12/2003		11.99		2053.93
					11/5/2003		17.10		2048.82
					6/7/2004		10.75		2055.17
					9/14/2004		10.70		2055.22
					11/16/2004		12.35		2053.57
					3/1/2005		13.28		2052.64
					5/25/2005		12.02		2053.90
					8/17/2005		11.00		2054.92
					11/15/2005		12.50		2053.42
					2/7/2006		13.08		2052.84
					5/24/2006		12.22		2053.70
					8/22/2006		14.04		2051.88
					12/5/2006		14.90		2051.02
					3/12/2007		14.97		2050.95
					10/2/2007		12.84		2053.08
USGS 93-3	119878.7	75070.93	2082.10	2083.46	5/31/2001		35.07		2048.39
					11/6/2001		35.22		2048.24
					2/19/2002		35.72		2047.74
					5/20/2002		36.30		2047.16
					8/19/2002		36.75		2046.71
					11/4/2002		36.81		2046.65
					3/4/2003		37.20		2046.26
					5/12/2003		37.23		2046.23
					8/12/2003		37.16		2046.30
					11/4/2003		37.32		2046.14
					3/16/2004		39.58		2043.88
					6/7/2004		37.47		2045.99
					9/14/2004		37.07		2046.39
					11/17/2004		37.25		2046.21
					3/1/2005		37.26		2046.20
					5/25/2005		37.52		2045.94
					8/17/2005		37.35		2046.11
					11/16/2005		37.41		2046.05
					2/9/2006		37.75		2045.71
					5/24/2006		37.90		2045.56
					8/22/2006		37.92		2045.54
					12/5/2006		38.00		2045.46
					3/12/2007		38.02		2045.44
					10/2/2007		37.72		2045.74
USGS 93-3a	119884.1	75079.3	2081.97	2083.23	8/13/2001		35.15		2048.08
					9/5/2001		35.11		2048.12
					11/6/2001		34.96		2048.27
					5/20/2002		36.05		2047.18
					8/19/2002		36.62		2046.61
					11/4/2002		36.59		2046.64
					8/12/2003		36.94		2046.29
					11/5/2003		37.89		2045.34
					6/7/2004		37.28		2045.95
					11/17/2004		37.25		2045.98
					3/1/2005		37.26		2045.97
					5/25/2005		37.52		2045.71
Whitmer	116848.4	69257.85	1980.41	1981.44	5/31/2001		23.82		1957.62
					11/6/2001		24.30		1957.14
					2/19/2002		24.30		1957.14
					5/20/2002		24.10		1957.34
					8/19/2002		24.20		1957.24
					11/4/2002		24.30		1957.14
					3/4/2003		24.30		1957.14
					5/12/2003		24.20		1957.24
					8/12/2003		25.00		1956.44
					3/18/2004		24.10		1957.34
					6/7/2004		22.09		1959.35
					9/16/2004		23.90		1957.54
					11/18/2004		24.20		1957.24
					3/2/2005		24.10		1957.34

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Biere 1-22 Investigation

HKM Job No.: 14B805.101

Well Location and Elevation					Fluid Levels				
Well Name	Northing	Easting	Ground Surface Elev. (ft)	Measure Pt. Elev. (ft)	Gauging Date	Depth to LNAPL (ft bmp)	Depth to Water (ft bmp)	LNAPL Thickness (ft)	Groundwater Elev.* (ft)
					5/24/2005		24.20		1957.24
					8/16/2005		24.03		1957.41
					11/17/2005		24.22		1957.22
					2/9/2006		23.84		1957.60
					5/25/2006		23.58		1957.86
					8/22/2006		24.40		1957.04
					12/5/2006		24.07		1957.37
					3/12/2007		23.51		1957.93
					10/2/2007		24.30		1957.14

Notes:

* = Groundwater elevation corrected for LNAPL thickness; Corrected Depth to Water = Depth to Water - .7 x Accum. LNAPL.

All elevations are provided in feet above mean sea level (MSL).

Accronyms/Abbreviations:

ft	feet
ft bmp	feet below measure point
LNAPL	light non-aqueous phase liquid

Table 2

Inorganic Water Chemistry Data

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH S.U.	Dissolved Oxygen mg/L	Specific Conductance mS	Temperature °C	Temperature °F	Alkalinity as $CaCO_3$ mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Fluoride mg/L	Hardness, Total as $CaCO_3$ mg/L	Iron mg/L	Magnesium mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids @ 180° C mg/L	Specific Conductance @ 25° C mS	Sulfate mg/L
LAW-M03	3/13/07 5:40 PM	7.25	0.24	6.115	9.7	49.46	429	524	396	< 4	1370	0.22	1960	NA	237	2	< 0.05	7.1	14	32.2	NA	690	4270	6.4	1100
Lockman (city)	5/26/2005 11:05:00 AM	7.58	NM	2.4	9.3	48.74	432	521	58	< 4	173	0.45	273	NA	31	< 0.1	< 0.05	7.6	5	19.1	17.2	312	1170	1.84	235
M-18	11/8/2001 3:30:00 PM	NM	NM	NM	17.22	63.00	111	135	669	< 1	5190	NA	2920	NA	303	37.5	< 0.05	5.9	32	NA	< 3	1630	8600	13.5	25
M-18	8/23/2006 10:30:00 AM	7.38	NM	17.5	10.37	50.67	258	315	730	< 4	5620	0.2	3580	NA	426	9.7	< 0.05	6.8	25	15.1	18.4	2790	11800	18	1000
M-18	12/6/2006 12:25:00 PM	6.96	NM	16.8	9.2	48.56	141	172	435	< 4	5470	< 0.1	2810	NA	418	29.1	< 0.05	7.1	28	5.9	8	2740	10300	17.4	621
M-27	8/16/2001 2:35:00 PM	9.3	NM	13.5	11.3	52.34	14	17	687	< 1	5280	NA	3940	NA	540	1.8	< 0.05	8.8	19	< 1	NA	1640	10400	13.1	160
M-27	8/16/2001 2:45:00 PM	9.3	NM	13.5	11.3	52.34	12	15	681	< 1	5380	NA	3920	NA	538	4	< 0.05	7.7	19	< 1	NA	1610	10900	13.2	156
M-27	11/8/2001 8:50:00 AM	8.3	NM	11.4	10	50.00	4	5	710	< 1	5650	NA	4050	NA	553	4.3	< 0.05	6.7	23	NA	< 3	1670	9920	14.2	433
M-27	2/20/2002 3:42:00 PM	7.88	NM	10.9	10.6	51.08	389	475	917	< 4	5710	NA	4450	NA	524	2.7	< 0.05	6.7	42	17	NA	1700	10500	16.6	814
M-27	5/21/2002 3:05:00 PM	7.28	NM	17.2	13.1	55.58	211	258	839	< 4	7110	0.15	4130	NA	494	2.7	< 0.05	6.9	20	20	NA	1620	12000	16.8	1160
M-27	8/20/2002 5:45:00 PM	8.1	NM	14.9	12.8	55.04	4	5	707	< 4	5750	< 0.1	3740	NA	479	4.2	< 0.05	5.7	19	< 2	< 2	1560	12200	16	664
M-27	11/6/2002 9:00:00 AM	8.55	NM	16.4	11.6	52.88	< 4	4	732	< 4	5100	< 0.1	3990	NA	526	2.6	< 0.05	6	23	< 2	< 2	1730	10500	17	619
M-27	3/5/2003 1:20:00 PM	7.78	NM	14.9	10.3	50.54	14	17	790	< 4	5640	< 0.1	4230	NA	547	2.6	< 0.05	6.5	24	2	< 2	1830	10300	16.7	649
M-27	5/13/2003 10:30:00 AM	7.96	NM	14.4	11.6	52.88	5	6	771	< 4	5590	< 0.1	4250	NA	565	2.6	< 0.05	5.9	25	< 2	< 2	1730	10300	15.6	525
M-27	8/13/2003 11:10:00 AM	8.02	NM	15.6	13.5	56.30	11	14	746	< 1	6460	< 0.1	4070	NA	536	3.8	< 0.05	6.1	25	< 2	2	1690	11000	13.3	481
M-27	11/6/2003 10:00:00 AM	8.01	NM	16.28	8.7	47.66	5	6	732	< 4	6390	< 0.1	4070	NA	545	5.6	< 0.05	6.5	27	< 2	< 4	1800	10300	14.9	418
M-27	6/8/2004 3:15:00 PM	7.91	NM	NM	12.7	54.86	30	36	725	< 4	5970	0.11	4050	NA	544	7.2	< 0.05	6.7	24	2.7	2.7	1890	11600	14.4	564
M-27	9/15/2004 12:25:00 PM	7.16	NM	16.4	14.9	58.82	214	261	1000	< 4	5920	0.14	4870	NA	576	3	< 0.05	6.7	24	17.8	19	1870	13900	17.5	919
M-27	11/18/2004 3:35:00 PM	7.19	NM	16.7	12.3	54.14	< 4	< 4	812	< 4	6050	< 0.1	4380	NA	571	3	< 0.05	6.2	24	3.1	3.3	2090	11700	17.5	961
M-27	3/1/2005 12:05:00 PM	6.81	NM	18.1	13.4	56.12	< 4	< 4	767	< 4	5980	< 0.1	4240	NA	565	2.7	< 0.05	5.8	30	3	2	2100	11700	17	835
M-27	5/24/2005 11:20:00 AM	7	NM	17.5	13.1	55.58	< 4	< 4	797	< 4	5790	< 0.1	4160	NA	528	3.8	< 0.05	5.8	19	< 0.4	1.9	2310	11300	16.6	737
M-27	8/16/2005 9:30:00 AM	6.9	NM	5.2	15.2	59.36	< 4	< 4	776	< 4	5790	< 0.1	4210	NA	553	2.8	< 0.05	5.7	18	1	< 0.9	1980	12200	17.4	801
M-27	11/15/2005 2:28:00 PM	6.42	NM	12.68	9.8	49.64	< 4	< 4	758	< 4	5270	< 0.1	4050	NA	525	3.4	< 0.05	5.8	21	1.1	1.1	2150	10000	15.6	721
M-27	2/7/2006 1:10:00 PM	7.19	NM	13.9	9.9	49.82	< 4	< 4	800	< 4	5250	< 0.1	4060	NA	500	3.4	< 0.05	6.2	26	5.6	6.3	2120	9820	15.9	712
M-27	5/23/2006 2:00:00 PM	7.65	NM	16.5	16.6	61.88	< 4	< 4	865	< 4	6520	< 0.1	4670	NA	608	2.6	< 0.05	5.5	27	1.8	2	2400	11200	17.9	853
M-27	8/22/2006 2:30:00 PM	7.33	NM	18.35	9.83	49.69	< 4	< 4	884	< 4	6040	< 0.1	4600	NA	581	3	< 0.05	6.2	26	3.5	6.9	2420	12400	18.3	793
M-27	12/6/2006 1:40:00 PM	7.09	NM	18.1	9.4	48.92	< 4	< 4	844	< 4	6170	< 0.1	4500	NA	582	3.2	< 0.05	5.3	27	1.2	< 0.9	2400	11600	18.7	868
M-27	3/14/2007 5:30:00 PM	6.88	0.51	16.59	9.79	49.62	< 4	< 4	805	< 4	6200 D	< 0.1	4330	NA	564	2.8	< 0.05	4.4	29	38 D	NA	2330 D	12300	18.5	806 D
M-27	10/4/2007 12:30:00 PM	7.1	NM	17500	11	51.80	33	40	912	< 4	6520	< 0.1	4570	NA	557	3.3	< 0.05	6.6	23	12	13	2260	13100	19.8	1070
M-28	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	600	732	1530	< 1	25800	NA	6920	8.6	749	NA	20.9	7.1	62	NA	NA	14200	44700	58.9	1910
M-28	8/9/2001 12:15:00 PM	6.9	NM	57.7	11.5	52.70	676	825	1210	< 1	23800	NA	5600	NA	628	4	27.9	6.9	57	17.3	NA	11300	40500	53.5	1880
M-28	8/16/2001 5:00:00 PM	7.1	NM	54.9	11.1	51.98	616	751	1340	< 1	22600	NA	6130	NA	677	5.4	24.6	7	62	19.3	NA	12800	41000	48.6	2260
M-28	11/8/2001 12:00:00 PM	NM	NM	NM	17.78	64.00	761	929	217	< 1	1410	NA	1240	NA	169	0.4	31.3	7.3	13	NA	29	873	3950	60.9	687
M-28	2/21/2002 8:40:00 AM	6.63	NM	59.3	10.2	50.36	633	772	1250	< 4	25900	NA	5620	NA	607	6.9	15	7	77	17	NA	13300	43800	47.4	1400
M-28	5/23/2002 9:30:00 AM	5.2	NM	66.1	12	53.60	598	730	1220	< 4	31000	0.13	5080	NA	491	8.8	8.35	6.8	87	20	NA	15600	50700	57.7	1920
M-28	8/21/2002 10:00:00 AM	6.5	NM	61.1	12.6	54.68	609	742	1240	< 4	25500	0.15	5620	NA	614	8	12.9	6.8	51	18	18	9540	45900	51.8	1700
M-28	11/6/2002 11:20:00 AM	6.9	NM	62.6	11.3	52.34	612	746	1210	< 4	22400	0.15	5330	NA	562	6.7	17	6.9	71	< 20	< 10	12600	43100	44	1840
M-28	3/5/2003 3:30:00 PM	6.8	NM	54.6	10.7	51.26	606	739	1190	< 4	22400	0.2	5140	NA	528	6.6	19.7	6.8	62	18	22	11200	40500	32.9	2330
M-28	5/13/2003 4:45:00 PM	7.27	NM	52.4	12	53.60	603	736	1180	< 4	24300	0.16	5220	NA	551	6.7	16.9	6.7	93	16	19	13800	43800	65	1700
M-28	8/13/2003 3:35:00 PM	7.61	NM	55.2	13	55.40	627	765	1130	< 1	21900	0.2	5150	NA	564	6	22.7	6.7	113	21	22	11400	38600	51.5	1220
M-28	11/5/2003 10:30:00 AM	5.15	NM	51.8	11.5	52.70	635	775	978	< 4	23000	0.26	4440	NA	484	6.5	23.7	6.8	76	17	< 20	10300	38700	32.8	1370
M-28	3/16/2004 5:34:00 PM	6.3	NM	48.8	8.8	47.84	695	848	1030	< 1	13800	0.15	5240	NA	645	3.3	37.6	6.9	61	24	24	7520	25800	37.5	1590
M-28	6/8/2004 5:18:00 PM	7.02	NM	NM	11.9	53.42	667	814	1030	< 4	19200	0.21	4850	NA	551	5.6	23.3	6.9	77	20	21	9940	16900	34.3	2020
M-28	9/15/2004 2:00:00 PM	6.66	NM	49.9	13.7	56.66	669	816	1040	< 4	20500	0.28	4860	NA	549	6.7	23.3	7	94	19	25	10800	35600	52.1	1820
M-28	11/19/2004 8:36:00 AM	7.06	NM	51.3	10.6	51.44	662	808	1070	< 4	16000	0.18	5040	NA	576	4.5	27.2	6.8	82	23	24	9280	32000	47.8	1730
M-28	3/1/2005 3:45:00 PM	6.63	NM	55.1	13	55.40	703	857	1040	< 4	17800	0.18	4980	NA	579	5.3	22.5	6.9	94	21	23	10900	32800	47.9	1700
M-28	5/24/2005 1:10:00 PM	6.95	NM	NM	11.9	53.42	605	738	936	< 4	14900	0.19	4610	NA	552	4.6	27.9	7	68	16	22	8890	28400	42	1940
M-28	8/16/2005 1:15:00 PM	6.74	NM	48.5	15.8	60.44	703	858	899	< 4	17700	0.23	4320	NA	504	5.3	22.3	7.3	62	22	21	9980	30200	45.8	1570
M-28	11/15/2005 4:35:00 PM	6.61	NM	41.6	10	50.00	630	769	990	< 4	16200	0.18	4870	NA	584	5.1	20.1	7	79	23	22	9880	26800	42.8	1740
M-28	2/7/2006 4:30:00 PM	7.01	NM	45.2	9.8	49.64	679	829	972	< 4	16000	0.17	4630	NA	534	5.1	19.8	6.9	73	21	19	9450	28600	44.6	1730
M-28	5/23/2006 4:20:00 PM	6.69	NM	39.1	11.75	53.15	656	800	954	< 4	16300	0.17	4530	NA	522	4.5	19.4	7.5	65	22	22	9010	24500	42.7	1850
M-28	8/22/2006 4:45:00 PM	7.3	NM	41	10.5	50.90	627	765	872	< 4	14200	0.2	4260	NA	505	4.1	9.84	6.8	56	23	22	8060	25600	40.4	1760
M-28	12/6/2006 2:40:00 PM	6.8	NM	37.18	9.9	49.82	634	774	877	< 4	14300	0.2	4261	NA	503	4.2	22.6	6.9	67	23	53	8480	26600	42	1600
M-28	3/15/2007 10:15:00 AM	6.48	0.11	29.06	9.86	49.75	662	808	816	< 4	11200 D	0.18	4290	NA	548	3.5	23.6	6.9	57	169 D	NA	6280 D	21200	32.5	1770 D
M-28	10/3/2007 4:40:00 PM	6.51	0.58	30720	10.3	50.54	647	789	733	< 4	10900	0.2	3800	NA	479	3	18	6.8	47	22	22	5820	20700	34.2	1830
M-30	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	1020	1240	126	< 1	36	NA	801	5.63	118	NA	< 0.05	8	7	NA	NA	325	1740	2.38	501
M-30	2/22/2002 1:00:00 PM	7.64	NM	2.9	5.6	42.08	905	1100	113	< 4	43	NA	735	NA	110	4	< 0.05	7.5	7	27.5	NA	325	1790	2.56	549
M-30	5/22/2002 5:10:00 PM	7.53	NM	2.58	7	44.60	916	1120	111	< 1	34	0.29	700	NA	103	5.6	< 0.05	7.6	8	31.5	NA	291	1730	2.6	539
M-30	8/21/2002 10:40:00 AM	7.3	NM	2.1	14.2	57.56	931	1140	114	< 4	42	0.33	733	NA	109	5.8	< 0.05	7.7	6	26.7	23.5	257	1650	2.48	528
M-31	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	461	562	1760	< 1	36000	NA	7610	9.5	783	NA	0.17	7.1	122	NA	NA	20200	60800	80.5	1690
M-31	8/9/2001 11:05:00 AM	6.9	NM	88.5	10.7	51.26	515	628	1540	< 1	35900	NA	6530	NA	649	6.6	< 0.05	6.9	150	15.6	NA	19600	63800	74.2	1220
M-31	8/16/2001 5:30:00 PM	7	NM	84.3	11.2	52.16	516	630	1640	< 1	37200	NA	6820	NA	659	6.9	< 0.05	6.9	150	15.8	NA	21900	63300	68.3	2120
M-31	11/8/2001 4:00:00 PM	6.5	NM	51.4	11.67	53.01	6	8	1170	< 1	28300	NA	7350	NA	1070	11.3	0.06	6	110	NA	< 5	15700	50200	39.8	840
M-31	2/21/2002 9:45:00 AM	6.58	NM	81.4	10.3	50.54	464	566	1570	< 4	38600	NA	6510	NA	630	7.5	< 0.05	7	207	17	NA	20800	63000	58.4	1690
M-31	5/22/2002 3:45:00 PM	6.75	NM	94.4	11.8	53.24	513	626	1440	< 4	39700	0.12	5950	NA	571	7.7	< 0.05	6.8	162	24	NA	20000	63700	64.7	2210
M-31	8/21/2002 10:45:00 AM	6.5	NM	83.5	12.1	53.78	504	615	1530	< 4	39200	0.12	6390	NA	626	8.4	< 0.05	6.8	136	16	14	16600	67100	67.5	1760
M-31	11/6/2002 10:35:00 AM	6.84	NM	89.2	10.8	51.44	510	622	1520	< 4	33600	0.13	6260	NA	601	8.1	< 0.05	6.8	177	17	< 10	19100	62800	55	1650
M-31	3/5/2003 2:10:00 PM	6.72	NM	81.9	10.2	50.36	353	430	1540	< 4	39200	0.1	6210	NA	574	7.6	< 0.05	6.7	169	16	15	19300	62600	43.2	1740

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
M-31	5/13/2003 4:00:00 PM	7.21	NM	79.1	11.3	52.34	505	616	1500	< 4	36100	0.13	6180	NA	588	8.1	< 0.05	6.7	238	13	15	22200	63500	85	1530
M-31	8/13/2003 2:40:00 PM	7.49	NM	86.1	12.7	54.86	503	613	1480	< 1	37300	0.13	6070	NA	577	8	< 0.05	6.6	229	16	18	20400	63900	81.9	1050
M-31	11/5/2003 11:35:00 AM	NM	NM	83	11.1	51.98	502	612	1020	< 4	37700	0.15	4400	NA	450	8.4	< 0.05	6.7	206	16	< 20	18900	62100	42.1	1140
M-31	3/16/2004 4:00:00 PM	6.1	NM	68.8	9.3	48.74	503	614	1570	< 1	42000	0.11	6110	NA	604	9.5	< 0.05	6.7	214	16.8	17.3	20200	62900	87.1	1330
M-31	6/8/2004 4:40:00 PM	6.94	NM	NM	11.4	52.52	506	618	1450	< 4	39400	0.17	5930	NA	559	9.2	< 0.05	6.8	182	15	16	18800	62100	89.1	1700
M-31	9/15/2004 3:00:00 PM	6.58	NM	88.5	14.5	58.10	518	632	1510	< 4	39500	0.2	6150	NA	577	9.9	< 0.05	6.9	227	17	17	20900	64800	90.5	1560
M-31	11/18/2004 5:00:00 PM	6.84	NM	86.1	10.7	51.26	503	613	1590	< 4	37000	0.14	6390	NA	590	8.8	< 0.05	6.7	274	18	18	20700	62700	91.4	1510
M-31	3/1/2005 1:45:00 PM	6.48	NM	98	12.5	54.50	550	671	1560	< 4	40300	0.13	6380	NA	603	8.8	< 0.05	6.8	264	21	31	23000	62800	89.9	1560
M-31	5/24/2005 3:05:00 PM	6.82	NM	NM	11	51.80	465	568	1420	< 4	37700	0.17	5770	NA	540	9.1	0.08	6.7	251	7	14	22800	61800	89.6	1620
M-31	8/16/2005 11:30:00 AM	6.49	NM	95.5	17.5	63.50	550	671	1530	< 4	35300	0.14	6260	NA	592	10.1	< 0.05	6.9	185	17	20	20700	61400	90	1310
M-31	11/15/2005 3:30:00 PM	6.4	NM	89	9.1	48.38	461	562	1630	< 4	39700	0.12	6700	NA	637	9.1	< 0.05	7	218	28	44	23600	57700	91.9	12
M-31	2/7/2006 2:00:00 PM	7.22	NM	4.6	10.2	50.36	528	645	1560	< 4	37300	0.11	6180	NA	558	10	< 0.05	7.1	262	17	17	22400	61200	90.4	1460
M-31	5/23/2006 5:20:00 PM	6.53	NM	86.02	11.25	52.25	510	622	1560	< 4	39700	0.12	6040	NA	523	10.1	< 0.05	7.4	305	19	22	22500	57200	91.3	1510
M-31	8/23/2006 1:30:00 PM	6.7	NM	93.6	10.3	50.54	483	589	1550	< 4	37600	0.1	6090	NA	542	4.3	< 0.05	6.6	220	23	23	23000	59800	94.3	1500
M-31	12/6/2006 3:45:00 PM	6.44	NM	92.2	9.2	48.56	499	609	1450	< 4	39400	0.1	5780	NA	527	11.5	< 0.05	6.8	239	19	19	22700	62900	95.2	1550
M-31	3/15/2007 11:30:00 AM	6.31	0.06	88.86	9.4	48.92	497	607	1570	< 4	40800 D	0.12	6380	NA	595	11.9	< 0.05	6.7	259 D	58 D	NA	24100	64000	93.6	1490 D
M-31	10/4/2007 2:30:00 PM	6.77	0.3	89070	9.92	49.86	498	607	1550	< 4	40800	0.1	6160	NA	558	13.2	< 0.05	6.6	239	21	19	22300	63300	99.1	1620
M-36	9/6/2001 3:55:00 PM	7.6	NM	3.8	10.9	51.62	661	807	206	< 1	259	NA	1160	NA	156	1.1	< 0.05	6.6	7	21.3	NA	458	2920	3.49	1230
M-36	11/9/2001 11:05:00 AM	7.4	NM	2.7	9.6	49.28	649	792	215	< 1	313	NA	1210	NA	163	1	0.05	7.2	8	NA	27.9	478	2960	3.77	1220
M-39	11/7/2001 3:45:00 PM	NM	NM	NM	9.44	48.99	401	413	10	38	34	NA	1020	NA	241	8.8	< 0.05	8.9	8	NA	1.7	269	2150	2.64	1250
MOC-1B	10/3/2007 10:35:00 AM	6.99	0.19	4351	9.82	49.68	426	520	358	< 4	74	0.2	2080	NA	289	< 0.1	32.2	7.2	9	23.4	25.3	367	3920	4.62	2280
MOC-2	3/13/2007 5:00:00 PM	6.46	0.12	20.26	9.7	49.46	321	391	1060	< 4	7050 D	0.17	4990	NA	571	3.6	< 0.05	6.8	28	76.9 D	NA	2750 D	13800	20.6	1730
MOC-2	10/5/2007 2:30:00 PM	6.85	0.27	20.96	9.69	49.44	270	330	1060	< 4	7110	0.2	4950	NA	556	4	< 0.05	6.8	25	20	26	2840	14600	21.2	1540
MOC-3	3/14/2007 11:50:00 AM	7.19	0.37	3.601	9.69	49.44	360	439	318	< 4	74	0.47	1690	NA	218	< 0.1	13.4	7.3	12	43.1	NA	400	3500	4	1890
MOC-3	10/2/2007 7:00:00 PM	6.94	0.16	3817	9.73	49.51	359	438	299	< 4	76	0.5	1580	NA	202	< 0.1	15.2	7.1	10	19.3	30.3	379	3370	4.06	1890
MOC-4	10/4/2007 11:00:00 AM	7.24	0.08	9217	9.86	49.75	330	403	446	< 4	2580	0.2	2290	NA	266	1.3	< 0.05	7.1	15	17.9	20.1	1230	5550	9.6	817
MOC-1B	3/14/2007 12:55:00 PM	7.22	0.29	4.06	9.68	49.42	433	528	363	< 4	75	0.19	2150	NA	301	< 0.1	30.6	7.2	11	31.8	NA	384	4070	4.5	2220
MOC-20A	3/13/2007 1:40:00 PM	6.49	0.76	5.494	9.39	48.90	343	419	503	< 4	128	0.39	3020	NA	429	0.9	41.7 D	7.2	24	37.9	NA	464	5480	5.78	3220
MOC-20A	10/3/2007 5:00:00 PM	7.27	0.36	5546	9.98	49.96	311	379	473	< 4	125	0.4	2860	NA	408	0.3	22	7.2	23	40.1	106	462	5370	5.89	3290
MOC-20B	3/13/2007 3:00:00 PM	6.52	0.1	4.271	9.65	49.37	400	488	340	< 4	163	0.32	1660	NA	202	1.3	< 0.05	7.1	9	29.7	NA	513	3790	4.46	2020
MOC-20B	10/3/2007 1:30:00 PM	6.95	0.11	4363	10.04	50.07	402	490	323	< 4	181	0.3	1600	NA	192	1.2	< 0.05	7	9	25.9	30.6	490	3800	4.68	2050
PNR-4	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.6	49.64	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PNR-4	8/10/2001 1:15:00 PM	6.8	NM	102.6	67.7	153.86	176	215	839	< 1	44700	NA	2610	NA	125	14.1	< 0.05	7	534	55.7	NA	24600	71200	75.1	1800
PNR-4	11/8/2001 3:00:00 PM	NM	NM	NM	94.44	201.99	122	149	1210	< 1	31800	NA	3210	NA	43	15.1	0.06	7.9	453	NA	237	20700	61400	49.2	1310
PNR-5	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.6	49.64	267	325	1170	< 1	38900	NA	3810	0.2	213	NA	< 0.05	7.4	396	NA	NA	22600	65200	85.1	1690
PNR-5	8/8/2001 11:00:00 AM	6.6	NM	96	40.8	105.44	319	390	1100	< 1	40700	NA	3850	NA	264	16.6	< 0.05	6.7	436	36.6	NA	23400	68600	79.5	1400
PNR-5	8/15/2001 11:00:00 AM	6.8	NM	NM	38.6	101.48	299	365	1210	< 1	41200	NA	4140	NA	271	17.9	< 0.05	6.9	460	40.6	NA	23900	68000	72.6	1520
PNR-5	11/7/2001 11:10:00 AM	5.8	NM	NM	43.33	109.99	335	409	1030	< 1	33700	NA	3540	NA	234	17.9	< 0.05	6.5	368	NA	36.7	21500	67200	52.7	1290
PNR-5	2/20/2002 10:02:00 AM	6.27	NM	92.2	41.7	107.06	449	548	1100	< 4	44500	NA	3770	NA	248	17.3	< 0.05	6.7	432	30	NA	23600	67700	61.3	1270
PNR-5	5/22/2002 10:40:00 AM	6.42	NM	93.6	41.1	105.98	335	409	975	< 4	43500	0.35	3310	NA	212	16.4	< 0.05	6.7	377	39	NA	21800	68800	68.4	1870
PNR-5	8/20/2002 5:10:00 PM	6.3	NM	93.3	39.2	102.56	323	394	1040	< 4	42600	0.33	3590	NA	241	15.9	< 0.05	6.6	297	36	37	23700	69700	71.9	1570
PNR-5	11/6/2002 11:10:00 AM	6.37	NM	102.1	40	104.00	325	397	1140	< 4	42800	0.33	3870	NA	250	16.3	< 0.05	6.7	446	29	46	22800	68100	61.3	1730
PNR-5	3/4/2003 4:30:00 PM	6.6	NM	103.2	35.1	95.18	320	391	1070	< 4	42100	0.3	3570	NA	218	16.1	< 0.05	6.6	413	34	52	22100	67800	50.5	1880
PNR-5	5/28/2003 12:35:00 PM	6.39	NM	97	41.6	106.88	329	401	1020	< 1	39600	0.36	3490	NA	228	15.6	< 0.05	6.5	473	32	41	23000	69300	95.2	1480
PNR-5	8/13/2003 2:59:00 PM	6.64	NM	89.3	40.6	105.08	328	400	1110	< 1	42000	0.36	3530	NA	256	17	< 0.05	6.7	450	36	40	23100	69700	90.2	1170
PNR-5	11/4/2003 3:30:00 PM	6.29	NM	NM	37.4	99.32	324	395	654	< 4	42200	0.36	2400	NA	186	16.7	< 0.05	6.6	359	27	27	19300	68400	48.9	1200
PNR-5	3/17/2004 10:15:00 AM	6.42	NM	102	40.3	104.54	327	399	1170	< 1	44300	0.32	3960	NA	256	16.7	< 0.05	6.8	507	38	35	25000	68500	94.8	1170
PNR-5	6/9/2004 9:40:00 AM	6.59	NM	94.8	39.1	102.38	311	379	1030	< 4	42900	0.35	3520	NA	228	16.4	< 0.05	6.6	400	36	35	22400	65800	97.1	1720
PNR-5	9/14/2004 4:20:00 PM	7.68	NM	100.3	38.1	100.58	330	403	1140	< 4	43400	0.34	3890	NA	253	17.8	< 0.05	6.8	446	39	44	24000	69700	98.1	1590
PNR-5	11/17/2004 1:50:00 PM	6.58	NM	107.5	35.8	96.44	300	366	1070	< 4	42800	0.34	3640	NA	233	15.5	< 0.05	6.6	445	30	43	24300	67600	94.9	1560
PNR-5	3/2/2005 12:15:00 PM	6.41	NM	97.2	38.1	100.58	326	398	1150	< 4	43700	0.37	3950	NA	259	17.3	< 0.05	6.7	501	39	34	27200	67200	96.7	1590
PNR-5	5/25/2005 6:20:00 PM	6.26	NM	100	36.2	97.16	278	339	1190	< 4	43100	0.43	4130	NA	279	16.2	< 0.05	6.6	446	34	31	26400	65400	95.6	1910
PNR-5	8/17/2005 11:00:00 AM	6.26	NM	99.7	48.4	119.12	315	385	1090	< 4	35400	0.35	3800	NA	261	16.8	< 0.05	6.8	464	31	42	23300	65300	94.8	1300
PNR-5	11/16/2005 1:00:00 PM	6.81	NM	104.8	34.2	93.56	273	334	1170	< 4	40900	0.32	4110	NA	286	14.9	< 0.05	6.7	420	32	33	25500	58700	95.8	1330
PNR-5	2/9/2006 3:20:00 PM	6.81	NM	98.9	20	68.00	317	387	1010	< 4	38500	0.34	3410	NA	217	15.4	< 0.05	6.8	430	35	35	23000	59400	91.6	1400
PNR-5	5/25/2006 10:30:00 AM	6.53	NM	85.52	35.47	95.85	321	392	990	< 4	37700	0.35	3380	NA	220	18	< 0.05	7.4	382	37	34	23000	49400	89	1270
PNR-5	8/23/2006 3:40:00 PM	6.31	NM	87.2	36.1	96.98	326	398	837	< 4	32900	0.4	2850	NA	185	14	< 0.05	6.6	310	41	37	19900	56400	87.6	1090
PNR-5	12/7/2006 1:25:00 PM	6.27	NM	84.7	33.8	92.84	380	464	796	< 4	32400	0.4	2740	NA	182	15.2	< 0.05	6.8	332	37	37	19800	53100	83.8	1040
PNR-5	3/14/2007 2:14:00 PM	6.51	NM	92.9	33.2	91.76	416	507	811	< 4	32800 D	0.38	2910	NA	215	13	< 0.05	6.8	329 D	537 D	NA	20000	50800	79.8	892 D
PNR-5	10/5/2007 11:40:00 AM	6.11	NM	73700	29.7	85.46	495	604	684	< 4	27900	0.4	2440	NA	177	13	< 0.05	6.8	278	37	34	17100	46400	73.1	913
PNR-6	5/31/2000 12:00:00 AM	9.2	NM	3.26	10.1	50.18	511	624	109	< 1	14	NA	587	0.09	77	NA	0.06	8	6	NA	NA	75	849	1.21	229

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
PNR- 6	8/7/2001 9:55:00 AM	6.7	NM	1.7	10.4	50.72	555	677	111	< 1	31	NA	724	NA	108	0.3	0.28	7.1	6	21.2	NA	124	1350	1.75	559
PNR- 6	8/15/2001 3:30:00 PM	7.6	NM	NM	9.2	48.56	534	652	126	< 1	30	NA	835	NA	126	0.2	0.25	7.3	7	23	NA	143	1280	1.71	530
PNR- 6	11/7/2001 8:55:00 AM	7.5	NM	0.8	7.78	46.00	534	651	109	< 1	30	NA	690	NA	101	0.2	0.31	7.3	6	NA	35.8	117	1210	1.62	437
PNR- 6	2/19/2002 1:30:00 PM	7.22	NM	2.06	10.3	50.54	481	587	151	< 4	49	NA	966	NA	143	0.3	0.49	7	7	40.6	NA	121	1740	2.25	869
PNR- 6	5/21/2002 12:15:00 PM	7.43	NM	2.4	11.7	53.06	513	626	142	< 4	35	0.48	837	NA	117	0.3	0.42	7.5	7	30.9	NA	123	1370	1.86	831
PNR- 6	8/19/2002 4:35:00 PM	7.1	NM	1.4	10.3	50.54	514	627	112	< 4	23	0.44	710	NA	104	0.5	0.3	7.4	5	22.5	43.5	91	1180	1.7	450
PNR- 6	11/5/2002 11:25:00 AM	7.27	NM	1.3	9.3	48.74	530	647	100	< 4	19	0.47	589	NA	82	0.4	0.19	7.5	6	21.2	27	97	1000	1.5	341
PNR- 6	3/4/2003 10:40:00 AM	6.79	NM	1.2	8.3	46.94	530	646	94	< 4	31	0.5	567	NA	81	0.3	0.12	7.6	6	21.9	30.3	120	897	1.33	276
PNR- 6	5/13/2003 11:30:00 AM	7.78	NM	0.8	11.5	52.70	545	665	94	< 4	16	0.58	573	NA	82	0.2	0.16	7.2	7	21.3	51.8	99	918	1.36	265
PNR- 6	8/13/2003 8:16:00 AM	7.99	NM	1.1	9.6	49.28	521	635	95	< 1	16	0.48	594	NA	86	0.3	0.26	7.4	6	22	42.8	95	955	1.44	323
PNR- 6	11/4/2003 1:30:00 PM	7.13	NM	1.1	8.3	46.94	535	652	100	< 4	26	0.53	643	NA	95	0.2	0.27	7.6	7	23.1	40.1	114	1140	1.53	460
PNR- 6	6/8/2004 10:20:00 AM	7.57	NM	NM	10.3	50.54	478	583	241	< 4	126	0.47	1990	NA	337	< 0.1	2.47	7.4	10	22.2	32.2	283	3740	3.84	2180
PNR- 6	9/14/2004 9:15:00 AM	7.55	NM	2.6	9.8	49.64	535	653	155	< 4	56	0.48	1230	NA	205	< 0.1	1.18	7.6	7	23.6	26.9	183	2240	2.65	1120
PNR- 6	11/16/2004 10:17:00	7.42	NM	2.3	9.6	49.28	526	642	123	< 4	34	0.5	901	NA	144	< 0.1	0.62	7.4	7	25.1	26.1	124	1370	1.92	605
PNR- 6	2/28/2005 5:30:00 PM	7.08	NM	1.9	9.5	49.10	541	660	136	< 4	31	0.48	865	NA	128	0.2	0.39	7.3	7	23.8	26.6	96	1340	1.77	541
PNR- 6	5/23/2005 6:00:00 PM	7.4	NM	1.4	9.9	49.82	454	553	140	< 4	28	0.49	852	NA	122	0.5	0.37	7.2	7	23.2	26.4	92	1320	1.73	501
PNR- 6	8/16/2005 9:35:00 AM	7.19	NM	1.59	10.1	50.18	535	653	139	< 4	27	0.49	856	NA	124	0.3	0.34	7.5	6	21.7	1.1	94	1270	1.73	482
PNR- 6	11/15/2005 10:00:00	7.19	NM	1.59	7.6	45.68	497	606	118	< 4	25	0.96	785	NA	112	0.2	0.21	7.5	8	23.8	33.3	95	1190	1.7	487
PNR- 6	2/7/2006 10:47:00 AM	7.23	NM	1.2	7.9	46.22	558	681	104	< 4	17	0.5	651	NA	95	0.3	0.11	7.1	7	40.3	215	97	993	1.5	332
PNR- 6	5/23/2006 10:30:00 AM	7.29	NM	1.381	12.8	55.04	520	635	108	< 4	20	0.52	655	NA	93	0.3	0.16	8	7	44.7	115	103	924	1.48	330
PNR- 6	8/22/2006 10:45:00 AM	7.28	NM	1.4	9.4	48.92	506	618	88	< 4	12	0.49	557	NA	82	0.3	0.09	7.2	7	22.9	27.4	93	820	1.3	214
PNR- 6	12/5/2006 1:40:00 PM	7.11	NM	1.4	8.6	47.84	509	621	91	< 4	16	0.5	594	NA	89	0.2	0.11	7.2	6	22.7	30.5	99	914	1.5	274
PNR- 6	3/14/2007 10:15:00 AM	6.96	1.54	1.207	9.39	48.90	503	613	97	< 4	14	0.5	596	NA	86	0.4	0.17	7.5	6	25.8	NA	93	919	1.44	262
PNR- 6	10/2/2007 6:55:00 PM	7.29	NM	2.66	10.9	51.62	481	587	130	< 4	37	0.5	933	NA	148	0.5	0.66	7.6	6	24.7	36.8	132	1520	2.19	701
PNR- 7	5/31/2000 12:00:00 AM	9.2	NM	3.26	10.1	50.18	343	418	2770	< 1	21700	NA	15700	2.6	2130	NA	4.11	7.2	55	NA	NA	6800	35300	48.2	1540
PNR- 7	8/7/2001 5:20:00 PM	6.9	NM	53.1	9.6	49.28	368	449	2480	< 1	23300	NA	13800	NA	1850	0.3	4.76	6.7	52	17	NA	6740	39300	49.4	1370
PNR- 7	8/15/2001 5:55:00 PM	7	NM	33.42	9.6	49.28	347	423	2600	< 1	23000	NA	15700	NA	2220	0.4	3.86	6.9	57	19.9	NA	7910	40600	44.9	1590
PNR- 7	11/7/2001 11:50:00 AM	6.6	NM	NM	8.89	48.00	351	428	2630	< 1	22100	NA	14600	NA	1960	0.4	4.06	6.6	52	NA	20.2	7060	40600	34.7	1440
PNR- 7	2/19/2002 5:05:00 PM	6.49	NM	50.4	9.4	48.92	351	429	2700	< 4	23700	NA	14800	NA	1960	0.3	4.19	6.7	57	17	NA	7550	36200	41	1390
PNR- 7	5/22/2002 1:10:00 PM	6.66	NM	57.7	9.5	49.10	356	435	2490	< 4	23500	0.25	13900	NA	1860	0.3	3.91	6.6	60	29	NA	7450	39800	45.1	1650
PNR- 7	8/20/2002 3:07:00 PM	6.6	NM	49.8	10.9	51.62	353	431	2510	< 4	23900	0.25	14400	NA	1990	0.4	3.58	6.7	47	17	26	8200	42100	45.9	1460
PNR- 7	11/5/2002 2:50:00 PM	6.72	NM	55	10.1	50.18	356	434	2660	< 4	24100	0.24	14500	NA	1900	0.4	3.87	6.8	57	14	19	7690	44500	37.4	1580
PNR- 7	3/4/2003 3:05:00 PM	6.57	NM	51.6	9.1	48.38	346	422	2600	< 4	22900	0.3	14200	NA	1880	0.4	3.85	6.6	72	17	17	8650	39800	29	1500
PNR- 7	8/12/2003 12:20:00 PM	6.35	NM	59.5	11.6	52.88	354	432	2730	< 1	24300	< 0.1	3050	NA	1950	0.3	3.23	6.5	69	20	18	8460	45100	58	964
PNR- 7	11/4/2003 2:30:00 PM	6.31	NM	49.7	8.1	46.58	359	438	2090	< 4	24900	< 0.73	11400	NA	1490	0.4	3.58	6.8	55	14	22	6880	40200	23.7	1110
PNR- 7	3/17/2004 5:10:00 PM	6.75	NM	48.5	12.7	54.86	367	447	2870	< 1	25300	0.23	15400	NA	2010	0.4	3.71	6.6	68	20	18	9040	41200	58.9	1100
PNR- 7	6/8/2004 6:40:00 PM	7.35	NM	5.2	10.5	50.90	367	448	2530	< 4	25800	0.28	13600	NA	1770	0.4	3.73	6.6	69	18	23	8850	46400	60	1570
PNR- 7	9/14/2004 6:00:00 PM	7.13	NM	57.2	10.2	50.36	382	466	2630	< 4	25000	0.25	14100	NA	1840	0.4	3.65	6.8	68	22	23	9390	46100	60.8	1350
PNR- 7	11/17/2004 1:40:00 PM	6.91	NM	66.2	10.2	50.36	365	446	2670	< 1	25500	0.26	14200	NA	1830	0.4	3.85	6.6	71	21	20	9700	43000	61.3	1580
PNR- 7	3/1/2005 5:30:00 PM	6.49	NM	53.8	9.6	49.28	370	452	2560	< 4	25400	0.27	13700	NA	1780	0.4	3.56	6.6	72	22	23	9940	42100	60.6	1450
PNR- 7	5/25/2005 1:47:00 PM	6.42	NM	63.5	10.2	50.36	345	421	2640	< 4	25300	0.3	14000	NA	1800	0.4	3.77	6.6	49	17	16	10600	44100	59.7	1700
PNR- 7	8/17/2005 10:52:00 AM	6.51	NM	62.7	10.6	51.08	399	487	2840	< 4	26100	0.24	15100	NA	1940	0.4	3.59	6.7	71	18	22	10500	45400	61.9	1590
PNR- 7	11/16/2005 2:00:00 PM	6.77	NM	66.7	8.4	47.12	350	427	2800	< 4	26800	0.25	14900	NA	1920	0.4	3.57	6.8	66	25	25	10700	43300	63	1480
PNR- 7	2/9/2006 2:15:00 PM	6.83	NM	60.2	8	46.40	395	482	2840	< 4	25100	0.22	14600	NA	1820	0.5	3.7	6.8	98	18	19	11000	41200	61.9	1450
PNR- 7	5/24/2006 4:10:00 PM	6.56	NM	50.2	10.2	50.36	384	468	2560	< 4	26200	0.24	13600	NA	1750	0.5	3.61	7.3	76	18	20	11500	42300	62.9	1470
PNR- 7	8/24/2006 10:24:00 AM	6.59	NM	52.4	9.2	48.56	369	442	2520	< 4	26800	0.2	13200	NA	1660	0.4	3.69	6.5	67	22	22	10800	44400	66.1	1450
PNR- 7	12/6/2006 10:15:00 AM	6.71	NM	64.1	8.6	47.48	369	450	2460	< 4	23800	0.2	12600	NA	1580	0.5	3.44	6.7	57	19	21	10400	43100	66.7	1410
PNR- 7	3/15/2007 12:15:00 PM	6.65	0.46	60.35	8.67	47.61	371	452	2670	< 4	27600 D	< 10 D	13900	NA	1750	0.5	3.39	6.5	105 D	194 D	NA	11700	45400	66.3	1350 D
PNR- 7	10/4/2007 7:00:00 PM	6.35	0.1	6547	8.89	48.00	372	453	2560	< 4	26500	0.2	13100	NA	1630	0.5	3.8	6.4	72	19	24	11000	45400	70.1	1510
PNR- 8	5/31/2000 12:00:00 AM	9.2	NM	3.26	10.1	50.18	464	566	272	< 1	380	NA	1500	25.2	200	NA	< 0.05	7.8	12	NA	NA	420	2350	4.08	738
PNR- 8	8/7/2001 1:50:00 PM	7.5	NM	4.3	9.9	49.82	459	560	266	< 1	764	NA	1470	NA	196	0.4	< 0.05	7.1	10	20.7	NA	406	3460	4.35	1210
PNR- 8	8/16/2001 6:10:00 PM	7.5	NM	4.6	10	50.00	< 1	< 1	254	< 1	847	NA	1420	NA	191	0.3	< 0.05	2.3	8	26.1	NA	406	4460	12.6	2990
PNR- 8	11/6/2001 4:30:00 PM	7.1	NM	NM	7.78	46.00	457	557	327	< 1	1020	NA	1820	NA	243	0.4	0.18	7.2	14	NA	31.3	480	3940	5.04	1150
PNR- 8	2/22/2002 4:00:00 PM	7.58	NM	5.93	11.5	52.70	489	596	307	< 4	888	NA	1680	NA	222	0.3	< 0.05	7.2	15	462	NA	481	3640	4.86	1180
PNR- 8	5/21/2002 5:45:00 PM	7.34	NM	5.81	9	48.20	424	517	290	< 4	1310	0.38	1610	NA	215	0.3	0.08	7.4	12	159	NA	463	4020	5.57	1190
PNR- 8	8/21/2002 10:10:00 AM	7.3	NM	4.2	10.3	50.54	404	492	320	< 4	1180	0.35	1810	NA	246	0.5	0.08	7.3	11	20	140	435	4240	5.77	1290
PNR- 8	11/5/2002 3:25:00 PM	7.15	NM	5.4	10.3	50.54	445	543	340	< 4	1140	0.3	1850	NA	242	0.4	< 0.05	7.2	12	21	294	485	3880	5.61	1260
PNR- 8	3/4/2003 12:10:00 PM	7.58	NM	5	9.9	49.82	433	529	336	< 4	1170	0.3	1860	NA	247	0.3	< 0.05	7.1	13	22	95	528	3960	5.46	1280
PNR- 8	5/13/2003 5:00:00 PM	7.48	NM	5	11	51.80	445	543	350	< 4	1090	0.33	1920	NA	254	0.4	0.14	7.2	13	21	181	552	3910	5.24	1150
PNR- 8	8/12/2003 9:46:00 AM	7.18	NM	4.2	10.6	51.08	445	543	367	< 1	1170	0.31	2020	NA	268	0.3	< 0.05	7.1	12	23	80	584	4640	5.68	1090
PNR- 8	11/4/2003 12:00:00 PM	5.62	NM	3.9	8	46.40	462	564	321	< 4	1060	0.33	1770	NA	234	0.4	< 0.05	7.4	12	23.5	31.8	452	3700	4.7	1190
PNR- 8	3/18/2004 11:30:00 AM	7.25	NM	7.8	9.9	49.82	465	567	348	< 1	1120	0.34	1930	NA	258	0.3	0.06	7.2	12	25.7	64.3	491	3890	5.03	1060
PNR- 8	6/8/2004 6:40:00 PM	7.35	NM	5.2	10.5	50.90	469	572	352	< 4	1240	0.37	1940	NA	256	0.5	0.06	7.3	13	18.8	25.8	530	4250	5.74	1240
PNR- 8	9/14/2004 5:05:00 PM	7.7	NM	4.5	12.1	53.78	440	537	360	< 4	1070	0.34	1960	NA	256	0.5	0.06	7.3	13	23.7	38.1	514	4120	5.67	1080
PNR- 8	11/16/2004 4:15:00 PM	7.15	NM	6.3	12.6	54.68	448	547	375	< 4	1230	0.34	2020	NA	264	0.4	0.08	7.2	14	25.2	48.8	527	4130	5.85	1180
PNR- 8	3/2/2005 3:30:00 PM	7.27	NM	5.62	9.2	48.56	474	579	383	< 4	1400	0.36	2150	NA	290	0.5	< 0.05	7.3	17	25.5	35.1	650	4390	6.2	1210
PNR- 8	5/26/2005 10:46:00 AM	7.19	NM	5.9	10.5	50.90	391	477	433	< 4	1540	0.39	2390	NA	319	0.5	< 0.05	7.2	11	25.7	67.5	661	4820	6.51	1150
PNR- 8	8/18/2005 11:50:00 AM	7.45	NM	6.3	12.4	54.32	287	350	400	< 4	1420	0.35	2230	NA	299	0.4	< 0.05	7.3	12	20.1	47.8	594	4600	6.44	1170
PNR- 8	11/17/2005 9:45:00 AM	6.96	NM	7.3	9.5	49.10	412	503	449	< 4	1610	0.3	2510	NA	337	0.4	< 0.05	7.2	12	24.2	70.1	703	4530	6.8	1180
PNR- 8	2/9/2006 9:45:00 AM	7.66	NM	6.8	9.9	49.82	465	568	417	< 4	1590	0.29	2310	NA	309	0.5	< 0.05	7.3	16	24.7	63.3	707	4780	7	1180
PNR- 8	5/24/2006 5:50:00 PM	7.11	NM	5.3	9.8	49.64	451	551	424	< 4	1630	0.32	2340	NA	312	0.5	< 0.05	7.9	16	23.4	40.8	664	4230	6.91	1200
PNR- 8	8/24/2006 12:30:00 PM	7.22	NM	7.8	10.1	50.18	422	515	434	< 4	1620	0.3	2410	NA	322	0.5	0.14	7	16	21.8	61.7	724	4960	7.25	1170

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																	
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
PNR- 8	12/7/2006 11:30:00 AM	7.31	NM	7	8.5	47.30	419	512	435	< 4	1810	0.3	2450	NA	331	0.4	< 0.05	7.2	15	23.6	89	763	5130	7.9	1170
PNR- 8	3/14/2007 1:25:00 PM	7.23	4.79	7.772	9.37	48.87	427	520	495	< 4	2210 D	0.31	2760	NA	369	0.5	0.2	7.1	19	36.3	NA	899	5430	8.34	1070 D
PNR- 8	10/4/2007 2:35:00 PM	6.98	NM	9000	10.7	51.26	423	517	461	< 4	1970	0.3	2570	NA	345	0.5	0.36	7.1	15	23	40.6	810	5370	8.45	1200
PNR- 9	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	263	321	583	< 1	3060	NA	2920	35.4	355	NA	< 0.05	7.3	16	NA	NA	887	5700	9.31	609
PNR- 9	8/9/2001 9:35:00 AM	7.4	NM	10.11	10.5	50.90	305	372	637	< 1	3360	NA	3150	NA	378	1.6	< 0.05	7.1	18	17.3	NA	985	7940	9.56	760
PNR- 9	8/16/2001 1:45:00 PM	7.6	NM	NM	10.9	51.62	274	334	663	< 1	3620	NA	3350	NA	412	1.2	< 0.05	7.2	17	15.8	NA	1050	8020	9.9	639
PNR- 9	11/7/2001 2:30:00 PM	7.7	NM	4.5	9.44	48.99	263	321	691	< 1	3640	NA	3450	NA	420	1.7	< 0.05	7	20	NA	29.2	1060	7630	10.3	740
PNR- 9	2/20/2002 2:50:00 PM	7.24	NM	10.2	10.7	51.26	281	343	689	< 4	3700	NA	3420	NA	413	1.8	< 0.05	6.8	30	32	NA	1110	7300	11.7	629
PNR- 9	5/22/2002 10:15:00 AM	7.32	NM	11.9	12.6	54.68	274	334	607	< 4	4330	0.17	3060	NA	375	1.8	< 0.05	7	18	25	NA	1030	8580	11.3	510
PNR- 9	8/20/2002 4:20:00 PM	7.2	NM	11.1	12.7	54.86	251	306	670	< 4	4060	0.18	3460	NA	434	1.8	< 0.05	7	16	15	24	1000	9120	11.9	690
PNR- 9	11/5/2002 2:05:00 PM	7.5	NM	11.47	10.9	51.62	270	330	704	< 4	4000	0.19	3470	NA	417	1.9	< 0.05	7.1	18	14	25	1030	8340	12.1	757
PNR- 9	3/4/2003 4:00:00 PM	7.37	NM	11.16	9.3	48.74	252	308	756	< 4	3920	0.2	3620	NA	421	1.9	< 0.05	6.8	20	16	36	1110	7880	12.8	720
PNR- 9	5/27/2003 6:15:00 PM	7.16	NM	10.5	12.7	54.86	271	330	735	< 1	3790	0.22	3620	NA	434	1.8	< 0.05	6.9	19	16	54	1070	8530	13	711
PNR- 9	8/13/2003 10:35:00 AM	7.82	NM	11.74	14.9	58.82	257	314	718	< 1	4580	0.17	3530	NA	421	1.9	< 0.05	6.8	19	16	22	1110	8850	10.9	571
PNR- 9	11/4/2003 2:35:00 PM	6.93	NM	10.06	10	50.00	262	319	696	< 4	4700	0.22	3720	NA	460	1.9	< 0.05	7	21	15	22	1210	8260	11.6	663
PNR- 9	6/8/2004 1:35:00 PM	7.56	NM	NM	11.5	52.70	1030	1260	783	< 4	4340	0.21	3880	NA	467	2.1	< 0.05	7.1	20	16.3	19.1	1350	8660	12.2	842
PNR- 9	9/14/2004 11:00:00 AM	7.67	NM	12	11.3	52.34	276	337	835	< 4	4210	0.26	4070	NA	483	2.3	< 0.05	7	20	17.5	21.4	1220	10600	13.3	752
PNR- 9	11/16/2004 4:12:00 PM	7.36	NM	17.3	10	50.00	254	310	848	< 4	4480	0.28	4110	NA	485	2.1	< 0.05	6.9	23	18.8	19.9	1270	9140	13.6	769
PNR- 9	3/1/2005 12:10:00 PM	7.33	NM	13	9.3	48.74	280	341	827	< 4	4450	0.22	4080	NA	490	2.1	< 0.05	7.1	24	19	19	1430	9590	13.4	767
PNR- 9	5/24/2005 5:25:00 PM	7.23	NM	13.81	10.2	50.36	237	289	886	< 4	4580	0.32	4390	NA	528	2.2	< 0.05	7	19	21.6	21.7	1490	10200	13.6	908
PNR- 9	8/16/2005 12:00:00 PM	7.27	NM	13.55	9.9	49.82	274	334	852	< 4	4540	0.26	4190	NA	502	2.1	< 0.05	7.1	16	17.4	17.4	1300	10300	13.9	779
PNR- 9	11/15/2005 3:55:00 PM	7.28	NM	14.5	10.1	50.18	250	305	930	< 4	4600	0.12	4620	NA	557	2.1	< 0.05	7.2	20	18.1	21.2	1550	9990	14.2	766
PNR- 9	2/8/2006 12:00:00 PM	7.54	NM	14.2	8.2	46.76	263	320	925	< 4	4490	0.24	4540	NA	542	2.2	< 0.05	7.1	25	19.5	20.7	1550	8850	14.2	761
PNR- 9	5/23/2006 1:15:00 PM	7.32	NM	12	10	50.00	252	307	863	< 4	4990	0.17	4260	NA	511	2.3	< 0.05	7.4	24	18	22	1520	9800	14.5	831
PNR- 9	8/23/2006 9:40:00 AM	7.29	NM	16.1	10.2	50.36	246	300	904	< 4	4760	0.15	4480	NA	539	2.2	< 0.05	6.8	22	19	20.4	1550	10800	15.1	823
PNR- 9	12/6/2006 3:00:00 PM	7.47	NM	14.08	9.12	48.42	253	308	895	< 4	4620	0.2	4420	NA	530	2.5	< 0.05	7	23	17.3	23.2	1600	10000	15.2	855
PNR- 9	3/13/2007 4:35:00 PM	7.24	0.26	14.45	9.53	49.15	247	302	890	< 4	4570 D	0.17	4360	NA	520	2.5	< 0.05	6.9	29	80 D	NA	1590 D	10700	15.3	699 D
PNR- 9	10/4/2007 10:40:00 AM	7.2	NM	18150	10.7	51.26	248	303	919	< 4	5200	0.2	4510	NA	539	3	< 0.05	6.8	21	17	51	1670	11300	16.2	889
PNR-10	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	528	645	208	< 1	147	NA	978	12.1	111	NA	< 0.05	7.6	8	NA	NA	435	2480	3.12	1210
PNR-10	8/8/2001 6:50:00 PM	7.4	NM	3.7	11.4	52.52	571	697	230	< 1	245	NA	1090	NA	127	1.2	< 0.05	7.2	8	24.3	NA	449	2890	3.49	1260
PNR-10	8/16/2001 1:15:00 PM	7.7	NM	NM	11.3	52.34	550	672	229	< 1	263	NA	1100	NA	128	1.2	< 0.05	7.2	8	28.3	NA	482	2900	3.45	1320
PNR-10	11/7/2001 12:30:00 PM	NM	NM	NM	9.44	48.99	528	644	217	< 1	196	NA	1040	NA	121	1.2	0.08	7.4	10	NA	38.9	443	2690	3.19	1220
PNR-10	2/20/2002 1:38:00 PM	7.27	NM	2.4	10.3	50.54	578	705	230	< 4	304	NA	1110	NA	131	1.2	< 0.05	7	8	30.1	NA	448	2920	3.85	1340
PNR-10	5/21/2002 1:35:00 PM	7.31	NM	3.82	11.6	52.88	535	653	214	< 4	415	0.22	1040	NA	124	1.3	< 0.05	7.2	8	30.6	NA	430	2810	3.79	1680
PNR-10	8/20/2002 12:20:00 PM	7.2	NM	3.4	13.1	55.58	512	624	230	< 4	351	0.25	1150	NA	139	1.3	0.07	7.2	7	23.4	31.2	407	3090	4.02	1350
PNR-10	11/5/2002 1:30:00 PM	7.47	NM	3.9	11	51.80	524	639	263	< 4	384	0.25	1250	NA	145	1.4	< 0.05	7.2	11	24	30.7	581	3130	4.11	1380
PNR-10	3/4/2003 4:50:00 PM	7.34	NM	3.84	9.2	48.56	540	658	268	< 4	426	0.3	1270	NA	150	1.3	< 0.05	7	9	23.8	51.9	470	3180	4.33	1340
PNR-10	5/27/2003 5:45:00 PM	7.3	NM	3.6	12.4	54.32	516	630	268	< 1	434	0.28	1310	NA	155	1.2	< 0.05	7.1	9	24.8	29.2	476	3230	4.39	1350
PNR-10	8/13/2003 10:00:00 AM	7.97	NM	3.91	13.3	55.94	512	624	263	< 1	457	0.25	1270	NA	149	1.2	< 0.05	6.9	9	24.1	45	444	3270	4.16	1340
PNR-10	11/4/2003 1:45:00 PM	7.87	NM	3.6	10.2	50.36	512	624	240	< 4	512	0.28	1270	NA	162	1.4	< 0.05	7.2	9	24.5	28.3	468	3310	3.85	1420
PNR-10	6/8/2004 2:10:00 PM	7.51	NM	NM	11.5	52.70	493	602	284	< 4	561	0.27	1410	NA	170	1.4	< 0.05	7.2	9	23.9	56	524	3390	4.18	1410
PNR-10	9/14/2004 11:40:00 AM	7.51	NM	4	11.5	52.70	519	633	300	< 4	607	0.27	1490	NA	180	1.8	< 0.05	7.2	10	25.6	31	508	3510	4.62	1350
PNR-10	11/16/2004 11:25:00	7.3	NM	5.7	10.6	51.08	504	615	316	< 4	602	0.28	1540	NA	181	1.5	< 0.05	7.2	10	26.2	29.1	502	3430	4.63	1360
PNR-10	3/1/2005 11:06:00 AM	7.28	NM	4.48	9.6	49.28	524	640	315	< 4	653	0.27	1570	NA	191	1.4	< 0.05	7.1	12	26.7	28.3	571	3560	4.67	1370
PNR-10	5/24/2005 3:50:00 PM	7.16	NM	4.76	10.8	51.44	442	540	300	< 4	645	0.31	1500	NA	181	1.6	< 0.05	7.2	11	25.4	25.3	558	3610	4.75	1260
PNR-10	8/16/2005 10:48:00 AM	7.17	NM	4.63	9.9	49.82	522	637	327	< 4	688	0.26	1630	NA	197	1.4	< 0.05	7.2	7	25.2	26.4	495	3860	4.87	1360
PNR-10	11/15/2005 11:45:00	6.35	NM	4.89	8.9	48.02	460	561	356	< 4	758	0.24	1800	NA	220	1.4	< 0.05	7.2	8	25.9	28	585	3730	5.1	1400
PNR-10	2/7/2006 2:00:00 PM	7.22	NM	4.6	10.2	50.36	498	607	355	< 4	708	0.25	1740	NA	208	1.5	< 0.05	7.1	11	27.9	29.4	582	3730	5.1	1300
PNR-10	5/23/2006 12:15:00 PM	7.23	NM	4.2	10	50.00	480	585	352	< 4	834	0.24	1740	NA	209	1.7	< 0.05	7.8	11	26.7	32.2	597	3790	5.14	1430
PNR-10	8/23/2006 10:35:00 AM	7.2	NM	5.62	10.1	50.18	452	551	354	< 4	811	0.2	1740	NA	208	1.5	< 0.05	7	11	26.8	29.6	598	3820	5.46	1370
PNR-10	12/6/2006 2:30:00 PM	7.4	NM	5.25	9.2	48.56	458	559	366	< 4	790	0.2	1770	NA	208	1.8	< 0.05	7	12	27.2	29.6	633	3890	14.9	1340
PNR-10	3/13/2007 3:20:00 PM	7.26	0.33	5.347	9.82	49.68	450	550	376	< 4	922	0.23	1870	NA	225	1.9	< 0.05	7.1	11	40.9	NA	620	4050	5.63	1390
PNR-10	10/3/2007 4:30:00 PM	7.08	0.12	5751	10.14	50.25	442	540	368	< 4	984	0.2	1840	NA	225	1.7	< 0.05	7	10	26.1	32.2	612	4130	6.08	1400
PNR-12	5/31/2000 12:00:00 AM	9.2	NM	3.28	10.1	50.18	699	853	425	< 1	78	NA	2410	39.3	328	NA	95.7	7.6	17	NA	NA	362	1020	4.58	2030
PNR-12	8/8/2001 3:00:00 PM	7.3	NM	4.9	12.8	55.04	537	655	421	< 1	74	NA	2390	NA	325	0.3	139	7.3	15	19.1	NA	397	4720	4.76	2130
PNR-12	8/15/2001 4:00:00 PM	7.4	NM	NM	13.4	56.12	738	900	444	< 1	72	NA	2570	NA	356	0.3	138	7.3	16	21.1	NA	381	4610	4.6	2050
PNR-12	11/6/2001 4:20:00 PM	7.7	NM	4.1	10	50.00	739	901	425	< 1	72	NA	2430	NA	333	0.4	105	7.2	15	NA	64.5	336	4590	4.65	2040
PNR-12	2/20/2002 11:55:00 AM	7.14	NM	4.6	10.8	51.44	735	897	375	< 4	67	NA	2370	NA	349	0.2	145	7.2	14	36	NA	373	4700	5.11	2170
PNR-12	5/21/2002 11:00:00 AM	7.22	NM	4.9	14	57.20	666	812	409	< 4	56	0.23	2360	NA	324	< 0.1	142	7.3	12	22	NA	342	4630	5.12	2250
PNR-12	8/19/2002 4:05:00 PM	8.8	NM	4.6	12.3	54.14	744	908	328	< 4	68	0.3	2070	NA	304	1.1	82.9	7.4	11	20.5	88.4	296	3990	4.54	1830
PNR-12	11/5/2002 11:15:00 AM	7.31	NM	4.84	11	51.80	700	854	442	< 4	76	0.21	2470	NA	331	< 0.1	130	7.2	12	19	69	328	4660	5.11	2200
PNR-12	3/4/2003 1:10:00 PM	7.53	NM	4.6	9.6	49.28	684	834	407	< 4	148	0.2	2420	NA	340	< 0.1	128	7.2	15	19	139	361	4590	4.81	2200
PNR-12	5/27/2003 5:00:00 PM	7.46	NM	4.3	13.5	56.30	656	801	393	< 1	80	0.28	2280	NA	316	< 0.1	112	7.2	13	17	181	323	4540	5.25	2200
PNR-12	8/13/2003 8:05:00 AM	8.21	NM	4	15.6	60.08	685	835	415	< 1	58	0.22	2440	NA	341	< 0.1	133	7.1	11	19.9	33.1	314	4600	4.85	2180
PNR-12	11/4/2003 12:35:00 PM	5.38	NM	3.3	10.2	50.36	681	831	370	< 4	64	0.22	2360	NA	354	< 0.1	135	7.2	12	20.6	46.8	331	4590	4.37	2240
PNR-12	6/8/2004 9:15:00 AM	7.6	NM	2.3	9.7	49.46	691	843	402	< 4	72	0.27	2410	NA	342	< 0.1	337	7.2	11	19.4	33.8	389	4540	4.59	2120
PNR-12	9/14/2004 10:00:00 AM	7.67	NM	3.6	11.1	51.98	695	847	424	< 4	75	0.24	2540	NA	359	< 0.1	104	7.1	12	21	17.1	345	4580	4.9	2080
PNR-12	11/16/2004 9:35:00 AM	7.12	NM	6.1	10.2	50.36	649	792	453	< 4	70	0.25	2640	NA	366	< 0.1	135	7.4	12	21.6	33.8	340	4550	4.97	2100
PNR-12	2/26/2005 5:10:00 PM	7.09	NM	4.48	9.5	49.10	697	850	416	< 4	66	0.25	2530	NA	363	< 0.1	126	7.1	12	21.8	25.4	361	4620	4.85	2100
PNR-12	5/23/2005 6:50:00 PM	6.94	NM	4.77	10.3	50.54	586	716	404	< 4	65	0.27	2420	NA	342	< 0.1	130	6.9	11	20.4	24.1	354	4540	4.8	1980
PNR-12	8/15/2005 6:00:00 AM	6.95	NM	4.71	10.3	50.54	667	838	440	< 4	63	0.23	2630	NA	372	< 0.1	163	7.2	9	21.7	20.9	335	4600	4.93	2060

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																	
Well Name	Date and Time	pH S.U.	Dissolved Oxygen mg/L	Specific Conductance mS	Temperature °C	Temperature °F	Alkalinity as $CaCO_3$ mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Fluoride mg/L	Hardness, Total as $CaCO_3$ mg/L	Iron mg/L	Magnesium mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids @ 180° C mg/L	Specific Conductance @ 25° C mS	Sulfate mg/L
PNR-12	11/15/2005 9:45:00 AM	7.08	NM	4.8	9.7	49.46	617	752	444	< 4	71	0.21	2690	NA	384	< 0.1	155	7.1	9	20.3	38.5	376	4520	5	2170
PNR-12	2/7/2006 1:00:00 PM	6.97	NM	4.7	10.3	50.54	689	816	455	< 4	66	0.2	2670	NA	385	< 0.1	204	7	11	22.8	27.6	374	4550	5	2100
PNR-12	5/23/2006 10:50:00 AM	7	NM	4.3	10.4	50.72	645	787	445	< 4	72	0.21	2710	NA	388	< 0.1	197	7.9	11	21.9	26.1	376	4400	5.02	2200
PNR-12	12/5/2006 3:45:00 PM	6.92	NM	5	9.5	49.10	615	750	450	< 4	69	0.2	2650	NA	370	< 0.1	187	7	11	22.1	30.1	361	4700	5.3	2120
PNR-12	3/14/2007 12:15:00 PM	6.74	1.97	4.643	9.86	49.75	615	751	451	< 4	71	0.2	2690	NA	380	< 0.1	202 D	7.2	13	37.4	NA	367	4710	5.23	1970
PNR-12	10/3/2007 1:00:00 PM	7.15	NM	5910	11.3	52.34	587	716	409	< 4	63	0.2	2480	NA	349	< 0.1	144	7.3	8	22	45.3	321	4450	5.21	2060
PNR-13	8/15/2001 6:15:00 PM	7.5	NM	21.25	14.5	58.10	372	453	1050	< 1	12300	NA	4870	NA	546	6	1.12	7.3	31	18.9	NA	6050	22200	27.3	982
PNR-13	8/15/2001 7:00:00 PM	7.5	NM	21.25	14.5	58.10	375	457	984	< 1	11500	NA	4480	NA	492	5.1	1.46	7.2	42	20.1	NA	5710	21200	25.6	841
PNR-13	11/7/2001 1:35:00 PM	7.4	NM	NM	9.44	48.99	424	517	529	< 1	3420	NA	2540	NA	296	2.1	0.37	7.1	26	NA	26.4	1610	7780	10.9	1360
PNR-13	2/19/2002 4:30:00 PM	7.09	NM	7.7	9.5	49.10	559	682	474	< 4	2220	NA	2310	NA	273	1.2	< 0.05	7	17	32	NA	1250	6720	9.42	1810
PNR-13	5/22/2002 2:00:00 PM	7.2	NM	6.82	11	51.80	508	619	418	< 4	1040	0.32	2070	NA	249	1.2	< 0.05	7.4	14	29	NA	680	5120	6.25	2270
PNR-13	8/20/2002 3:45:00 PM	6.9	NM	4.4	13.3	55.94	444	541	408	< 4	679	0.36	2080	NA	257	1.4	< 0.05	7.2	12	24	30	588	4530	5.57	2000
PNR-13	11/5/2002 3:30:00 PM	7.09	NM	4.9	9.9	49.82	511	623	386	< 4	769	0.37	1900	NA	227	1.3	< 0.05	7.2	14	22	30	493	4110	5.27	1730
PNR-13	3/4/2003 11:15:00 AM	7.48	NM	4.4	9.3	48.74	485	592	384	< 4	592	0.4	1880	NA	224	1.2	< 0.05	7.1	11	22.9	37	437	3950	4.74	1810
PNR-13	5/28/2003 10:05:00 AM	7.1	NM	4.64	12.2	53.96	501	612	386	< 1	517	0.49	1910	NA	230	1.1	< 0.05	7.2	14	24	28	471	3940	5.13	1770
PNR-13	8/13/2003 10:20:00 AM	7.37	NM	3.4	11.1	51.98	518	632	305	< 1	690	0.33	1550	NA	193	1.1	< 0.05	7.1	11	23.3	29.3	374	3570	4.29	1180
PNR-13	11/4/2003 2:15:00 PM	7.27	NM	6.8	10.1	50.18	541	661	322	< 4	1200	0.35	1720	NA	223	1.5	< 0.05	7.2	14	23.7	26	772	4630	5.61	1600
PNR-13	6/8/2004 3:30:00 PM	7.37	NM	3.67	11	51.80	560	683	316	< 4	860	0.37	1620	NA	201	1.6	< 0.05	7.1	11	23.1	27.4	667	4190	5.64	1580
PNR-13	9/14/2004 10:00:00 AM	7.67	NM	3.6	11.1	51.98	542	662	307	< 4	565	0.36	1550	NA	190	1.4	0.05	7.2	11	25.8	25.9	350	3150	4.13	1180
PNR-13	11/16/2004 3:30:00 PM	7.13	NM	4.9	12.9	55.22	532	649	326	< 4	624	0.35	1650	NA	202	1.3	< 0.05	7.2	13	25.2	30.8	520	3480	4.65	1360
PNR-13	3/1/2005 1:25:00 PM	7.16	NM	3.8	10	50.00	537	655	308	< 4	447	0.37	1570	NA	196	1.1	< 0.05	7.1	12	27	28.1	370	3110	3.92	1270
PNR-13	5/24/2005 12:00:00 PM	7.08	NM	4.6	11.4	52.52	476	581	292	< 4	470	0.39	1510	NA	189	1.3	< 0.05	7.1	12	24	29.7	488	3610	4.47	1410
PNR-13	8/17/2005 9:40:00 AM	7.01	NM	4.1	14.4	57.92	489	597	303	< 4	541	0.36	1550	NA	193	1.2	0.39	7.3	9	25.5	62.6	383	3440	4.49	1330
PNR-13	11/16/2005 10:50:00	6.68	NM	4.8	9.7	49.46	507	618	337	< 4	500	0.34	1780	NA	227	1.2	< 0.05	7.3	10	26.8	55.3	565	3840	4.7	1690
PNR-13	2/8/2006 10:40:00 AM	7.32	NM	5	9.3	48.74	539	657	321	< 4	410	0.33	1690	NA	216	1.3	< 0.05	7.3	11	27.9	29	535	3750	4.6	1620
PNR-13	5/24/2006 1:15:00 PM	7.08	NM	3.1	16.5	61.70	510	623	318	< 4	385	0.34	1680	NA	215	1.2	< 0.05	7.9	11	27.7	31.1	480	3240	4.33	1630
PNR-13	8/22/2006 2:25:00 PM	7.15	NM	4.3	11.8	53.24	502	612	325	< 4	437	0.33	1760	NA	231	1.3	< 0.05	7	11	24.9	29.1	620	3880	5.1	1770
PNR-13	12/6/2006 11:30:00 AM	7.4	NM	5	7	44.60	508	619	334	< 4	769	0.3	1800	NA	235	1.4	< 0.05	7.3	11	23.8	29.6	723	4430	6.1	1780
PNR-13	3/14/2007 4:20:00 PM	7.37	NM	3.8	9.4	48.92	504	615	318	< 4	407	0.32	1700	NA	220	1.5	< 0.05	7.2	10	37.8	NA	546	3790	4.82	1670
PNR-13	10/4/2007 5:30:00 PM	7.02	0.48	4076	10.15	50.27	499	608	308	< 4	347	0.3	1630	NA	210	1.2	< 0.05	7.2	9	25.6	36.5	495	3750	4.81	1740
PNR-14	8/9/2001 4:00:00 PM	6.4	NM	96.6	42.6	108.68	321	391	1390	< 1	44200	NA	5110	NA	397	23.8	< 0.05	6.5	327	30.7	NA	23100	70000	80.5	1460
PNR-14	8/14/2001 9:45:00 AM	6.6	NM	96.9	39.7	103.46	294	358	1430	< 1	44300	NA	5190	NA	394	24	< 0.05	6.6	310	30.8	NA	23200	69700	74.3	1330
PNR-14	11/7/2001 2:35:00 PM	6.4	NM	NM	45.56	114.01	340	415	1690	< 1	40900	NA	6370	NA	519	28.1	< 0.05	6.3	170	NA	37.3	22200	67400	51.1	1490
PNR-14	2/21/2002 11:30:00 AM	6.09	NM	91.4	41.2	106.16	372	454	1570	< 4	43100	NA	5910	NA	483	29.8	< 0.05	6.6	249	25	NA	22700	64200	60.4	1300
PNR-14	5/22/2002 12:05:00 PM	6.28	NM	90.2	42.5	108.50	338	412	1260	< 4	39700	0.35	4630	NA	358	22.2	< 0.05	6.4	282	42	NA	22000	67200	66.7	1730
PNR-14	8/20/2002 5:45:00 PM	8.1	NM	14.9	12.8	55.04	325	397	1250	< 4	39900	0.32	4800	NA	407	18.5	< 0.05	6.5	133	30	29	21200	66300	68.5	1510
PNR-14	11/6/2002 11:26:00 AM	6.3	NM	105.5	40.9	105.62	295	360	1410	< 4	35300	0.3	5210	NA	412	18.4	< 0.05	6.6	368	22	33	21500	65400	57.5	1590
PNR-14	3/4/2003 5:15:00 PM	6.42	NM	91.8	35.7	96.26	281	343	1390	< 4	40200	0.3	5050	NA	384	17.5	< 0.05	6.4	355	29	42	20800	65200	47.4	1650
PNR-14	5/28/2003 11:45:00 AM	6.44	NM	84.7	40.2	104.36	314	383	1280	< 1	33300	0.34	4940	NA	426	15.1	< 0.05	6.5	343	29	30	19300	60600	64.1	1460
PNR-14	8/13/2003 3:43:00 PM	6.36	NM	78.2	39.7	103.46	306	373	1300	< 1	37400	0.3	4860	NA	394	17	< 0.05	6.4	370	30	31	20700	62800	82.2	1030
PNR-14	11/5/2003 11:45:00 AM	7.43	NM	41.7	9.1	48.38	331	404	1170	< 4	26400	0.38	5370	NA	596	6.3	< 0.05	6.5	214	39	46	12400	43300	31	1210
PNR-14	3/17/2004 10:45:00 AM	6.05	NM	96.8	38.6	101.84	377	460	1110	< 1	30300	0.36	4400	NA	397	12.7	< 0.05	6.7	314	35	32	16800	49300	70.4	1080
PNR-14	6/9/2004 10:40:00 AM	6.62	NM	66.4	38.2	100.76	384	469	827	< 4	28100	0.41	3230	NA	283	11.8	< 0.05	6.6	241	27	30	14500	45500	68.5	1400
PNR-14	9/14/2004 3:35:00 PM	7.8	NM	62.5	36.4	97.52	412	503	748	< 4	25000	0.4	3000	NA	275	11.1	< 0.05	6.8	263	34	34	13800	39800	60	1300
PNR-14	11/17/2004 3:30:00 PM	6.85	NM	65.5	36	96.80	405	495	741	< 4	19300	0.43	2970	NA	271	9.1	< 0.05	6.7	242	30	32	11700	36200	55.6	1140
PNR-14	3/2/2005 10:50:00 AM	6.59	NM	42.5	40.7	105.26	472	576	617	< 4	16500	0.45	2600	NA	257	7.7	< 0.05	6.8	175	31	30	10400	29700	45.5	1480
PNR-14	5/25/2005 9:46:00 AM	6.9	NM	5.2	9.8	49.64	453	553	568	< 4	13600	0.53	2440	NA	248	6.8	< 0.05	6.9	178	30	67	6840	25200	38.1	2110
PNR-14	8/17/2005 3:18:00 PM	6.72	NM	34.9	33.5	92.30	591	721	528	< 4	11100	0.5	2390	NA	260	6.2	< 0.05	7	125	30	28	6900	21400	33	2270
PNR-14	11/16/2005 11:05:00	6.66	NM	43.1	31.9	89.42	541	660	663	< 4	10800	0.36	3170	NA	368	5.6	< 0.05	7.1	173	37	37	6850	20100	31.7	2040
PNR-14	2/9/2006 2:35:00 PM	6.73	NM	31.6	30.8	87.44	624	761	566	< 4	9060	0.34	2730	NA	321	5.4	< 0.05	7	145	34	32	5650	18700	28.6	2140
PNR-14	5/24/2006 5:00:00 PM	6.49	NM	25.74	32.01	89.62	615	751	570	< 4	9220	0.42	2790	NA	331	6.1	< 0.05	7.6	121	34	35	5530	17600	27.4	2060
PNR-14	8/23/2006 4:20:00 PM	6.44	NM	26.07	32.03	89.65	605	738	525	< 4	8220	0.4	2640	NA	322	4.3	< 0.05	6.9	105	34	35	4930	16700	28.9	2060
PNR-14	12/7/2006 3:30:00 PM	7.08	NM	19.2	27.9	82.22	633	772	523	< 4	7230	0.4	2640	NA	324	4.4	< 0.05	6.9	91	32	32	4530	15600	24.5	2080
PNR-14	3/14/2007 10:45:00 AM	6.59	NM	26.1	28.4	83.12	643	785	514	< 4	6590 D	0.4	2780	NA	362	4	< 0.05	6.8	96	96.8 D	NA	4440 D	14600	23.2	1890 D
PNR-14	10/4/2007 4:50:00 PM	6.53	NM	20200	28.7	83.66	673	821	478	< 4	6290	0.4	2640	NA	351	3.1	< 0.05	6.7	76	30	35	3560	13500	21.7	2100
PNR-15	8/10/2001 8:15:00 AM	7.4	NM	94.6	80.1	176.18	162	197	950	< 1	43500	NA	3370	NA	243	14.4	< 0.05	7.4	440	41.9	NA	22700	66100	79.3	1470
PNR-15	8/14/2001 1:00:00 PM	7.1	NM	97.2	80.1	176.18	288	351	1170	< 1	40800	NA	4060	NA	277	15.4	< 0.05	7	480	47.6	NA	25200	66000	72.9	1650
PNR-15	11/8/2001 9:10:00 AM	8.2	NM	102	81.67	179.01	369	450	950	< 1	37400	NA	3340	NA	237	15.6	0.08	6.7	382	NA	50.1	21300	62400	49.4	1430
PNR-15	2/21/2002 2:54:00 PM	6.24	NM	104.5	64.7	148.46	338	412	991	< 4	45500	NA	3430	NA	232	15.7	0.06	6.8	462	70	NA	22700	68100	62.4	1420
PNR-15	5/22/2002 2:55:00 PM	7.01	NM	16.2	10	50.00	330	402	951	< 4	43000	0.33	3300	NA	226	14.9	< 0.05	6.6	398	61	NA	21900	68800	69.1	2300
PNR-15	8/21/2002 2:00:00 PM	6.4	NM	101.7	60.5	140.90	346	423	1110	< 4	46200	0.38	3800	NA	250	15.4	0.07	6.8	385	38	43	22100	70100	72.7	1840
PNR-15	11/6/2002 2:35:00 PM	6.43	NM	112.6	56.5	133.70	325	396	1010	< 4	37400	0.31	3480	NA	235	15.4	< 0.05	6.8	420	27	42	21700	67800	60.4	1750
PNR-15	3/5/2003 12:30:00 PM	7.17	NM	107	55.5	131.90	324	395	1090	< 4	39300	0.4	3680	NA	278	14.2	< 0.05	6.6	403	35	34	24800	64600	46.8	1730
PNR-15	5/28/2003 3:35:00 PM	6.42	NM	90.9	52.7	126.86	331	403	1060	< 1	38600	0.39	3810	NA	282	13.1	< 0.05	6.7	432	32	33	22200	65400	90.1	1380
PNR-15	8/14/2003 9:58:00 AM	6.5	NM	78.9	53.2	127.76	336	410	1030	< 1	35900	0.37	3710	NA	278	12.9	< 0.05	6.6	378	33	37	19800	59600	78.3	1020
PNR-15	11/5/2003 2:30:00 PM	7.3	NM	4.62	9.2	48.56	371	453	914	< 4	31800	0.38	3380	NA	267	10.5	< 0.05	6.7	386	39	39	18700	51800	37.6	1100
PNR-15	3/17/2004 1:35:00 PM	6.42	NM	84	45.9	114.62	402	490	827	< 1	27600	0.35	3110	NA	253	10.1	< 0.05	6.1	286	35	43	15800	45800	66.3	1160
PNR-15	6/8/2004 12:45:00 PM	7.01	NM	56.3	37.8	100.04	422	515	652	< 4	24700	0.48	2490	NA	209	9	< 0.05	7	241	30	36	13900	37100	60.5	1530
PNR-15	9/15/2004 4:30:00 PM	6.74	NM	62.2	43.1	109.58	423	516	753	< 4	23300	0.44	2920	NA	252	9.4	< 0.05	7	235	36	40	13200	39000	58.9	1310
PNR-15	11/18/2004 9:05:00 AM	6.88	NM	58.9	40.4	104.72	384	469	668	< 4	21300	0.49	2660	NA	239	7.7	< 0.05	6.8	253	27	30	12000	35200	54.7	1310
PNR-15	3/2/2005 12:20:00 PM	6.72	NM	47.6	38.2	100.76	467	570	660	< 4	19600	0.54	2640	NA	242	7.4	< 0.05	7	191	31	39	11800	33000	50.2	1290

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
PNR-15	5/25/2005 10:40:00 AM	6.95	NM	44	35.3	95.54	453	553	498	< 4	14700	0.71	2040	NA	194	5.9	< 0.05	7.2	175	29	38	9080	26100	40	1650
PNR-15	8/17/2005 4:45:00 PM	6.93	NM	43.7	36.6	97.88	504	615	510	< 4	12700	0.59	2090	NA	199	6.2	< 0.05	7.2	128	26	29	8400	27300	42.2	1200
PNR-15	11/16/2005 11:35:00	7.02	NM	44.2	33.4	92.12	494	603	555	< 4	13800	0.6	2270	NA	214	5.5	< 0.05	7.1	177	33	39	8830	22800	37.7	1420
PNR-15	2/8/2006 10:45:00 AM	7.17	NM	33.1	31.7	89.06	575	701	392	< 4	10400	0.68	1580	NA	146	4.6	< 0.05	7.2	115	30	35	6920	19500	31.6	1560
PNR-15	5/24/2006 11:15:00 AM	7.25	NM	19.2	30.3	86.54	604	737	255	< 4	7470	0.86	1010	NA	91	3.5	< 0.05	7.9	90	29	33	5310	14200	24.3	1840
PNR-15	8/23/2006 5:15:00 PM	6.8	NM	28.2	31.8	89.24	562	686	312	< 4	8720	0.7	1230	NA	111	3.9	< 0.05	7.2	93	27	27	5950	18900	28.2	1670
PNR-15	12/7/2006 4:30:00 PM	7.06	NM	22	28.5	83.30	575	701	310	< 4	8790	0.8	1250	NA	115	4.3	< 0.05	7.3	85	26	28	5720	17100	28.1	1650
PNR-15	3/14/2007 11:40:00 AM	7	NM	31.8	26.1	78.98	572	697	352	< 4	9290 D	0.73	1470	NA	142	4.9	< 0.05	7.3	100	158 D	NA	6260 D	17600	28.7	1640 D
PNR-15	10/4/2007 6:00:00 PM	7.05	NM	26100	26.1	78.98	578	705	328	< 4	9050	0.6	1340	NA	126	4.6	< 0.05	7.2	96	28	36	6390	16800	28	1810
PNR-16	8/10/2001 3:15:00 PM	7.8	NM	4.3	10.1	50.18	508	620	359	< 1	33	NA	2300	NA	340	0.3	20.2	7.4	19	22.1	NA	282	4260	4.24	2480
PNR-16	8/16/2001 6:35:00 PM	7.8	NM	4.6	11.1	51.98	485	592	396	< 1	33	NA	2460	NA	357	0.1	19	7.2	20	22.6	NA	299	4260	4.14	2380
PNR-16	11/6/2001 4:05:00 PM	6.9	NM	1.9	11.11	52.00	526	642	458	< 1	26	NA	2570	NA	347	2	8.6	7.1	21	NA	158	337	4650	4.62	2780
PNR-16	2/21/2002 10:20:00 AM	7.04	NM	4.6	9.1	48.38	635	774	469	< 4	28	NA	2850	NA	408	1.4	13.3	7.1	26	39	NA	427	4960	5.08	3150
PNR-16	5/21/2002 3:50:00 PM	7.5	NM	4.9	11.6	52.88	488	595	390	< 4	16	0.45	2650	NA	407	0.2	16.5	7.3	20	39.9	NA	289	5090	5	3460
PNR-16	8/20/2002 11:40:00 AM	6.8	NM	4.2	11.2	52.16	494	603	399	< 4	26	0.46	2860	NA	452	< 0.1	17.7	7.3	14	24.2	42.1	371	5060	5.03	3270
PNR-16	11/5/2002 2:04:00 PM	7.1	NM	4.9	10.4	50.72	498	608	422	< 4	24	0.47	2810	NA	428	< 0.1	18.2	7.2	21	22	30	286	5110	5.16	3210
PNR-16	3/4/2003 1:00:00 PM	7.3	NM	4.5	8.1	46.58	474	578	426	< 4	22	0.4	2770	NA	460	0.5	18.4	7.1	20	23.8	103	361	5050	4.93	3190
PNR-16	5/27/2003 6:30:00 PM	7.01	NM	4.78	11	51.80	518	632	416	< 1	28	0.52	2760	NA	419	< 0.1	18.7	7.1	19	24	26	285	4990	5.36	3090
PNR-16	8/13/2003 9:10:00 AM	7.55	NM	3.7	10.5	50.90	499	609	405	< 1	17	0.44	2730	NA	417	0.2	18.2	7.1	20	23.7	36.8	302	5060	4.7	3120
PNR-16	11/4/2003 12:30:00 PM	7.53	NM	5.4	8.2	46.76	494	603	384	< 4	17	0.44	2790	NA	446	0.5	17.8	7.3	23	25.4	33.2	312	5030	4.5	3260
PNR-16	3/17/2004 4:09:00 PM	8.65	NM	6.6	14	57.20	509	622	454	< 1	19	0.47	3010	NA	457	0.4	16.3	7	22	26.7	35.1	320	5110	4.94	3250
PNR-16	6/8/2004 12:30:00 PM	7.24	NM	4.23	9.6	49.28	514	627	397	< 4	9	0.58	2740	NA	425	< 0.1	19.3	7.1	20	23.9	33	301	4940	4.89	3070
PNR-16	9/14/2004 12:40:00 PM	7.35	NM	4.67	13.8	56.84	513	626	436	< 4	22	0.53	2960	NA	454	< 0.1	18.8	7.3	22	26.6	41.1	294	4920	4.93	2990
PNR-16	11/16/2004 12:30:00	7.26	NM	5.4	13.3	55.94	486	593	422	< 4	24	0.55	2750	NA	412	0.2	19	7.3	21	24.3	245	282	4840	4.92	2930
PNR-16	3/1/2005 2:30:00 PM	6.97	NM	4.5	9.5	49.10	515	628	440	< 4	21	0.53	2880	NA	458	< 0.1	18.2	7.1	22	27.3	34.5	339	4960	4.92	2890
PNR-16	5/24/2005 1:58:00 PM	6.99	NM	4.9	11.4	52.52	425	519	423	< 4	19	0.52	2750	NA	411	1	17.1	7	24	25.9	53.5	342	5000	4.94	2950
PNR-16	8/17/2005 9:30:00 AM	7.04	NM	4.75	10.6	51.08	506	617	427	< 4	18	0.34	2920	NA	450	< 0.1	22.1	7.4	22	25	37.4	291	4960	4.95	2940
PNR-16	11/15/2005 3:15:00 PM	7.05	NM	5	8.4	47.12	460	562	466	< 4	20	0.46	3140	NA	480	0.1	20.4	7.2	19	25.9	88.9	341	4960	5	3120
PNR-16	2/7/2006 4:47:00 PM	7.16	NM	4.6	4.9	40.82	490	597	456	< 4	20	0.43	2950	NA	440	0.3	19.7	7	21	25.5	61.4	341	5000	5.1	3020
PNR-16	5/24/2006 12:25:00 PM	7	NM	3.9	10.4	50.72	486	592	432	< 4	23	0.51	3080	NA	486	0.2	25.7	7.9	22	27.7	43.8	349	4780	5.13	3200
PNR-16	8/22/2006 1:20:00 PM	6.97	NM	5.32	11.2	52.16	462	564	437	< 4	19	0.46	2970	NA	456	< 0.1	18.3	6.9	22	26	45.3	348	4860	5.2	2950
PNR-16	12/6/2006 1:00:00 PM	7.28	NM	4.9	5.4	41.72	466	569	450	< 4	20	0.5	2990	NA	454	< 0.1	20.9	7.4	22	27	29.4	324	4970	5.3	3000
PNR-16	3/13/2007 12:45:00 PM	6.52	4.62	4.994	8.76	47.77	460	561	463	< 4	20	0.46	3060	NA	463	< 0.1	21	7.2	21	40	NA	330	5050	5.25	3120
PNR-16	10/3/2007 10:55:00 AM	7.03	NM	6210	13.2	55.76	445	543	453	< 4	18	0.4	2950	NA	443	0.8	15.1	7.2	24	36.7	42.4	403	5030	5.55	3150
PNR-17	8/22/2001 12:35:00 PM	NM	NM	98.7	75	167.00	220	269	1440	< 1	42500	NA	5450	NA	449	21.8	< 0.05	7.4	372	55.2	NA	22900	68800	65.4	1520
PNR-17	8/22/2001 1:30:00 PM	NM	NM	97.4	76	168.80	219	267	1420	< 1	44200	NA	5490	NA	468	22.3	< 0.05	7.3	367	55	NA	22900	68700	66.4	1440
PNR-17	11/6/2001 11:30:00 AM	NM	NM	NM	88.89	192.00	178	217	2360	< 1	40300	NA	10300	NA	1070	31.5	0.1	7.1	289	NA	153	20800	61800	47.8	1490
PNR-17	2/21/2002 5:00:00 PM	6.26	NM	94.6	83.1	181.58	237	289	1850	< 4	41500	NA	7120	NA	605	29.9	< 0.05	6.8	291	111	NA	21200	65900	59.1	1120
PNR-17	5/23/2002 10:50:00 AM	6.62	NM	106.8	82.2	179.96	262	319	1360	< 4	42300	0.43	4990	NA	386	22.9	< 0.05	6.8	289	76	NA	21000	62800	67	1480
PNR-17	8/21/2002 3:15:00 PM	6.5	NM	103.7	71.5	160.70	358	437	1220	< 4	41000	0.44	4420	NA	334	19.3	< 0.05	6.8	316	40	104	15400	70000	53.1	1400
PNR-17	11/6/2002 3:40:00 PM	6.59	NM	114.8	68.7	155.66	291	355	1360	< 4	36300	0.38	4870	NA	358	19.1	< 0.05	6.8	405	34	88	23500	67100	58.3	1630
PNR-17	3/5/2003 1:30:00 PM	7.08	NM	113.5	71.3	160.34	301	367	1190	< 4	40600	0.4	4220	NA	303	16.8	< 0.05	6.8	342	36	70	24000	65400	46.2	1580
PNR-17	5/28/2003 10:00:00 AM	6.87	NM	4.4	12.1	53.78	327	400	1100	< 1	38300	0.4	3920	NA	288	15.7	< 0.05	6.7	383	33	58	22000	66400	91.6	1320
PNR-17	8/14/2003 11:05:00 AM	6.41	NM	106.5	60	140.00	331	404	942	< 1	39700	0.36	3060	NA	248	16.5	< 0.05	6.7	285	29	47	17800	65900	85.9	1020
PNR-17	11/6/2003 11:30:00 AM	6.54	NM	104.9	53.5	128.30	389	474	914	< 4	38600	0.33	3360	NA	262	15.2	< 0.05	6.8	378	30	31	20500	62000	41.8	783
PNR-17	3/17/2004 3:10:00 PM	6	NM	70	58.8	137.84	453	553	900	< 1	36900	0.31	3490	NA	302	12.9	< 0.05	6.7	326	32	35	20200	58100	83.2	536
PNR-17	6/9/2004 3:45:00 PM	6.85	NM	81.7	48.6	119.48	488	595	770	< 4	35600	0.4	3070	NA	277	12.4	< 0.05	6.7	274	30	54	18700	54700	81.4	692
PNR-17	9/16/2004 9:35:00 AM	6.65	NM	76.8	52.9	127.22	556	678	689	< 4	31300	0.36	2820	NA	268	12	< 0.05	6.9	271	32	48	17500	50000	74.5	579
PNR-17	11/18/2004 12:20:00	6.92	NM	70.8	48	118.40	652	796	498	< 4	22200	0.46	2160	NA	224	9.2	0.19	7.1	269	29	41	15000	43200	66.6	311
PNR-17	3/2/2005 3:30:00 PM	7.27	NM	5.62	9.2	48.56	833	1020	366	< 4	20500	0.56	1650	NA	179	7.2	< 0.05	7.2	209	33	41	13400	35400	54.9	506
PNR-17	5/25/2005 2:25:00 PM	6.49	NM	46	44.9	112.82	778	949	252	< 4	17300	0.88	1250	NA	151	6.6	< 0.05	7.2	178	30	35	11200	30500	47.2	757
PNR-17	8/17/2005 5:25:00 PM	6.79	NM	36.6	41.8	107.24	1010	1230	166	< 4	12000	0.65	877	NA	112	5.3	< 0.05	7.4	100	27	30	8330	25700	41.3	583
PNR-17	11/16/2005 2:01:00 PM	7.43	NM	37.3	44.1	111.38	1040	1260	113	< 4	11400	0.97	644	NA	88	3.6	< 0.05	7.6	74	27	31	7670	18600	31.5	755
PNR-17	2/8/2006 2:05:00 PM	7.61	NM	26.2	41	105.80	1160	1420	80	< 4	6080	1.07	397	NA	48	3.6	< 0.05	7.9	93	26	24	5970	15700	25.9	814
PNR-17	5/24/2006 1:50:00 PM	7.36	NM	22	37.2	98.96	1050	1280	60	< 4	7200	0.78	311	NA	39	3.4	< 0.05	8	69	24	34	5240	12800	22.6	1070
PNR-17	8/24/2006 12:45:00 PM	8.56	NM	18.7	39.6	103.28	994	1210	48	< 4	5500	1.1	254	NA	32	2.4	< 0.05	7.9	59	22.7	25.7	4710	11300	19.6	1180
PNR-17	12/8/2006 12:30:00 PM	7.56	NM	13.5	37.9	100.22	947	1160	43	< 4	4620	1.1	221	NA	26	10.4	< 0.05	8.1	51	21.2	21	3990	10500	17.4	1290
PNR-17	3/15/2007 11:49:00 AM	7.86	NM	14.7	38.1	100.58	936	1140	42 B	< 4	4250 D	1.16	225	NA	29	2.2	< 0.05	8.1	50	72.8 D	NA	3660 D	9400	15.5	1430 D
PNR-18	8/8/2001 4:00:00 PM	7.4	NM	3	11.4	52.52	616	751	276	< 1	57	NA	1580	NA	215	2.4	< 0.05	7.3	12	19.9	NA	193	2740	2.94	1470
PNR-18	8/16/2001 11:00:00 AM	7.5	NM	NM	12.2	53.96	558	681	264	< 1	56	NA	1630	NA	235	2.3	< 0.05	7.3	11	23.6	NA	203	2900	3.04	1520
PNR-18	11/7/2001 10:20:00 AM	NM	NM	NM	12.22	54.00	696	849	256	< 1	84	NA	1470	NA	200	1.4	0.13	7.5	10	NA	30.8	184	2650	2.91	1220
PNR-18	2/20/2002 11:24:00 AM	7.3	NM	NM	10.5	50.90	671	819	310	< 4	70	NA	1750	NA	238	2.2	< 0.05	7.3	10	26	NA	241	2950	3.45	1600
PNR-18	5/21/2002 10:30:00 AM	7.22	NM	3.52	13.1	55.58	624	761	283	< 4	42	0.26	1600	NA	217	2.8	< 0.05	7.4	7	27.9	NA	172	2960	3.41	1900
PNR-18	8/19/2002 4:50:00 PM	7	NM	3.2	12.3	54.14	576	703	299	< 4	57	0.26	1800	NA	256	2.5	0.05	7.1	7	23.5	31.7	152	3130	3.48	1690
PNR-18	11/5/2002 11:55:00 AM	7.41	NM	3.47	12	53.60	613	748	326	< 4	60	0.27	1800	NA	240	2.4	< 0.05	7.2	8	22.8	29.6	184	3210	3.63	1790
PNR-18	3/4/2003 2:35:00 PM	7.23	NM	3.23	10.8	51.44	583	712	332	< 4	67	0.3	1820	NA	241	2.4	< 0.05	7	8	24.1	36.5	180	3140	3.61	1760
PNR-18	5/13/2003 11:45:00 AM	7.97	NM	3.2	12.3	54.14	623	760	325	< 4	60	0.3	1860	NA	254	2.6	< 0.05	7	8	22.9	32.7	200	3150	3.36	1690
PNR-18	8/14/2003 8:40:00 AM	7.97	NM	2.9	14.2	57.56	616	752	312	< 1	45	0.25	1750	NA	235	2.2	< 0.05	6.9	7	24.1	143	196	3200	3.5	1710
PNR-18	11/4/2003 4:00:00 PM	7.6	NM	3.1	10.3	50.54	650	793	284	< 4	52	0.27	1790	NA	284	2.3	< 0.05	7.2	8	25.9	32.4	234	3250	3.22	1820
PNR-18	6/8/2004 9:55:00 AM	7.41	NM	NM	12.4	54.32	677	826	353	< 4	60	0.29	2040	NA	280	2.8	< 0.05	7.2	8	27	114	261	3210	3.39	1640
PNR-18	9/14/2004 8:55:00 AM	7.45	NM	3.3	10.6	51.08	737	899	327	< 4	52	0.25	1860	NA	254	2.8	0.05	7.2	8	26.3	27.7	263	3280	3.72	1740

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																	
Well Name	Date and Time	pH S.U.	Dissolved Oxygen mg/L	Specific Conductance mS	Temperature °C	Temperature °F	Alkalinity as $CaCO_3$ mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Fluoride mg/L	Hardness, Total as $CaCO_3$ mg/L	Iron mg/L	Magnesium mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids @ 180° C mg/L	Specific Conductance @ 25° C mS	Sulfate mg/L
PNR-18	11/18/2004 2:25:00 PM	7.07	NM	3.8	10.9	51.62	715	872	332	< 4	57	0.27	1870	NA	254	2.5	< 0.05	7.1	8	26.4	28.2	272	3350	3.77	1710
PNR-18	2/28/2005 5:50:00 PM	6.75	NM	3.5	10.9	51.62	712	869	318	< 4	53	0.23	1870	NA	262	3.2	< 0.05	7	8	27.5	34.3	247	3240	3.58	1660
PNR-18	5/25/2005 5:30:00 PM	7.11	NM	2.8	12.2	53.96	594	724	314	< 4	57	0.25	1840	NA	256	3.9	< 0.05	7	8	26.3	32.3	236	3150	3.5	1620
PNR-18	8/15/2005 6:00:00 PM	7.05	NM	3.4	21.9	71.42	752	918	332	< 4	55	0.23	1940	NA	270	2.9	< 0.05	7.2	7	24.7	24.6	274	3330	3.59	1600
PNR-18	11/15/2005 10:30:00	7.07	NM	3.52	8.8	47.84	675	824	330	< 4	60	0.25	1970	NA	278	2.6	< 0.05	7.2	6	25.4	27.1	298	3300	3.8	1700
PNR-18	2/7/2006 11:30:00 AM	7.08	NM	3.5	7.9	46.22	743	906	307	< 4	61	0.21	1850	NA	262	2.9	< 0.05	7	8	27.1	30.2	300	3270	3.8	1660
PNR-18	5/23/2006 11:15:00 AM	7.02	NM	3.487	12.55	54.59	716	874	310	< 4	69	0.24	1840	NA	259	2.6	< 0.05	7.8	9	27.6	29.6	326	3030	3.6	1770
PNR-18	8/22/2006 5:17:00 PM	7.11	NM	3.29	10.4	50.72	708	863	317	< 4	73	0.22	1870	NA	261	2.3	< 0.05	7	9	27.2	28.2	346	3360	4	1670
PNR-18	12/5/2006 2:45:00 PM	6.97	NM	3.9	9.6	49.28	688	840	312	< 4	74	0.2	1830	NA	256	2.7	< 0.05	7	8	27	28.6	310	3420	4	1670
PNR-18	3/14/2007 11:10:00 AM	6.83	0.12	3.628	9.72	49.50	719	877	316	< 4	86	0.22	1850	NA	256	3.2	< 0.05	7.2	7	41.9	NA	360	3480	4.08	1720
PNR-18	10/2/2007 5:20:00 PM	7.31	0.01	4714	9.87	49.77	740	903	308	< 4	86	0.2	1810	NA	252	3	< 0.05	7.2	8	26.9	28.9	360	3490	4.37	1730
PNR-19	8/7/2001 2:50:00 PM	7.3	NM	11.25	9.9	49.82	354	432	724	< 1	3820	NA	4410	NA	631	< 0.1	18	7	19	21.4	NA	819	8810	10.8	1160
PNR-19	8/15/2001 4:40:00 PM	7.4	NM	NM	13.5	56.30	344	420	702	< 1	3180	NA	4260	NA	610	< 0.1	13.8	7.2	20	22.5	NA	745	8260	9.47	1120
PNR-19	11/6/2001 3:20:00 PM	6.8	NM	NM	8.33	46.99	343	418	792	< 1	3770	NA	4760	NA	675	< 0.1	20.2	7.1	20	NA	25.4	861	8650	11.4	1270
PNR-19	2/19/2002 3:05:00 PM	6.96	NM	12.3	10.5	50.90	326	398	971	< 4	4410	NA	5710	NA	799	< 0.1	23	7	26	26	NA	1130	9380	14.1	1400
PNR-19	5/22/2002 2:55:00 PM	7.01	NM	16.2	10	50.00	352	430	927	< 4	6080	0.24	5570	NA	791	< 0.1	23.8	7.1	25	26	NA	1300	11300	15.6	1160
PNR-19	8/20/2002 12:30:00 PM	6.9	NM	11.5	12.9	55.22	360	439	908	< 4	5070	0.28	5510	NA	767	< 0.1	22.1	7	20	21	27	1210	11300	15.1	1470
PNR-19	11/5/2002 1:17:00 PM	7.02	NM	15.9	10	50.00	359	438	943	< 4	4960	0.28	5460	NA	755	< 0.1	23.3	7.1	22	19	25	1220	11400	16.2	1380
PNR-19	3/4/2003 12:20:00 PM	6.88	NM	16	8.8	47.84	345	420	1020	< 4	5520	0.3	5910	NA	818	< 0.1	25.7	7	25	21	24	1450	11500	16.6	1560
PNR-19	5/27/2003 5:20:00 PM	6.94	NM	17.12	12.2	53.96	360	440	1020	< 1	5890	0.3	5890	NA	813	< 0.1	24.4	6.9	26	21	23	1470	12900	18.9	1420
PNR-19	8/13/2003 8:55:00 AM	7.36	NM	13.8	10.1	50.18	350	427	1020	< 1	6210	0.29	5880	NA	810	< 0.1	24.6	7	24	20	31	1570	13000	12.4	1130
PNR-19	11/4/2003 10:50:00 AM	6.91	NM	13.1	9.1	48.38	354	431	948	< 4	6820	0.28	5800	NA	834	< 0.1	28.7	7	30	22	25	1680	12200	15.8	1390
PNR-19	3/17/2004 4:40:00 PM	8.75	NM	10.8	13	55.40	364	444	1280	< 1	7970	0.25	7210	NA	976	< 0.1	24.8	7	33	24	28	2140	14700	20	1390
PNR-19	6/8/2004 1:55:00 PM	7.13	NM	16.9	10.4	50.72	358	437	1070	< 4	6860	0.31	6060	NA	825	< 0.1	25	7	30	20.8	25.3	2110	15200	19.3	1560
PNR-19	9/14/2004 2:15:00 PM	7.6	NM	63	12	53.60	345	421	912	< 4	5580	0.33	5120	NA	691	< 0.1	24.6	7.1	34	23.7	24.5	1870	12600	17.1	1110
PNR-19	11/16/2004 1:45:00 PM	7.23	NM	21	10.6	51.08	335	409	1010	< 4	6270	0.32	5600	NA	745	< 0.1	27.2	7	30	22.4	22.5	1990	13000	18.6	1250
PNR-19	3/1/2005 3:35:00 PM	6.89	NM	18.6	10.1	50.18	368	449	1140	< 4	7590	0.32	6460	NA	877	< 0.1	26.3	7	34	24	23	2680	15700	21.8	1380
PNR-19	5/25/2005 12:36:00 PM	6.8	NM	22.2	10	50.00	318	388	1100	< 4	7370	0.31	6130	NA	824	< 0.1	28.3	7	35	21.6	20.3	2570	16700	22.1	1540
PNR-19	8/17/2005 12:23:00 PM	6.93	NM	20.3	10.7	51.26	353	431	1040	< 4	6970	0.29	5830	NA	782	< 0.1	18.1	7.1	28	21	19.8	2380	15600	20.8	1410
PNR-19	11/16/2005 12:00:00	6.69	NM	22.2	8.6	47.48	325	397	1200	< 4	8620	0.25	6650	NA	888	< 0.1	27.4	7.1	42	22.1	22	3050	16600	24.1	1350
PNR-19	2/8/2006 12:55:00 PM	7.37	NM	24.4	8.8	47.84	358	437	1320	< 4	8450	0.25	7290	NA	968	< 0.1	28.2	7.1	40	23	23	3340	16100	24.9	1530
PNR-19	5/24/2006 3:20:00 PM	6.85	NM	20.6	11.1	51.98	347	423	1230	< 4	9690	0.27	6850	NA	921	< 0.1	25.4	7.6	45	22	24	3660	16500	26.4	1430
PNR-19	8/23/2006 2:05:00 PM	6.86	NM	22.9	10.5	50.90	330	403	1300	< 4	9690	0.3	6990	NA	905	< 0.1	21.3	6.8	40	27	27	3830	19300	28.6	1350
PNR-19	12/7/2006 3:30:00 PM	7.08	NM	19.2	27.9	82.22	349	425	1560	< 4	13300	0.2	8350	NA	1080	< 0.1	21.4	7	40	22	31	5220	24700	37.9	1510
PNR-19	3/14/2007 3:00:00 PM	6.98	NM	25.5	9.3	48.74	331	404	1270	< 4	10400 D	0.25	6830	NA	891	< 0.1	20.7	7	53	224 D	NA	4260 D	20000	30	1040 D
PNR-19	10/3/2007 2:50:00 PM	6.32	2.32	28160	9.9	49.82	333	407	1150	< 4	11200	0.3	6010	NA	762	< 0.1	26.2	6.9	38	23	25	4370	20000	31.4	1350
PNR-20	8/8/2001 9:50:00 AM	7.2	NM	38.95	11.2	52.16	413	504	1750	< 1	16100	NA	9420	NA	1230	< 0.1	11.2	7.2	42	18.5	NA	5180	29000	38.1	1190
PNR-20	8/15/2001 5:15:00 PM	7.3	NM	NM	10.4	50.72	412	502	1800	< 1	12900	NA	9710	NA	1270	< 0.1	10.4	7.1	46	24.2	NA	4800	25400	29.6	1420
PNR-20	11/8/2001 10:00:00 AM	NM	NM	NM	11.11	52.00	508	620	1610	< 1	10600	NA	8940	NA	1200	0.2	4.26	6.9	37	NA	68.4	3480	19900	26.8	1460
PNR-20	2/19/2002 3:40:00 PM	6.7	NM	34.6	10	50.00	391	477	1830	< 4	15400	NA	9840	NA	1260	< 0.1	10.8	6.8	43	26	NA	5460	25200	32.7	1180
PNR-20	5/22/2002 11:00:00 AM	6.78	NM	40.2	11.2	52.16	398	486	1580	< 4	17400	0.16	8540	NA	1110	< 0.1	11.4	7	40	38	NA	5050	29600	36.4	1030
PNR-20	8/20/2002 1:25:00 PM	6.6	NM	37.4	12.3	54.14	425	519	1800	< 4	17100	0.17	10000	NA	1350	< 0.1	9.51	6.8	35	21	45	6840	31400	36.8	1390
PNR-20	11/5/2002 4:05:00 PM	6.92	NM	43.9	10.3	50.54	427	521	1930	< 4	18400	0.16	10000	NA	1260	< 0.1	11	6.9	44	16	27	6790	33600	33.3	1500
PNR-20	3/4/2003 2:15:00 PM	6.7	NM	37.4	9.2	48.56	417	509	1790	< 4	17400	0.2	9330	NA	1180	< 0.1	10.6	6.8	47	19	34	6840	30200	25.6	1650
PNR-20	5/28/2003 11:00:00 AM	6.72	NM	42.5	11.8	53.24	438	534	1950	< 1	17300	0.26	10100	NA	1270	< 0.1	11.6	6.8	50	21	21	7300	32800	43.8	1270
PNR-20	8/13/2003 11:35:00 AM	6.98	NM	34.3	10.6	51.08	431	526	1740	< 1	18100	0.17	9060	NA	1150	< 0.1	11.7	6.6	42	21	40	6260	32000	40.4	1130
PNR-20	11/5/2003 12:50:00 PM	7.15	NM	26.9	9.5	49.10	427	521	1980	< 4	21300	0.18	10100	NA	1260	< 0.1	9.24	6.8	62	24	84	8580	35700	27.5	1030
PNR-20	3/18/2004 12:50:00 PM	NM	NM	16.2	9.6	49.28	434	529	1770	< 1	16700	0.15	9250	NA	1170	< 0.1	12.7	6.8	46	22	50	6240	28600	39.8	1110
PNR-20	6/8/2004 12:15:00 PM	7	NM	NM	11.1	51.98	445	543	1700	< 4	19700	0.21	8710	NA	1060	< 0.1	10.7	6.8	57	20	35	8600	34800	49.6	1580
PNR-20	9/14/2004 1:42:00 PM	7.75	NM	41	11.2	52.16	451	550	1630	< 4	15700	0.18	8330	NA	1030	< 0.1	12.8	6.9	58	23	27	6970	31500	43.4	1410
PNR-20	11/17/2004 10:40:00	6.98	NM	56.1	10.4	50.72	435	531	1860	< 4	20000	0.19	9180	NA	1090	< 0.1	10.3	6.8	91	22	24	9100	35800	52.8	1510
PNR-20	3/1/2005 4:25:00 PM	6.73	NM	41.7	9.9	49.82	472	576	1640	< 4	18600	0.43	8200	NA	998	< 0.1	11.5	6.8	56	26	28	8570	32400	48.1	1410
PNR-20	5/24/2005 5:35:00 PM	6.89	NM	NM	10.5	50.90	401	489	1570	< 4	15600	0.2	8100	NA	1020	< 0.1	15	6.9	50	22	27	7180	29700	40.9	1360
PNR-20	8/16/2005 3:45:00 PM	6.56	NM	49.7	19.6	67.28	482	588	1600	< 4	15800	0.19	8070	NA	988	< 0.1	15.9	7.1	36	19	19	8140	34300	47.2	1160
PNR-20	11/15/2005 12:15:00	6.75	NM	52.7	10.2	50.36	425	518	1620	< 4	19500	0.17	8070	NA	975	< 0.1	11.8	6.9	57	22	21	9580	33700	49.1	1360
PNR-20	2/9/2006 10:50:00 AM	6.97	NM	39.7	10.2	50.36	467	570	1580	< 4	15300	0.16	7950	NA	972	< 0.1	15.4	6.9	82	22	21	7580	26700	41.2	1420
PNR-20	5/23/2006 5:55:00 PM	6.76	NM	45.4	9.9	49.82	457	557	1600	< 4	21300	0.16	7780	NA	917	0.1	10.9	7.5	61	21	21	10500	35500	53.1	1480
PNR-20	8/23/2006 3:50:00 PM	6.75	NM	42.1	10.1	50.18	438	534	1630	< 4	20600	0.2	7750	NA	891	0.1	11.9	6.7	53	30	26	10100	35600	54.4	1500
PNR-20	12/7/2006 4:10:00 PM	6.8	NM	44.3	8.9	48.02	435	531	1360	< 4	16400	0.2	6750	NA	824	< 0.1	14.4	6.9	36	20	21	7630	29800	45.7	1490
PNR-20	3/15/2007 10:18:00 AM	6.68	0.44	52.2	9.23	48.61	439	536	1640	< 4	20800 D	0.17	7950	NA	934	0.2	11.4	6.7	101 D	334 D	NA	11100	35800	53.6	1390 D
PNR-20	10/4/2007 10:25:00 AM	6.57	0.39	48940	9.57	49.23	442	539	1460	< 4	20000	0.2	7050	NA	823	0.2	12.3	6.7	51	22	29	9060	33600	52.4	1610
PNR-21	8/9/2001 10:15:00 AM	6.8	NM	65.5	11	51.80	501	611	2060	< 1	26500	NA	9670	NA	1100	2	8.16	6.8	63	16	NA	12500	47000	58.5	1450
PNR-21	8/16/2001 4:40:00 PM	7	NM	62	11.4	52.52	548	669	2140	< 1	26900	NA	10200	NA	1170	4.2	< 0.05	6.9	61	17	NA	13200	47000	53.4	1510
PNR-21	11/8/2001 11:00:00 AM	7.1	NM	60.3	14.44	57.99	538	656	2090	< 1	27900	NA	9930	NA	1140	2.4	8.53	6.7	68	NA	38.7	13100	45300	40.4	1630
PNR-21	2/21/2002 9:15:00 AM	6.53	NM	60.3	10.4	50.72	562	685	1970	< 4	28300	NA	9280	NA	1060	2.1	7.54	6.9	66	27	NA	12900	45800	48.1	1410
PNR-21	5/22/2002 11:55:00 AM	6.67	NM	70.5	11.8	53.24	544	663	1800	< 4	28600	0.14	8440	NA	959	2.5	7.82	6.8	60	27	NA	12600	47400	53.2	1560
PNR-21	8/21/2002 9:00:00 AM	6.6	NM	63.1	12.7	54.86	553	675	1820	< 4	29200	0.15	8580	NA	980	2.8	7.51	6.8	74	15	18	12900	51200	54.2	1690
PNR-21	11/5/2002 3:30:00 PM	7.09	NM	4.9	9.9	49.82	559	682	2000	< 4	28600	0.15	9180	NA	1020	2.6	7.99	6.8	61	11	< 20	13000	49600	44.6	1700
PNR-21	3/5/2003 2:50:00 PM	6.89	NM	62.2	10.7	51.26	546	666	1900	< 4	27000	0.3	8450	NA	897	3.2	7.64	6.7	56	13	36	12200	46400	33.6	2070
PNR-21	5/28/2003 11:50:00 AM	6.63	NM	49.1	14.5	58.10	531	647	1940	< 1	27100	0.19	8860	NA	978	2.7	7.92	6.7	73	16	44	13200	49100	67.1	1460
PNR-21	8/13/2003 2:05:00 PM	7.4	NM	62.8	14.1	57.38	560	683	1800	< 1	28600	0.15	217	NA	928	3	7.71	6.6	70	16	38	13000	48800	68.6	1160

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																	
Well Name	Date and Time	pH S.U.	Dissolved Oxygen mg/L	Specific Conductance mS	Temperature °C	Temperature °F	Alkalinity as $CaCO_3$ mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Fluoride mg/L	Hardness, Total as $CaCO_3$ mg/L	Iron mg/L	Magnesium mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids @ 180° C mg/L	Specific Conductance @ 25° C mS	Sulfate mg/L
PNR-21	11/5/2003 3:30:00 PM	7.23	NM	28.1	9.6	49.28	537	655	1450	< 4	28100	0.17	6670	NA	738	3.2	8.09	6.8	57	12	27	10600	46300	34	1170
PNR-21	6/8/2004 12:55:00 PM	6.87	NM	NM	11.9	53.42	580	708	1700	< 4	28100	0.2	7880	NA	881	3.4	7.86	6.8	67	15	43	13200	47800	66.7	1690
PNR-21	9/14/2004 2:15:00 PM	7.6	NM	63	12	53.60	560	683	1860	< 4	27800	0.17	8530	NA	942	3.5	9.05	6.8	74	23	25	13600	48400	66.8	1620
PNR-21	11/17/2004 12:40:00	6.89	NM	74.4	11.5	52.70	561	685	1940	< 4	25600	0.18	8730	NA	942	3.5	8.72	6.7	76	19	23	13400	45800	68.4	1530
PNR-21	3/1/2005 4:32:00 PM	6.64	NM	65.3	9.6	49.28	611	745	1870	< 4	26400	0.18	8550	NA	939	3.2	8.62	6.7	76	20	23	14600	46600	66	1470
PNR-21	5/24/2005 6:25:00 PM	6.88	NM	68.1	10.3	50.54	516	631	1770	< 4	26600	0.2	8030	NA	876	3.4	10.2	6.7	70	15	17	13800	47000	65.2	1640
PNR-21	8/16/2005 4:20:00 PM	6.45	NM	67.9	17.3	63.14	603	735	1770	< 4	22600	0.18	8130	NA	899	3.6	9.84	7	50	16	11	12600	47000	65.2	1350
PNR-21	11/15/2005 1:21:00 PM	6.64	NM	69.4	10.7	51.26	516	629	1740	< 4	27700	0.17	7930	NA	869	3.3	10	6.8	68	17	19	14200	45600	66.9	1480
PNR-21	2/9/2006 11:45:00 AM	6.88	NM	62.8	9.2	48.56	604	737	1880	< 4	25200	0.14	8360	NA	889	6.3	12	6.9	107	16	17	14100	42800	64.7	1530
PNR-21	5/24/2006 5:20:00 PM	6.63	NM	51.6	11.1	51.98	579	706	1690	< 4	26300	0.17	7600	NA	820	4.1	13.7	7.5	82	18	21	13600	42600	64.2	1690
PNR-21	8/23/2006 5:00:00 PM	6.62	NM	54.2	10.3	50.54	554	676	1710	< 4	26000	0.2	7620	NA	816	3.5	11.9	6.6	66	23	21	13900	42100	67.4	1600
PNR-21	12/7/2006 2:45:00 PM	6.77	NM	62.4	9.5	49.10	565	689	1620	< 4	24600	0.2	7220	NA	773	3.4	12.9	6.8	59	18	17	12800	42500	65.5	1700
PNR-21	3/15/2007 11:15:00 AM	6.71	0.39	58.15	9.42	48.96	567	691	1690	< 4	25200 D	0.17	7740	NA	853	3.4	16.9	6.7	94 D	227 D	NA	13600	43100	63.6	1560 D
PNR-21	10/4/2007 11:40:00 AM	6.53	0.28	59620	9.98	49.96	559	681	1640	< 4	25300	0.2	7410	NA	804	3.9	15.4	6.6	82	21	24	13100	42000	64.8	1730
PNR-22	8/8/2001 5:10:00 PM	7.3	NM	3.9	11.9	53.42	869	1060	208	< 1	467	NA	1250	NA	180	3.5	< 0.05	7.2	9	22.2	NA	434	2900	3.83	989
PNR-22	8/16/2001 11:35:00 AM	7.4	NM	11.2	11.3	52.34	853	1040	218	< 1	463	NA	1340	NA	193	4	< 0.05	7.2	9	26	NA	464	2920	3.78	959
PNR-22	11/7/2001 9:10:00 AM	7.6	NM	3.6	12.22	54.00	815	994	207	< 1	548	NA	1290	NA	188	4.1	0.06	7.4	8	NA	33.2	421	2870	3.86	833
PNR-22	2/20/2002 2:10:00 PM	7.11	NM	3.4	11.3	52.34	790	964	205	< 4	523	NA	1310	NA	195	3.8	< 0.05	6.9	9	27.2	NA	467	2960	4.32	943
PNR-22	5/21/2002 12:15:00 PM	7.43	NM	2.4	11.7	53.06	777	948	203	< 4	635	0.26	1260	NA	182	5	< 0.05	7.4	9	30.3	NA	542	3040	4.34	824
PNR-22	8/20/2002 3:35:00 PM	7.2	NM	3.4	11.3	52.34	785	958	217	< 4	676	0.25	1420	NA	213	5.2	0.05	7.2	7	26.8	33.1	407	3150	4.57	924
PNR-22	11/5/2002 12:50:00 PM	7.28	NM	4.59	12.2	53.96	784	956	248	< 4	790	0.24	1490	NA	213	4.3	< 0.05	7.2	9	25.7	30.6	462	3300	4.8	935
PNR-22	3/4/2003 3:10:00 PM	7.14	NM	4.57	11.2	52.16	753	918	258	< 4	857	0.3	1540	NA	218	5.6	< 0.05	7	10	23	29	487	3430	5.14	942
PNR-22	5/13/2003 12:45:00 PM	7.78	NM	4.4	12.5	54.50	771	941	250	< 4	925	0.28	1550	NA	225	5.3	< 0.05	7	9	25.9	29.1	474	3480	4.92	890
PNR-22	8/13/2003 9:15:00 AM	7.86	NM	4.6	14.1	57.38	758	924	262	< 1	977	0.25	1590	NA	228	5.2	< 0.05	6.8	9	27	37	487	3640	5.08	766
PNR-22	11/5/2003 12:25:00 PM	NM	NM	4.7	12	53.60	754	920	244	< 4	1100	0.26	1650	NA	252	5.5	< 0.05	7.2	10	27.7	39.8	510	3640	4.7	904
PNR-22	6/8/2004 4:10:00 PM	7.31	NM	NM	13	55.40	760	927	292	< 4	1150	0.29	1800	NA	259	5.9	< 0.05	7.1	10	26.6	34.4	489	3910	5.24	993
PNR-22	9/15/2004 8:50:00 AM	7.03	NM	5.26	15.2	59.36	762	930	306	< 4	1100	0.26	1880	NA	270	6.3	< 0.05	7.2	10	28.5	33.1	525	3810	5.56	873
PNR-22	11/18/2004 2:35:00 PM	7.31	NM	5.2	12.1	53.78	743	907	319	< 4	1150	0.26	1920	NA	274	5.4	< 0.05	7	11	30.6	43.4	524	3840	5.69	906
PNR-22	3/1/2005 11:00:00 AM	7.01	NM	5.9	13.2	55.76	778	949	313	< 4	1160	0.27	1980	NA	290	5.8	< 0.05	7	11	31.4	31.3	566	3890	5.69	902
PNR-22	5/24/2005 10:07:00 AM	6.99	NM	8	13	55.40	647	789	303	< 4	1130	0.27	1880	NA	274	6.2	< 0.05	6.9	11	27	36.8	557	3960	5.57	837
PNR-22	8/16/2005 9:30:00 AM	6.9	NM	5.2	15.2	59.36	773	943	327	< 4	1150	0.26	2030	NA	294	6.3	< 0.05	7.2	8	28.9	26.4	547	3890	5.72	918
PNR-22	11/15/2005 1:40:00 PM	6.38	NM	5.6	10.4	50.72	687	838	340	< 4	1180	0.25	2130	NA	310	5.2	< 0.05	7.2	7	29.4	30	588	3760	5.7	923
PNR-22	2/7/2006 10:30:00 AM	7.13	NM	5.5	11.9	53.42	754	920	323	< 4	1090	0.22	2000	NA	290	6.3	< 0.05	7	10	29.8	34.9	565	3790	5.6	864
PNR-22	5/23/2006 1:05:00 PM	6.96	NM	5.417	13.26	55.87	729	890	312	< 4	1150	0.24	1960	NA	287	5.5	< 0.05	7.8	11	29.6	48.4	576	3450	5.71	936
PNR-22	8/22/2006 6:00:00 PM	7.31	NM	5.8	10.7	51.26	698	852	333	< 4	1110	0.2	2050	NA	295	5.8	< 0.05	7	11	30.4	33	580	3970	5.9	945
PNR-22	12/6/2006 9:55:00 AM	7.07	NM	5.64	9.9	49.82	706	864	324	< 4	1080	0.2	1960	NA	280	5.8	< 0.05	7	10	29.4	31.1	546	3830	5.9	961
PNR-22	3/13/2007 3:25:00 PM	6.86	NM	4.9	10.3	50.54	707	862	317	< 4	1010	0.22	1970	NA	287	5.4	< 0.05	7.1	10	34.4	NA	563	3800	5.74	875
PNR-22	10/3/2007 4:45:00 PM	7.2	NM	6590	11.6	52.88	712	869	301	< 4	994	0.2	1850	NA	267	5.6	< 0.05	7	9	29.3	31.7	505	3780	5.91	982
PNR-23	8/9/2001 5:30:00 PM	7.3	NM	90.5	80.1	176.18	< 1	< 1	850	< 1	41300	NA	3270	NA	275	14.1	< 0.05	3.7	411	59.1	NA	20300	62400	77.3	1480
PNR-23	8/14/2001 10:30:00 AM	6.5	NM	98.6	80.4	176.72	192	234	1030	< 1	45000	NA	3730	NA	282	15.9	< 0.05	6.5	480	68.2	NA	23800	68000	74.2	1600
PNR-23	11/8/2001 1:15:00 PM	NM	NM	88.7	85.56	186.01	271	331	2110	< 1	33600	NA	8520	NA	789	22.9	3.82	6.4	312	NA	114	18200	62600	47	1450
PNR-23	2/21/2002 12:25:00 PM	5.86	NM	100.1	72.1	161.78	214	262	1770	< 4	41500	NA	6780	NA	572	24.5	0.05	6.6	313	73	NA	20400	63700	58.7	1180
PNR-23	5/23/2002 11:15:00 AM	6.68	NM	105.7	75.6	168.08	188	229	1210	< 4	42200	2.13	4570	NA	376	18.8	< 0.05	6.4	348	95	NA	21100	68200	68.3	1490
PNR-23	8/21/2002 12:55:00 PM	6.1	NM	102.9	70.2	158.36	180	219	1220	< 4	43300	2.26	4670	NA	392	18.1	< 0.05	6.6	293	58	78	18000	70100	68.5	1710
PNR-23	11/6/2002 12:15:00 PM	6.1	NM	115.5	71.2	160.16	195	238	1180	< 4	36800	2.2	4290	NA	324	17.4	< 0.05	6.5	410	63	71	22100	67300	60.2	1670
PNR-23	3/5/2003 11:20:00 AM	6.94	NM	115	72.5	162.50	198	242	1120	< 4	37400	2.4	3930	NA	276	15.9	< 0.05	6.6	373	55	54	21700	66600	48.5	1830
PNR-23	5/28/2003 2:40:00 PM	6.28	NM	102.4	72	161.60	209	255	1080	< 1	40900	2.56	3920	NA	296	15	< 0.05	6.4	474	54	73	23800	68100	93.8	1420
PNR-23	8/14/2003 8:43:00 AM	6.14	NM	98.3	70.1	158.18	215	263	1130	< 1	39900	2.43	4120	NA	314	17	0.1	6.6	433	54	63	22100	66300	87.6	1030
PNR-23	11/6/2003 10:10:00 AM	5.6	NM	107	73.2	163.76	209	255	938	< 4	40900	2.27	3450	NA	270	17.6	< 0.05	6.5	408	46	51	19500	65700	42.2	1140
PNR-23	3/17/2004 11:40:00 AM	5.57	NM	143	67.8	154.04	224	273	1260	< 1	42600	2.34	4630	NA	364	16.8	< 0.05	6.6	460	56	60	23700	66000	91.7	1080
PNR-23	6/9/2004 2:10:00 PM	6.4	NM	99.9	58.3	136.94	230	281	1170	< 4	41800	3.3	4340	NA	344	16.4	< 0.05	6.7	446	51	53	23900	63900	93.3	1610
PNR-23	9/15/2004 5:40:00 PM	6.34	NM	110.3	60.9	141.62	245	299	1250	< 4	41800	2.82	4710	NA	386	16.1	< 0.05	6.8	403	52	60	21900	66100	92.6	1530
PNR-23	11/18/2004 11:00:00	6.47	NM	99	59.6	139.28	242	295	1150	< 4	35800	2.76	4390	NA	368	15.7	0.1	6.5	451	49	52	21800	63200	92.2	1250
PNR-23	3/2/2005 11:35:00 AM	6.18	NM	90	64.8	148.64	278	339	1240	< 4	38800	2.64	4700	NA	392	16.6	0.09	6.5	399	60	45	23800	64700	92.4	1330
PNR-23	5/25/2005 1:00:00 PM	6.09	NM	93.5	61	141.80	244	298	1220	< 4	39800	2.64	4600	NA	377	17.5	< 0.05	6.5	444	49	47	23800	62500	91.1	2600
PNR-23	8/17/2005 3:20:00 PM	6.04	NM	100.1	60.4	140.72	287	350	1140	< 4	38800	2.46	4370	NA	368	17.3	< 0.05	6.6	313	41	47	20200	62000	91.1	1360
PNR-23	11/16/2005 12:15:00	6.29	NM	89.7	59.2	138.56	258	315	1230	< 4	39400	2.34	4860	NA	385	17.3	< 0.05	6.7	478	53	50	24900	59600	31.5	1240
PNR-23	2/9/2006 4:00:00 PM	6.43	NM	102.2	55.6	132.08	307	375	978	< 4	35300	2.4	3620	NA	285	15.7	< 0.05	6.7	346	49	49	21300	53800	85.3	1180
PNR-23	5/25/2006 11:15:00 AM	6.4	NM	79.87	56.62	133.92	310	378	1050	< 4	35400	2.05	3940	NA	320	16.3	< 0.05	7.4	326	51	52	21800	55000	83.8	1120
PNR-23	8/24/2006 10:18:00 AM	6.82	NM	97.8	54.2	129.56	308	376	914	< 4	33600	2.1	3420	NA	276	14	< 0.05	6.6	298	49	49	20200	53500	85.2	1070
PNR-23	12/8/2006 10:10:00 AM	6.55	NM	65.5	53.7	128.66	341	416	816	< 4	31800	2.6	3130	NA	266	16	< 0.05	6.7	274	48	49	18800	51500	80	1050
PNR-23	3/14/2007 3:00:00 PM	6.98	NM	25.5	9.3	48.74	397	485	802	< 4	28300 D	2.54	3210	NA	293	13.9	< 0.05	6.6	290 D	206 D	NA	18400	46500	73.4	889 D
PNR-23	10/5/2007 12:30:00 PM	6.06	NM	64100	46.4	115.52	514	627	649	< 4	25300	2.6	2620	NA	242	10.2	< 0.05	6.8	201	50	46	14100	39700	62.1	1080
PNR-24	8/14/2001 12:00:00 PM	6.5	NM	97.5	73.4	164.12	237	289	997	< 1	41100	NA	3240	NA	180	14.8	< 0.05	6.8	470	73.2	NA	24900	67700	73.8	1730
PNR-24	8/14/2001 6:20:00 PM	6.6	NM	101.8	80.3	176.54	231	282	1040	< 1	43400	NA	3450	NA	206	14.9	< 0.05	6.8	500	65	NA	23900	67000	51.3	1730
PNR-24	11/8/2001 1:40:00 PM	NM	NM	84.5	84.44	183.99	479	584	1090	< 1	34600	NA	3750	NA	248	14.5	< 0.05	6.6	379	NA	320	19400	61000	49.2	1690
PNR-24	2/21/2002 1:55:00 PM	6.24	NM	120.4	67.1	152.78	235	287	1020	< 4	44700	NA	3160	NA	150	17.2	< 0.05	6.8	498	163	NA	23500	68500	62.6	1450
PNR-24	5/23/2002 11:50:00 AM	6.43	NM	113.3	78.3	172.94	258	315	842	< 4	44700	3.71	2760	NA	159	14.5	< 0.05	6.7	404	207	NA	21300	69000	71.2	1940
PNR-24	8/21/2002 1:10:00 PM	6.3	NM	104.6	70	158.00	175	214	1070	< 4	44400	3.67	3360	NA	170	16	< 0.05	6.7	435	59	199	21600	72200	73.9	1470
PNR-24	11/6/2002 12:32:00 PM	6.55	NM	113.5	69	156.20	171	208	1120	< 4	36900	3.53	3700	NA	219	17	< 0.05	6.7	452	50	225	22100	68300	61.1	1670
PNR-24	3/5/2003 11:40:00 AM	7.03	NM	114	68.5	155.30	195	238	1210	< 4	41300	3.5	4190	NA	283	16.8	0.07	6.6	401	62	219	22500	66200	47.3	1740

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
PNR-24	5/28/2003 2:50:00 PM	6.58	NM	103.5	69.4	156.92	198	242	1170	< 1	40800	3.26	4190	NA	306	17.9	< 0.05	6.9	438	55	132	23300	68400	94	1440
PNR-24	8/14/2003 1:08:00 PM	6.49	NM	96.2	65.2	149.36	228	278	1180	< 1	41300	3.13	11300	NA	313	17.8	< 0.05	6.8	402	58	76	22000	68100	88.6	1130
PNR-24	11/6/2003 11:00:00 AM	5.85	NM	108.6	69.5	157.10	187	228	948	< 4	40900	3.26	3410	NA	254	19.3	< 0.05	6.8	385	47	89	19500	64700	41.9	1080
PNR-24	3/17/2004 12:10:00 PM	5.67	NM	130	63.3	145.94	210	257	995	< 1	36900	3.64	3570	NA	256	14.4	< 0.05	6.8	371	56	142	20000	56200	80.1	056
PNR-24	6/9/2004 2:20:00 PM	6.69	NM	NM	56.9	134.42	303	369	751	< 4	32500	4.32	2760	NA	213	12.7	< 0.05	6.9	311	52	110	18000	49700	75.8	1160
PNR-24	9/15/2004 8:05:00 PM	6.48	NM	68.5	55	131.00	707	862	476	< 4	25100	4.56	1890	NA	171	10.2	< 0.05	7	235	57	125	14200	40200	61.4	407
PNR-24	11/18/2004 11:05:00	6.86	NM	54.5	59.6	139.28	869	1060	332	< 4	22000	4.62	1360	NA	129	7.7	0.12	6.9	254	64	73	12400	34400	55	273
PNR-24	3/2/2005 1:25:00 PM	6.65	NM	40.2	60	140.00	1050	1280	248	< 4	18500	4.86	1100	NA	117	6.9	0.05	7.1	174	59	63	11800	29800	46.5	211
PNR-24	5/25/2005 1:45:00 PM	6.38	NM	38.4	56.6	133.88	1010	1230	181	< 4	14900	5.04	840	NA	94	5.1	< 0.05	7	164	55	80	9980	24000	41	106
PNR-24	8/17/2005 4:05:00 PM	6.59	NM	37.7	55.6	132.08	1250	1520	121	< 4	12600	5.58	583	NA	68	4.8	< 0.05	7.2	93	52	70	7910	22100	36.2	43
PNR-24	11/16/2005 4:15:00 PM	7.02	NM	34.4	52.7	126.86	1310	1600	90	< 4	10600	7.08	450	NA	55	3.3	< 0.05	7.2	120	60	101	7410	17600	29.7	9
PNR-24	2/8/2006 1:30:00 PM	7.1	NM	27.2	50	122.00	1440	1760	72	< 4	8610	8.76	309	NA	32	3.7	< 0.05	7.1	109	57	57	6220	15200	26.1	12
PNR-24	5/24/2006 12:55:00 PM	7.08	NM	26	49.8	121.64	1430	1750	41	< 4	7840	10.8	191	NA	22	2.5	< 0.05	7.9	67	50	53	5330	12800	22.8	14
PNR-24	8/24/2006 11:22:00 AM	7.95	NM	21.7	51.1	123.98	1490	1820	29	< 4	6700	14.2	135	NA	15	2.5	< 0.05	7.4	61	48	46	4850	11800	21.5	18
PNR-24	12/8/2006 10:50:00 AM	7.32	NM	15.5	49.4	120.92	1450	1770	24	< 4	5660	17	109	NA	12	2.3	0.06	7.6	52	45.4	44	4350	10900	19	53
PNR-24	3/14/2007 3:40:00 PM	7.23	NM	21.8	47.9	118.22	1550	1880	30 B	< 4	5110 D	15 D	127	NA	12	2	< 0.05	7.8	59	78.1 D	NA	4080 D	9920	17.1	62 D
PNR-25	8/14/2001 1:15:00 PM	6.6	NM	102.9	76.7	170.06	255	311	924	< 1	39900	NA	2890	NA	140	15.8	< 0.05	6.8	510	68.6	NA	24000	70500	75.6	1730
PNR-25	8/14/2001 7:05:00 PM	6.8	NM	99.2	81.1	177.98	246	301	1020	< 1	45400	NA	3180	NA	160	15.8	< 0.05	6.8	560	65.3	NA	26600	70300	76.8	1550
PNR-25	11/8/2001 10:15:00 AM	NM	NM	NM	84.44	183.99	528	644	1660	< 1	38300	NA	6000	NA	448	18.5	< 0.05	6.5	433	NA	276	21200	65600	48.5	2260
PNR-25	2/21/2002 3:30:00 PM	6.05	NM	103.1	72.6	162.68	237	289	2430	< 4	40100	NA	9350	NA	797	25.6	< 0.05	6.7	278	200	NA	18700	64500	57.9	1280
PNR-25	5/22/2002 4:50:00 PM	6.8	NM	34.8	71.1	159.98	930	1130	452	< 4	11500	4.2	1770	NA	156	10.4	< 0.05	7	78	243	NA	5600	18700	28.9	756
PNR-25	8/21/2002 2:40:00 PM	7.1	NM	11.8	61.4	142.52	1040	1270	70	< 4	3560	6.52	384	NA	51	1.4	< 0.05	7.4	31	59	312	2040	6790	11.9	< 30
PNR-25	11/6/2002 2:55:00 PM	7.14	NM	14.5	56.7	134.06	877	1070	48	< 4	3110	8	298	NA	43	0.9	< 0.05	7.5	33	45	123	2140	6330	13	< 10
PNR-25	3/5/2003 12:45:00 PM	7.91	NM	13.1	55	131.00	585	713	47	< 4	3590	9.2	245	NA	31	1	< 0.05	7.4	32	37	285	2340	6800	12.2	6
PNR-25	5/28/2003 3:25:00 PM	7.19	NM	11.7	53.6	128.48	506	618	39	< 1	3600	11.4	226	NA	31	0.8	< 0.05	7.5	32	30	301	2200	6400	11.8	< 3
PNR-25	8/14/2003 10:00:00 AM	7.32	NM	11	50.6	123.08	459	560	36	< 1	4510	11.2	2200	NA	31	0.9	< 0.05	7.6	26	31	80	2140	6590	10.4	< 10
PNR-25	11/5/2003 3:15:00 PM	6.72	NM	12.5	52.2	125.96	513	626	42	< 4	4610	9.3	256	NA	37	1.6	< 0.05	7.5	35	27	47	2360	7090	11.6	14
PNR-25	3/17/2004 2:15:00 PM	6.9	NM	40	49.1	120.38	461	562	49	< 1	4760	9.36	264	NA	34	1.4	< 0.05	7.4	33	27	53	2480	7130	12.2	4
PNR-25	6/8/2004 1:00:00 PM	7.53	NM	11.7	38.9	102.02	601	733	45	< 4	4090	9.18	254	NA	34	1.4	< 0.05	7.7	36	26.4	50	3040	7490	12.4	167
PNR-25	9/15/2004 4:45:00 PM	7.55	NM	13	40.4	104.72	562	685	52	< 4	3980	7.44	323	NA	47	1.6	< 0.05	7.7	34	23.3	46	2440	6880	12	79
PNR-25	11/18/2004 9:00:00 AM	7.69	NM	12.3	37.3	99.14	554	676	49	< 4	3750	7.56	322	NA	48	1.5	0.07	7.7	37	23.2	26.9	2360	6590	12	39
PNR-25	3/2/2005 1:00:00 PM	7.53	NM	9.7	37.1	98.78	676	824	39	< 4	3570	7.8	262	NA	40	1.3	0.25	7.9	29	22	23	2510	6630	11.5	106
PNR-25	5/25/2005 11:15:00 AM	7.5	NM	9.7	34.7	94.46	487	588	44	< 4	4250	8.28	311	NA	49	1.5	< 0.05	7.9	22	25.7	28.8	2400	6270	10.8	821
PNR-25	8/17/2005 8:20:00 PM	7.71	NM	10.4	33.3	91.94	522	637	40	< 4	2960	7.92	289	NA	46	1.2	< 0.05	7.8	23	17.3	18.8	1960	5550	10	27
PNR-25	11/16/2005 1:25:00 PM	7.96	NM	11.6	32.5	90.50	492	586	36	7	2890	7.2	287	NA	48	1.2	< 0.05	7.9	21	19.8	19.6	2010	4910	9.2	46
PNR-25	2/8/2006 11:15:00 AM	7.85	NM	8	29.9	85.82	545	665	36	< 4	2530	7.32	239	NA	36	1.2	< 0.05	7.7	25	19.9	39.5	1860	4780	8.5	10
PNR-25	5/24/2006 11:45:00 AM	7.88	NM	8.3	29.9	85.82	622	759	28	< 4	2450	7.15	182	NA	27	1	0.07	8.2	22	19.7	47.2	1790	4200	8.26	81
PNR-25	8/24/2006 12:00:00 PM	8.33	NM	6.8	29.7	85.46	527	643	26	< 4	2180	6.32	191	NA	30	1.2	< 0.05	8	23	18.4	18.8	1600	4190	7.9	55
PNR-25	12/8/2006 11:30:00 AM	7.36	NM	5.3	29.2	84.56	547	667	34	< 4	2060	5.9	239	NA	38	1.2	< 0.05	8	23	18.6	18	1500	4180	7.7	117
PNR-25	3/15/2007 10:53:00 AM	7.81	NM	6.1	29.2	84.56	513	626	49 B	< 4	2090	4.87	368	NA	59	1.4	< 0.05	7.7	26	21.3	NA	1430	3820	7.07	26
PNR-26	8/14/2001 6:00:00 PM	NM	NM	NM	79.2	174.56	144	176	910	< 1	45000	NA	2820	NA	133	14.4	< 0.05	7.2	517	63.1	NA	23600	68700	74.7	1660
PNR-26	8/22/2001 10:00:00 AM	NM	NM	98	75	167.00	159	194	803	< 1	42600	NA	2490	NA	118	13.6	< 0.05	7.5	499	61.9	NA	23400	68600	65.8	1670
PNR-26	11/8/2001 2:15:00 PM	NM	NM	NM	83.33	181.99	640	781	1070	< 1	40900	NA	3740	NA	259	16.4	0.16	7.5	437	NA	168	22800	67200	51.6	1170
PNR-26	2/21/2002 4:00:00 PM	6.42	NM	125	65	149.00	234	285	1310	< 4	40800	NA	4380	NA	269	18.4	< 0.05	6.9	453	100	NA	22300	67000	61.2	1080
PNR-26	5/23/2002 11:15:00 AM	6.68	NM	105.7	75.6	168.08	177	215	1220	< 4	42400	2.72	4210	NA	284	18.4	< 0.05	6.9	392	87	NA	20800	67400	67.2	1530
PNR-26	8/21/2002 4:00:00 PM	6.4	NM	100.3	67.4	153.32	301	367	1360	< 4	40600	2.65	4880	NA	361	17.5	< 0.05	6.7	403	59	167	15300	69100	50.7	1340
PNR-26	11/6/2002 4:20:00 PM	6.35	NM	107.2	62.7	144.86	181	221	1450	< 4	36000	2.57	5080	NA	356	16.8	< 0.05	6.7	509	53	101	22900	65300	57.5	1610
PNR-26	3/5/2003 2:00:00 PM	7.6	NM	33	64	147.20	1470	1800	108	< 4	8400	5.5	546	NA	67	3.6	< 0.05	7.4	72	58	109	5290	15600	27.4	19
PNR-26	5/28/2003 4:35:00 PM	7.09	NM	27.6	61.2	142.16	1500	1830	62	< 1	8060	6.8	464	NA	75	2.3	< 0.05	7.4	74	57	65	4990	14800	25.6	< 5
PNR-26	8/14/2003 10:45:00 AM	6.86	NM	27.2	56.8	134.24	876	1070	36	< 1	8960	10.5	3810	NA	51	3	0.09	7.4	49	45	101	4650	14300	18.9	< 10
PNR-26	11/6/2003 12:30:00 PM	7.33	NM	37.5	63.7	146.66	1460	1800	17	< 4	7010	10.3	151	NA	26	2.9	0.22	7.8	48	45	56	4450	11700	18.5	< 1
PNR-26	3/17/2004 2:15:00 PM	6.9	NM	40	49.1	120.38	1490	1710	11	53	6110	14.4	82	NA	13	1.8	< 0.05	7.7	32	36	52	3620	10000	16	< 1
PNR-26	6/9/2004 4:00:00 PM	7.76	NM	NM	44.3	111.74	1310	1590	12	< 4	4710	11.2	67	NA	9	1.7	< 0.05	7.9	34	29.1	32	3750	9140	14.2	< 50
PNR-26	9/16/2004 9:50:00 AM	7.52	NM	13.5	46.7	114.26	1350	1610	7	23	3880	8.9	45	NA	6	1.5	< 0.05	8	27	25.4	33	3020	7860	13.4	< 3
PNR-26	11/18/2004 12:25:00	7.99	NM	12.9	43.2	109.76	1130	1370	8	< 4	3690	9.3	47	NA	7	1.6	0.33	8	29	26.2	128	2730	7250	12.6	< 1
PNR-26	3/2/2005 4:10:00 PM	7.89	NM	12.1	42.5	108.50	1230	1490	5	5	3280	9.1	32	NA	5	1.8	0.12	8	22	23	26	2660	6630	11.3	< 1
PNR-26	5/25/2005 3:15:00 PM	7.38	NM	6.3	38.7	101.66	990	1200	12	5	3000	9.8	53	NA	5	1.6	< 0.05	8.2	19	19.3	23.6	2230	6170	10.2	< 1
PNR-26	8/17/2005 6:00:00 PM	7.25	NM	9.3	40.1	104.18	1090	1330	13	< 4	2900	9.4	54	NA	5	1.2	< 0.05	8	18	19.6	21	2200	5990	10.3	2
PNR-26	11/16/2005 2:55:00 PM	7.71	NM	5.5	34.7	94.46	884	1080	10	< 4	2780	9.1	53	NA	7	1.6	< 0.05	7.6	14	22.5	38.3	2270	5510	10.4	2
PNR-26	2/8/2006 3:10:00 PM	7.47	NM	4	31.8	89.24	877	1070	14	< 4	2640	8.9	59	NA	6	1.2	< 0.05	7.1	17	20.1	107	2070	5280	9.4	13
PNR-26	5/24/2006 1:30:00 PM	7.67	NM	NM	32.2	89.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PNR-27	8/21/2001 3:35:00 PM	NM	NM	27.6	10.7	51.26	592	722	1790	< 1	10300	NA	9790	NA	1290	< 0.1	28.8	7.1	37	24.4	NA	2440	21600	23.1	2020
PNR-27	9/5/2001 3:15:00 PM	7	NM	25.9	12.3	54.14	594	725	1990	< 1	10000	NA	10600	NA	1370	< 0.1	27.5	6.6	39	20.9	NA	2700	20400	25	1940
PNR-27	11/6/2001 3:30:00 PM	7.1	NM	28.1	10	50.00	569	694	1960	< 1	10900	NA	10700	NA	1400	< 0.1	29.7	6.7	40	NA	43	2840	21200	27.1	1750
PNR-27	2/20/2002 5:02:00 PM	6.66	NM	27.5	10.5	50.90	628	767	1970	< 4	11400	NA	10600	NA	1390	< 0.1	27.2	6.8	54	27	NA	3130	21000	27.1	1530
PNR-27	5/21/2002 6:12:00 PM	6.65	NM	32.1	13.7	56.66	589	719	1790	< 4	12000	0.17	9650	NA	1260	< 0.1	34.2	6.8	40	35	NA	2990	23800	29.9	1940
PNR-27	8/20/2002 7:20:00 PM	6.9	NM	29.8	14.5	58.10	580	708	1900	< 4	12600	0.17	9710	NA	1210	< 0.1	31.7	6.9	32	26	38	2850	25600	28.2	1850
PNR-27	11/6/2002 9:55:00 AM	6.84	NM	32.7	11.3	52.34	583	712	2090	< 4	11200	0.17	11000	NA	1400	< 0.1	31.2	6.8	42	22	30	3450	24200	26	1820
PNR-27	3/5/2003 11:15:00 AM	6.73	NM	30.3	10.1	50.18	567	691	2060	< 4	12900	0.2	10800	NA	1370	< 0.1	33.5	6.6	43	26	25	3740	22400	10.5	2080
PNR-27	5/28/2003 11:00:00 AM	6.72	NM	42.5	11.8	53.24	589	718	1990	< 1	12200	0.2	10400	NA	1330	< 0.1	34	6.7	57	26	33	3640	25500	34.1	1620
PNR-27	8/13/2003 1:35:00 PM	7.5	NM	32.7	15.1	59.18	577	705	1900	< 1	13000	0.17	10200	NA	1320	< 0.1	32.5	6.6	54	26	27	3660	24400	31.7	1280

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
PNR-27	11/5/2003 11:45:00 AM	7.43	NM	41.7	9.1	48.38	568	693	1760	< 4	13100	0.18	10000	NA	1370	< 0.1	35.1	6.8	53	24	48	3760	23300	19.6	1430
PNR-27	6/8/2004 11:50:00 AM	6.91	NM	NM	11.5	52.70	577	704	1930	< 4	14000	0.21	10400	NA	1340	< 0.1	30.7	6.7	46	26	30	4480	26200	36.7	1920
PNR-27	9/14/2004 1:05:00 PM	7.65	NM	33.9	11.7	53.06	525	640	1990	< 4	13100	0.26	10500	NA	1340	< 0.1	30.9	6.8	58	29	31	4320	27500	36.5	1760
PNR-27	11/17/2004 10:38:00	6.8	NM	39.5	10.6	51.08	575	701	2010	< 4	14600	0.2	10600	NA	1360	< 0.1	30.6	6.6	56	32	35	4630	24800	37.3	1830
PNR-27	3/1/2005 3:33:00 PM	6.67	NM	36.7	9.5	49.10	612	747	2090	< 4	14700	0.19	11100	NA	1420	< 0.1	30	6.8	46	28	33	5060	28200	36.7	1770
PNR-27	5/24/2005 3:33:00 PM	6.75	NM	24.1	10.4	50.72	519	633	1980	< 4	13500	0.22	10200	NA	1280	< 0.1	33.3	6.7	50	22	23	4920	28400	37.6	1840
PNR-27	8/16/2005 5:08:00 PM	6.62	NM	38.3	10.7	51.26	600	732	2080	< 4	14300	0.19	11000	NA	1400	< 0.1	39.6	6.7	39	29	28	4850	28000	37.9	1810
PNR-27	11/15/2005 4:35:00 PM	6.61	NM	41.6	10	50.00	526	642	2290	< 4	15200	0.18	12100	NA	1550	< 0.1	35.4	6.8	67	31	28	6000	27200	39	1790
PNR-27	2/8/2006 5:10:00 PM	7.19	NM	36	9	48.20	597	729	2160	< 4	13900	0.14	11300	NA	1440	< 0.1	30.6	6.9	64	28	27	5460	25200	47	1740
PNR-27	5/23/2006 4:57:00 PM	6.68	NM	36.2	9.8	49.64	575	701	2030	< 4	15200	0.18	10800	NA	1400	< 0.1	39.4	7.4	70	27	29	5580	27900	39.1	1770
PNR-27	8/23/2006 3:01:00 PM	6.63	NM	24.7	11	51.80	550	671	2070	< 4	15000	0.2	10800	NA	1370	< 0.1	29.5	6.6	47	31	25	5390	29500	41.2	1780
PNR-27	12/7/2006 2:15:00 PM	6.89	NM	39.1	9.4	48.92	565	690	2100	< 4	14200	0.2	10800	NA	1350	< 0.1	34.4	6.8	47	27	28	5490	27900	41.6	1730
PNR-27	3/14/2007 4:50:00 PM	6.75	NM	39	9.2	48.56	559	682	2060	< 4	14700 D	0.17	10800	NA	1370	< 0.1	33.2	6.6	51	247 D	NA	5660 D	28700	40.1	1680 D
PNR-27	10/3/2007 12:50:00 PM	6.22	1.09	38400	10.39	50.70	562	686	1920	< 4	15100	0.2	10000	NA	1270	< 0.1	31.8	6.6	46	28	32	5410	27300	41.7	1900
PNR-28	8/21/2001 4:45:00 PM	NM	NM	31.4	10.3	50.54	501	612	1910	< 1	11700	NA	10600	NA	1460	< 0.1	23.1	7.2	39	21.1	NA	3090	25200	26.2	1480
PNR-28	9/5/2001 2:35:00 PM	7	NM	28.4	13	55.40	493	601	2020	< 1	12300	NA	11100	NA	1470	< 0.1	21.2	6.9	36	18.3	NA	3200	22600	27	NA
PNR-28	11/6/2001 2:40:00 PM	7.1	NM	29.7	12.22	54.00	519	633	1880	< 1	10500	NA	10400	NA	1380	< 0.1	20.2	6.7	34	NA	37.3	3070	24700	24.4	1660
PNR-28	2/20/2002 4:30:00 PM	6.88	NM	31.9	10.6	51.08	522	637	2060	< 4	13700	NA	11300	NA	1490	< 0.1	21.6	6.8	82	23	NA	3850	23000	30.6	1430
PNR-28	5/21/2002 5:15:00 PM	6.67	NM	38.8	12.4	54.32	450	549	1990	< 4	14700	0.17	10900	NA	1430	< 0.1	23.3	6.8	43	33	NA	3910	27400	33.9	1820
PNR-28	8/20/2002 6:30:00 PM	6.8	NM	34.2	14.4	57.92	510	622	2090	< 4	15200	0.15	10800	NA	1340	< 0.1	22.9	6.8	39	23	30	3510	31200	32.8	1590
PNR-28	11/5/2002 1:20:00 PM	6.53	NM	36.4	10.2	50.36	516	630	2340	< 4	15700	0.17	12600	NA	1640	< 0.1	22.7	6.8	46	20	36	4850	29700	28.9	1740
PNR-28	3/5/2003 10:25:00 AM	6.71	NM	36.4	10.2	50.36	503	614	2260	< 4	15700	0.2	11700	NA	1480	< 0.1	23.6	6.8	45	22	23	4930	28700	22.4	1880
PNR-28	5/28/2003 10:30:00 AM	6.53	NM	32.8	13.1	55.58	519	633	2130	< 1	15100	0.21	11300	NA	1450	< 0.1	22.4	6.7	63	22	38	4900	30200	40.8	1460
PNR-28	8/13/2003 1:00:00 PM	7.56	NM	40.3	14.4	57.92	517	631	2140	< 1	16800	0.15	11300	NA	1440	< 0.1	21.8	6.5	53	22	31	5200	29500	36.8	1270
PNR-28	11/5/2003 2:30:00 PM	7.3	NM	4.62	9.2	48.56	484	591	2180	< 4	17300	0.16	11700	NA	1520	< 0.1	22	6.9	58	23	28	6010	29100	23	1350
PNR-28	6/8/2004 11:15:00 AM	6.9	NM	NM	11.4	52.52	528	644	2090	< 4	17400	0.21	11000	NA	1400	< 0.1	21.7	6.7	51	20	36	5720	32900	44.5	1740
PNR-28	9/15/2004 10:30:00 AM	6.61	NM	42.9	13.5	56.30	542	661	2230	< 4	18300	0.24	11700	NA	1490	< 0.1	20.6	6.8	62	28	32	6490	33700	45.3	1630
PNR-28	11/17/2004 9:30:00 AM	6.92	NM	49.7	10.1	50.18	529	646	2310	< 4	17600	0.18	11600	NA	1470	< 0.1	21.3	6.8	68	25	24	6480	32500	45.8	1660
PNR-28	3/1/2005 2:39:00 PM	6.65	NM	45.2	9.5	49.10	560	684	2170	< 4	17500	0.17	11400	NA	1440	< 0.1	20	6.7	58	25	29	7370	34300	45.5	1510
PNR-28	5/25/2005 11:07:00 AM	6.49	NM	48.2	9.9	49.82	472	575	2150	< 4	17800	0.21	11100	NA	1400	< 0.1	21.5	6.7	59	22	21	7440	34200	45.7	1770
PNR-28	8/16/2005 4:00:00 PM	6.6	NM	46.5	10.8	51.44	571	697	2190	< 4	17900	0.18	11400	NA	1430	< 0.1	21.9	6.9	43	24	21	7050	33500	46.3	1670
PNR-28	11/15/2005 11:35:00	6.63	NM	51.2	10.1	50.18	497	606	2240	< 4	19200	0.16	11600	NA	1470	< 0.1	20.2	6.9	42	23	24	7700	32500	47.5	1600
PNR-28	2/8/2006 2:40:00 PM	7.22	NM	46.9	9.1	48.38	557	680	2200	< 4	18000	0.13	11300	NA	1420	< 0.1	23	6.9	66	24	23	7970	31500	47	1630
PNR-28	5/23/2006 1:55:00 PM	6.69	NM	43.7	9.8	49.64	539	658	2080	< 4	18800	0.16	10800	NA	1350	< 0.1	23.1	7.4	60	24	25	7970	32500	47.7	1630
PNR-28	8/23/2006 12:35:00 PM	6.66	NM	39.8	10.5	50.90	518	632	2140	< 4	18300	0.2	10700	NA	1310	< 0.1	21.3	6.6	55	27	25	7930	34700	49.8	1600
PNR-28	12/6/2006 4:30:00 PM	6.93	NM	47.4	8.8	47.84	526	642	1990	< 4	18400	0.2	10100	NA	1250	< 0.1	28.3	6.8	44	23	23	7690	33600	49.5	1680
PNR-28	3/13/2007 6:00:00 PM	6.14	0.65	47.74	9.38	48.88	523	638	2010	< 4	18400 D	0.15	10200	NA	1270	< 0.1	21.6	6.7	61	92 D	NA	8180 D	33300	49.3	1370 D
PNR-28	10/4/2007 4:30:00 PM	6.53	0.49	48920	9.92	49.86	529	645	1910	< 4	19500	0.1	9550	NA	1160	< 0.1	23.2	6.5	43	21	30	7950	33200	51.9	1720
PNR-29	8/21/2001 5:45:00 PM	NM	NM	5.1	10.1	50.18	606	740	390	< 1	129	NA	2170	NA	290	< 0.1	174	7.2	14	25	NA	460	4760	5	1940
PNR-29	9/5/2001 2:00:00 PM	7.4	NM	4.9	12.8	55.04	695	847	393	< 1	104	NA	2180	NA	291	< 0.1	162	6.5	11	22.4	NA	483	4760	4.82	NA
PNR-29	11/6/2001 12:50:00 PM	7.5	NM	4.9	11.67	53.01	691	843	400	< 1	99	NA	2180	NA	286	< 0.1	158	7.1	11	NA	30.1	469	4660	4.98	1880
PNR-29	2/20/2002 1:03:00 PM	7.01	NM	4.8	10.1	50.18	623	760	399	< 4	106	NA	2200	NA	292	< 0.1	160	6.9	13	28	NA	501	4640	5.4	2070
PNR-29	5/21/2002 4:30:00 PM	7	NM	5.38	11.9	53.42	662	807	359	< 4	83	0.24	1960	NA	262	< 0.1	169	7.3	11	31	NA	449	4640	5.27	2080
PNR-29	8/20/2002 11:20:00 AM	7	NM	4.3	13.3	55.94	669	816	376	< 4	113	0.27	2130	NA	290	< 0.1	163	7.2	10	25	35	431	4780	5.4	2030
PNR-29	11/5/2002 12:42:00 PM	6.93	NM	4.9	9.9	49.82	680	830	403	< 4	117	0.28	2200	NA	290	< 0.1	167	7.1	12	25	31	469	4770	5.45	2070
PNR-29	3/5/2003 10:30:00 AM	6.66	NM	4.8	9.2	48.56	661	807	410	< 4	181	0.2	2230	NA	292	< 0.1	175	7.2	13	6	22	550	4730	5.52	2060
PNR-29	5/28/2003 10:00:00 AM	6.87	NM	4.4	12.1	53.78	677	826	418	< 1	116	0.32	2230	NA	292	< 0.1	172	7.1	13	25	35	489	4790	5.55	2030
PNR-29	8/13/2003 1:08:00 PM	7.48	NM	4	11.5	52.70	674	822	404	< 1	88	0.25	2200	NA	286	< 0.1	181	7	11	25	61	460	4800	5.33	1920
PNR-29	11/4/2003 4:45:00 PM	7.11	NM	4.6	9.8	49.64	684	835	362	< 4	104	0.27	2160	NA	305	< 0.1	178	7.1	13	26.9	29.8	482	4760	4.88	2120
PNR-29	6/8/2004 10:45:00 AM	7.26	NM	NM	11.2	52.16	702	856	403	< 4	119	0.31	2260	NA	304	< 0.1	176	7.1	12	25.3	35.1	492	4770	4.91	2030
PNR-29	9/15/2004 9:40:00 AM	7	NM	5.01	12.7	54.86	717	875	441	< 4	99	0.28	2350	NA	303	< 0.1	174	7.2	12	26.8	26.2	468	4750	5.33	2040
PNR-29	11/17/2004 9:31:00 AM	7.15	NM	5.4	9.6	49.28	693	846	416	< 4	111	0.29	2270	NA	299	< 0.1	171	6.9	13	27.3	29	505	4660	5.34	2010
PNR-29	3/1/2005 1:36:00 PM	7.08	NM	5	9.4	48.92	727	887	428	< 4	112	0.3	2340	NA	309	< 0.1	170	7.1	14	28.5	26.8	549	4800	5.26	2030
PNR-29	5/25/2005 9:46:00 AM	6.9	NM	5.2	9.8	49.64	611	745	419	< 4	98	0.3	2290	NA	301	< 0.1	180	7.2	14	27	28.9	524	4720	5.26	1860
PNR-29	8/16/2005 2:48:00 PM	6.98	NM	5.07	10.6	51.08	657	802	437	< 4	102	0.28	2400	NA	317	< 0.1	177	7.3	11	25.7	23.3	498	4790	5.3	1930
PNR-29	11/15/2005 10:50:00	7.01	NM	5.5	9.7	49.46	656	800	461	< 4	107	0.26	2520	NA	332	< 0.1	180	7.1	10	27.5	26.3	536	4810	5.4	2020
PNR-29	2/8/2006 4:15:00 PM	7.43	NM	5.1	8.7	47.66	720	878	468	< 4	108	0.23	2530	NA	332	< 0.1	180	7.2	13	29.5	29.7	564	4700	5.4	1980
PNR-29	5/23/2006 2:35:00 PM	7.02	NM	4.8	10.2	50.36	695	848	421	< 4	106	0.27	2350	NA	316	< 0.1	256	7.9	13	28.2	31.8	555	4520	5.37	2050
PNR-29	8/23/2006 11:37:00 AM	7	NM	4.12	9.9	49.82	663	808	445	< 4	103	0.3	2410	NA	315	< 0.1	259	7	14	29.2	26.9	545	4820	5.6	1970
PNR-29	12/6/2006 4:00:00 PM	7.22	NM	5.3	8.7	47.66	672	820	426	< 4	96	0.3	2350	NA	313	< 0.1	223	7.2	15	29	27.9	544	4830	5.7	2010
PNR-29	3/13/2007 5:50:00 PM	6.63	NM	5.5	9.1	48.38	664	811	446	< 4	106	0.25	2410	NA	315	< 0.1	235 D	7.1	13	38	NA	538	4740	5.54	1880
PNR-29	10/2/2007 6:40:00 PM	7.06	0	6379	9.54	49.17	668	815	420	< 4	96	0.3	2280	NA	299	< 0.1	243	7.1	11	27.7	30.5	487	4680	5.81	1960
PNR-33-06	12/6/2006 11:00:00 AM	7.03	NM	4.6	9.4	48.92	464	566	467	< 4	85	0.2	2740	NA	381	0.1	53.4	7	16	25.3	28.4	264	4450	4.9	2490
PNR-33-06	3/13/2007 1:45:00 PM	6.89	NM	4.7	10	50.00	411	502	467	< 4	73	0.24	2490	NA	321	0.2	45.4	7.2	15	33.7	NA	269	4170	4.57	2390
PNR-33-06	10/3/2007 3:35:00 PM	7.22	NM	5630	11.4	52.52	396	483	483	< 4	104	0.3	2600	NA	340	0.1	43.6	7.1	16	24.8	27.3	276	4480	5.02	2510
PNR-34-07	3/14/2007 1:15:00 PM	6.51	0.27	34.47	9.92	49.86	469	573	2330	< 4	15600 D	0.14	13200	NA	1800	0.6	6.3	6.8	50	330 D	NA	4480 D	29400	40.3	1630 D
PNR-34-07	10/5/2007 3:40:00 PM	6.56	0.14	39300	9.71	49.48	477	582	2220	< 4	15700	0.1	12700	NA	1730	0.4	2.84	6.8	45	16	28	4390	28700	40.1	1700
PNR-35-07	3/13/2007 11:15:00 AM	6.54	0.52	3.817	9.87	49.77	679	828	240	< 4	84	0.39	1300	NA	171	0.9	< 0.05	7.2	8	31.3	NA	518	3220	4	1560
PNR-35-07	10/2/2007 4:05:00 PM	6.96	0.01	4641	10.17	50.31	670	818	234	< 4	89	0.4	1290	NA	172	0.4	< 0.05	7.2	8	21.5	34.2	509	3150	4.22	1580

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																		
Well Name	Date and Time	pH S.U.	Dissolved Oxygen mg/L	Specific Conductance mS	Temperature °C	Temperature °F	Alkalinity as $CaCO_3$ mg/L	Bicarbonate mg/L	Calcium mg/L	Carbonate mg/L	Chloride mg/L	Fluoride mg/L	Hardness, Total as $CaCO_3$ mg/L	Iron mg/L	Magnesium mg/L	Nitrogen, Ammonia mg/L	Nitrogen, Nitrate plus Nitrite mg/L	pH S.U.	Potassium mg/L	Silica, Dissolved mg/L	Silica, Total mg/L	Sodium mg/L	Total Dissolved Solids @ 180° C mg/L	Specific Conductance @ 25° C mS	Sulfate mg/L
PNR-36-07	10/3/2007 2:30:00 PM	6.96	0.12	3213	9.7	49.46	425	518	271	< 4	139	0.3	1400	NA	176	< 0.1	68.4	7.1	9	17.8	29.9	242	2700	3.6	1200
USGS 92-12	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	389	474	240	< 1	11	NA	1670	12.1	260	NA	3.94	7.9	14	NA	NA	95	2330	2.58	1410
USGS 92-12	8/7/2001 11:35:00 AM	6.7	NM	2.2	9.8	49.64	422	515	203	< 1	7	NA	1420	NA	222	< 0.1	4.37	7.2	12	25.1	NA	92	2520	2.61	1360
USGS 92-12	8/15/2001 2:40:00 PM	7.7	NM	NM	9.3	48.74	422	515	220	< 1	8	NA	1520	NA	235	< 0.1	4.28	7.4	13	28.3	NA	94	2310	2.43	1450
USGS 92-12	11/6/2001 2:30:00 PM	7.1	NM	1.7	10	50.00	420	512	197	< 1	6	NA	1370	NA	212	< 0.1	5.01	7.4	13	NA	32.1	83	2150	2.33	1200
USGS 92-12	2/20/2002 2:25:00 PM	7.38	NM	2.3	10	50.00	458	558	171	< 4	6	NA	1270	NA	205	< 0.1	5.07	7.3	11	29.1	NA	84	2140	2.49	1220
USGS 92-12	5/21/2002 2:05:00 PM	7.57	NM	2.6	12.7	54.86	403	491	174	< 4	< 10	0.43	1220	NA	191	< 0.1	4.98	7.6	11	26.8	NA	85	2040	2.32	1250
USGS 92-12	8/19/2002 4:00:00 PM	7.2	NM	2.35	9.7	49.46	413	504	197	< 4	6	0.41	1520	NA	249	< 0.1	5.53	7.4	12	24.4	22.2	90	2420	2.74	1400
USGS 92-12	11/5/2002 12:00:00 PM	7.31	NM	2.6	9.8	49.64	422	514	226	< 4	6	0.43	1540	NA	237	< 0.1	6.05	7.4	14	25.8	30.3	97	2560	2.9	1480
USGS 92-12	3/4/2003 11:30:00 AM	7.22	NM	2.3	8.4	47.12	404	493	190	< 4	10	0.4	1360	NA	216	< 0.1	6.28	7.5	13	26	27	97	2190	2.44	1190
USGS 92-12	5/13/2003 2:15:00 PM	8.04	NM	2	8.8	47.84	415	507	187	< 4	7	0.44	1330	NA	211	< 0.1	6.22	7.4	13	24.3	24.9	89	2030	2.3	1170
USGS 92-12	8/13/2003 7:48:00 AM	6.1	NM	2	10.1	50.18	415	507	203	< 1	4	0.4	1440	NA	226	< 0.1	5.46	7.4	13	25.8	29.8	101	2450	2.64	1370
USGS 92-12	11/5/2003 10:00:00 AM	7.97	NM	3.1	9.2	48.56	410	500	152	< 4	4	0.41	1140	NA	184	< 0.1	6.83	7.6	15	26.7	32	79	1820	1.98	924
USGS 92-12	6/8/2004 9:15:00 AM	7.6	NM	2.3	9.7	49.46	402	490	203	< 4	4	0.46	1450	NA	230	< 0.1	5.32	7.4	13	23.4	37.6	117	2500	2.83	1390
USGS 92-12	9/14/2004 11:08:00 AM	7.76	NM	3	11.5	52.70	418	510	280	< 4	6	0.44	1990	NA	314	< 0.1	7.11	7.5	19	28.6	30.7	133	3160	3.34	1840
USGS 92-12	11/16/2004 9:20:00 AM	7.18	NM	3.1	10.3	50.54	407	496	256	< 4	6	0.45	1800	NA	282	< 0.1	8.27	7.4	19	29.1	29	129	2760	3.07	1670
USGS 92-12	3/1/2005 12:40:00 PM	7.37	NM	2.5	9.3	48.74	425	518	191	< 4	4	0.44	1410	NA	226	< 0.1	8.57	7.4	15	26.8	26.9	117	2260	2.53	1250
USGS 92-12	5/24/2005 10:43:00 AM	7.39	NM	2.3	9	48.20	356	434	177	< 4	4	0.43	1280	NA	203	< 0.1	9.06	7.5	15	24.4	22.9	110	2260	2.62	1120
USGS 92-12	8/17/2005 9:10:00 AM	7.26	NM	2.9	11.3	52.34	434	529	250	< 4	5	0.42	1780	NA	282	< 0.1	5	7.5	18	27.1	41.6	136	2930	3.15	1680
USGS 92-12	11/15/2005 2:41:00 PM	7.5	NM	2.7	9.4	48.92	392	478	226	< 4	5	0.4	1650	NA	263	< 0.1	5.99	7.6	16	28.1	56.3	125	2440	2.8	1420
USGS 92-12	2/7/2006 3:32:00 PM	7.43	NM	2.2	9.1	48.38	426	520	193	< 4	4	0.4	1420	NA	227	< 0.1	7.57	7.5	15	27.9	27.8	117	2160	2.5	1180
USGS 92-12	5/24/2006 10:55:00 AM	7.41	NM	1.8	9.3	48.74	401	490	169	< 4	4	0.41	1270	NA	205	< 0.1	7.54	8.2	14	27.6	29.2	109	1860	2.33	1070
USGS 92-12	8/22/2006 11:45:00 AM	7.47	NM	1.62	8.6	47.84	368	448	154	< 4	3	0.43	1150	NA	187	< 0.1	8.95	7.4	14	28.5	31.4	102	1780	2.3	943
USGS 92-12	12/6/2006 10:30:00 AM	7.6	NM	1.9	7	44.60	365	446	136	< 4	3	0.5	1010	NA	162	< 0.1	8.53	7.6	13	27.9	28.8	94	1630	2.1	856
USGS 92-12	3/13/2007 12:55:00 PM	7.12	8.23	1.843	9.73	49.51	353	430	135	< 4	3	0.48	990	NA	158	< 0.1	9.15	7.6	13	27.6	NA	92	1510	1.99	772
USGS 92-12	10/2/2007 5:10:00 PM	7.3	NM	2490	12.1	53.78	380	464	208	< 4	4	0.5	1410	NA	215	< 0.1	9.19	7.6	13	26.9	92.1	106	2220	2.79	1240
USGS 93-3	6/1/2000 12:00:00 AM	9.2	NM	2.6	9.8	49.64	396	483	1080	< 1	39800	NA	3770	< 0.1	257	NA	< 0.05	7.1	403	NA	NA	23400	67000	87	1730
USGS 93-3	8/7/2001 6:55:00 PM	6.8	NM	94.9	25.2	77.36	456	556	960	< 1	41600	NA	3390	NA	241	15	< 0.05	6.9	425	19.4	NA	22600	68200	79.2	100
USGS 93-3	8/15/2001 7:10:00 PM	6.9	NM	79.3	24.7	76.46	418	510	960	< 1	41800	NA	3450	NA	257	15.7	< 0.05	7	430	22.1	NA	25300	68400	73.9	2320
USGS 93-3	11/7/2001 10:05:00 AM	6.1	NM	NM	24.44	75.99	472	576	930	< 1	39700	NA	3290	NA	236	15.6	< 0.05	6.7	383	NA	21.5	23600	62300	52.3	1270
USGS 93-3	2/20/2002 9:00:00 AM	6.46	NM	92	24.8	76.64	395	482	929	< 4	42300	NA	3310	NA	241	15.9	< 0.05	6.8	422	15	NA	22500	67200	61.2	888
USGS 93-3	5/22/2002 9:30:00 AM	6.62	NM	92.1	23.9	75.02	434	529	916	< 4	42100	0.19	3150	NA	210	14.9	< 0.05	6.8	386	22	NA	22800	68100	69.3	1870
USGS 93-3	8/20/2002 4:25:00 PM	6.4	NM	90	24.5	76.10	463	565	897	< 4	42400	0.17	3230	NA	242	14.9	< 0.05	6.8	284	20	20	22800	68000	71.7	1170
USGS 93-3	11/5/2002 4:10:00 PM	6.58	NM	99.4	24	75.20	469	572	981	< 4	38400	0.18	3420	NA	236	14.9	< 0.05	6.8	439	12	20	22800	67700	61.7	1240
USGS 93-3	3/4/2003 3:45:00 PM	6.5	NM	95	23.5	74.30	458	559	900	< 4	41000	0.2	3130	NA	215	14.3	< 0.05	6.8	416	19	19	23900	67600	51.5	1180
USGS 93-3	5/28/2003 1:15:00 PM	6.62	NM	90.8	24.6	76.28	512	625	886	< 1	40200	0.22	3130	NA	222	14	< 0.05	6.7	486	20	20	24100	68100	93.5	967
USGS 93-3	8/14/2003 2:08:00 PM	6.81	NM	81.3	25	77.00	517	631	867	< 1	41800	0.19	3050	NA	216	15.3	< 0.05	6.7	446	22	24	22900	68600	88.6	791
USGS 93-3	11/4/2003 4:45:00 PM	7.11	NM	4.6	9.8	49.64	510	622	606	< 4	41900	0.21	2210	NA	168	15.7	< 0.05	6.8	427	17	20	19600	67500	50.4	859
USGS 93-3	6/8/2004 7:05:00 PM	6.76	NM	90.6	23.9	75.02	468	571	911	< 4	40000	0.15	3130	NA	208	15.2	< 0.05	6.8	416	23	26	22400	66500	96.7	1330
USGS 93-3	9/14/2004 4:25:00 PM	7.12	NM	99.6	24.5	76.10	464	566	991	< 4	43300	0.2	3440	NA	234	16.6	< 0.05	6.9	467	25	27	24700	68300	98.6	1360
USGS 93-3	11/17/2004 12:15:00	6.75	NM	107.6	22.9	73.22	436	534	922	< 4	35600	0.2	3200	NA	220	14.7	< 0.05	6.7	538	19	20	23700	66900	98.6	1100
USGS 93-3	3/2/2005 11:05:00 AM	6.55	NM	96.1	23	73.40	466	568	1010	< 4	43300	0.23	3470	NA	230	15.9	< 0.05	6.8	500	22	22	27100	66700	97.6	1300
USGS 93-3	5/25/2005 3:52:00 PM	6.43	NM	101.5	23.3	73.94	399	487	1040	< 4	42500	0.25	3580	NA	241	15.8	< 0.05	6.7	569	20	18	27200	64600	95.5	1400
USGS 93-3	8/17/2005 12:55:00 PM	6.45	NM	101.2	25.7	78.26	449	548	990	< 4	37900	0.21	3390	NA	224	14	0.54	6.9	421	14	23	24700	65800	97.3	1250
USGS 93-3	11/16/2005 4:40:00 PM	6.75	NM	106.2	22	71.60	384	468	1130	< 4	42700	0.2	3900	NA	263	15.8	< 0.05	6.8	472	20	19	27600	63600	98.5	1270
USGS 93-3	2/9/2006 3:20:00 PM	6.81	NM	98.9	20	68.00	431	525	977	< 4	40700	0.17	3210	NA	188	21.3	< 0.05	6.9	521	23	22	24700	64100	96.7	1350
USGS 93-3	5/24/2006 6:20:00 PM	6.53	NM	89.88	23.01	73.42	409	499	1020	< 4	42900	0.18	3360	NA	200	18.7	< 0.05	7.4	470	22	21	25100	56600	97.1	1340
USGS 93-3	8/23/2006 2:50:00 PM	6.49	NM	97.9	23.2	73.76	390	476	964	< 4	40900	0.2	3170	NA	186	14.6	< 0.05	6.7	403	24	34	24200	63100	99.8	1330
USGS 93-3	12/7/2006 12:05:00 PM	6.45	NM	95.2	21.6	70.88	400	488	947	< 4	41100	0.2	3190	NA	199	16.3	< 0.05	6.9	445	24	21	23800	64300	99.5	1320
USGS 93-3	3/15/2007 1:30:00 PM	6.41	0.07	90.79	22.42	72.36	401	489	1040	< 4	41900 D	0.18	3590	NA	240	17.1	< 0.05	6.8	468 D	138 D	NA	26000	64700	96.7	1240 D
USGS 93-3	10/3/2007 11:50:00 AM	6.92	0.32	89280	22.57	72.63	396	483	936	< 4	40300	0.2	3170	NA	201	15.8	< 0.05	6.7	375	23	26	21800	61600	98.6	1330
USGS-06-7	10/4/2007 5:50:00 PM	6.16	0.44	1142	9.62	49.32	441	530	20	4	13	0.4	90	NA	10	0.6	2.65	8	3	15.6	17.1	240	748	1.27	172
Whitmer	5/31/2000 12:00:00 AM	9.2	NM	3.26	10.1	50.18	353	429	133	< 1	794	NA	695	4.82	88	NA	< 0.05	8.2	8	NA	NA	432	1970	3.22	279
Whitmer	8/10/2001 10:00:00 AM	7.7	NM	3.9	10.8	51.44	366	447	168	< 1	1020	NA	893	NA	115	0.6	< 0.05	7.4	10	14.2	NA	524	2520	3.89	287
Whitmer	8/22/2001 3:30:00 PM	NM	NM	3.4	11.1	51.98	360	439	155	< 1	1020	NA	820	NA	105	0.7	< 0.05	7.5	8	13.5	NA	445	2470	3.81	270
Whitmer	11/9/2001 10:20:00 AM	7.6	NM	3.5	9.7	49.46	343	418	165	< 1	1060	NA	879	NA	111	0.8	< 0.05	7.5	9	NA	16.4	484	2410	4.04	285
Whitmer	2/22/2002 2:45:00 PM	7.76	NM	4.7	10.7	51.26	353	430	165	< 4	1110	NA	865	NA	110	0.8	< 0.05	7.6	8	15	NA	472	2530	4.17	288
Whitmer	5/22/2002 4:35:00 PM	7.63	NM	4.42	10.2	50.36	339	414	164	< 4	1290	0.21	870	NA	112	0.7	< 0.05	7.6	9	16.5	NA	457	2650	4.33	222
Whitmer	8/21/2002 9:35:00 AM	7.5	NM	3.8	10.8	51.44	331	404	187	< 4	1240	0.21	918	NA	110	0.8	< 0.05	7.6	9	12.3	10.2	512	2710	4.43	296
Whitmer	11/5/2002 2:20:00 PM	7.66	NM	4.3	10.3	50.54	334	407	197	< 4	1250	0.23	1020	NA	129	0.9	< 0.05	7.5	10	13.4	16.9	509	2670	4.65	309
Whitmer	3/4/2003 2:10:00 PM	8.1	NM	4.2	9.9	49.82	318	388	215	< 4	1310	0.2	1020	NA	151	0.8	< 0.05	7.3	10	13.6	16	619	2720	4.98	320
Whitmer	5/13/2003 5:00:00 PM	7.48	NM	5	11	51.80	329	402	216	< 4	1330	0.23	1130	NA	144	0.9	< 0.05	7.4	12	14	15	531	2760	4.54	306
Whitmer	8/14/2003 12:10:00 PM	7.45	NM	4	11.2	52.16	326	398	221	< 1	1350	0.25	1130	NA	141	0.7	< 0.05	7.5	11	13.8	16.3	536	2950	4.6	267
Whitmer	11/4/2003 4:00:00 PM	7.6	NM	3.1	10.3	50.54	323	395	224	< 4	1490	0.23	1170	NA	148	1	< 0.05	7.5	12	14.4	16.2	548	2940	4.67	248
Whitmer	3/18/2004 1:05:00 PM	7.95	NM	6.7	14.6	58.28	326	398	246	< 1	1530	0.21	1280	NA	161	1	< 0.05	7.4	11	15.4	15.7	547	3130	4.86	267
Whitmer	8/9/2004 8:45:00 AM	7.74	NM	5.2	10.8	51.44	327	399	239	< 4	1570	0.25	1240	NA	156	1	< 0.05	7.5	13	13.8	16.3	634	3500	5.45	359
Whitmer	9/16/2004 11:20:00 AM	7.92	NM	4.6	12.5	54.50	330	403	262	< 4	1510	0.22	1350	NA	168	0.9	< 0.05	7.6	12	14.9	16.5	593	3520	5.5	320
Whitmer	11/18/2004 4:00:00 PM	7.35	NM	5.9	10.6	51.08	297	362	269	< 1	1610	0.24	1400	NA	177	1	< 0.05	7.3	11	15.4	16.5	608	3420	5.69	327
Whitmer	3/2/2005 4:44:00 PM	7.54	NM	5.38	9.2	48.56	328	400	277	< 4	1670	0.25	1470	NA	188	1.1	0.11	7.5	13	15.4	15.9	676	3470	5.73	324

Table 2
Inorganic Water Chemistry Data
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation
HKM Job No.: 14B805.101

		Field-Measured Parameters					Laboratory Measured Parameters																	
Well Name	Date and Time	pH	Dissolved Oxygen	Specific Conductance	Temperature		Alkalinity as $CaCO_3$	Bicarbonate	Calcium	Carbonate	Chloride	Fluoride	Hardness, Total as $CaCO_3$	Iron	Magnesium	Nitrogen, Ammonia	Nitrogen, Nitrate plus Nitrite	pH	Potassium	Silica, Dissolved	Silica, Total	Sodium	Total Dissolved Solids @ 180° C	Specific Conductance @ 25° C	Sulfate
		S.U.	mg/L	mS	°C	°F	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mS	mg/L
Whitmer	8/16/2005 3:00:00 PM	7.4	NM	5.8	15.7	60.26	322	393	283	< 4	1610	0.22	1500	NA	192	1.1	< 0.05	7.7	11	15.2	14.6	636	3600	5.84	329
Whitmer	11/17/2005 10:25:00	7.48	NM	6.5	10.5	50.90	289	352	315	< 4	1790	0.21	1670	NA	214	1.1	< 0.05	7.5	11	15.8	16.3	687	3660	6	323
Whitmer	2/9/2006 11:15:00 AM	6.1	NM	6.2	9.8	49.64	316	386	278	< 4	1690	0.21	1440	NA	182	1.2	< 0.05	7.4	15	15.4	17	650	3480	6	379
Whitmer	5/25/2006 11:21:00 AM	7.5	NM	5	10.6	51.08	302	369	307	< 4	1820	0.21	1600	NA	204	1.2	< 0.05	7.9	14	16	17.6	708	3630	6.21	348
Whitmer	8/24/2006 11:45:00 AM	7.52	NM	5.5	10.1	50.18	284	346	316	< 4	1510	0.2	1630	NA	204	1.2	< 0.05	7.2	14	16	17.1	687	4240	6.6	342
Whitmer	12/7/2006 1:30:00 PM	7.66	NM	6.4	9	48.20	286	349	321	< 4	1640	0.2	1640	NA	203	1.3	< 0.05	7.3	12	14.8	16.6	684	4010	6.8	351
Whitmer	3/14/2007 4:55:00 PM	7.53	0.14	6,232	9.34	48.81	284	347	339	< 4	1930	0.2	1770	NA	225	1.3	< 0.05	7.4	13	19.7	NA	732	4300	6.86	340
Whitmer	10/5/2007 6:00:00 PM	7.33	0.12	6916	9.29	48.72	274	335	347	< 4	1980	0.2	1820	NA	231	1.4	< 0.05	7.2	14	15.4	16.9	731	4520	7.1	365
Whitmer (city)	5/26/2005 10:20:00 AM	7.48	NM	1.73	8.5	47.30	433	529	55	< 4	149	0.49	255	NA	29	0.2	< 0.05	7.7	6	18	17.6	302	1150	1.77	237

Accronyms/Abbreviations

°C	degrees Celsius
$CaCO_3$	calcium carbonate
°F	degrees Farenheit
mg/L	milligrams per liter
ms	milliSiemens
NA	not analyzed
NM	not measured
S.U.	standard units

Data Qualifiers

< #	Analyte not detected; value shown is the laboratory reporting limit.
D	Reporting limit increased due to sample matrix interference

Table 3

BTEX and TPH Analytical Results

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
LAW-M03	3/13/2007 5:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
Lockman (city)	5/26/2005 11:05:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-18	11/8/2001 3:30:00 PM	53	21	1.8	10	0.2
M-18	8/23/2006 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-18	12/6/2006 12:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/16/2001 2:35:00 PM	< 0.5	0.32 J	< 0.5	< 0.5	< 0.1
M-27	8/16/2001 2:45:00 PM	< 0.5	0.28 J	< 0.5	< 0.5	< 0.1
M-27	11/8/2001 8:50:00 AM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
M-27	2/20/2002 3:42:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	1.5
M-27	5/21/2002 3:05:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	1.3
M-27	8/20/2002 5:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	11/6/2002 9:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/5/2003 1:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	5/13/2003 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/13/2003 11:10:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	11/6/2003 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	6/8/2004 3:15:00 PM	0.77	< 0.5	< 0.5	0.52	< 0.1
M-27	11/18/2004 3:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/1/2005 12:05:00 PM	< 0.5	< 0.5	< 0.5	0.48	< 0.1
M-27	5/24/2005 11:20:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/16/2005 9:30:00 AM	< 0.5	< 0.5	0.49	0.45	< 0.1
M-27	11/15/2005 2:28:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	2/7/2006 1:10:00 PM	< 0.5	0.5	< 0.5	0.49 J	< 0.1
M-27	5/23/2006 2:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	8/22/2006 2:30:00 PM	< 0.5	0.41 J	< 0.5	< 0.5	0.5
M-27	12/6/2006 1:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-27	3/14/2007 5:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
M-27	10/4/2007 12:30:00 PM	< 0.5	0.46	< 0.5	< 0.5	< 0.1
M-28	6/1/2000 12:00:00 AM	14	2.8	< 0.5	< 0.5	NA
M-28	8/9/2001 12:15:00 PM	19	< 0.5 J	< 0.5	< 1	< 0.1
M-28	8/16/2001 5:00:00 PM	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/8/2001 12:00:00 PM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
M-28	2/21/2002 8:40:00 AM	20	< 0.5	< 0.5	< 0.5	2.7
M-28	5/23/2002 9:30:00 AM	21	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/21/2002 10:00:00 AM	23	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/6/2002 11:20:00 AM	22	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/5/2003 3:30:00 PM	20	< 0.5	< 0.5	< 0.5	< 0.1
M-28	5/13/2003 4:45:00 PM	23	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/13/2003 3:35:00 PM	21	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/5/2003 10:30:00 AM	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/16/2004 5:34:00 PM	12	< 0.5	< 0.5	< 0.5	< 0.1
M-28	6/8/2004 5:18:00 PM	22	< 0.5	< 0.5	0.91	< 0.1
M-28	11/19/2004 8:36:00 AM	18	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/1/2005 3:45:00 PM	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	5/24/2005 1:10:00 PM	16	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/16/2005 1:15:00 PM	16	< 0.5	< 0.5	< 0.5	< 0.1
M-28	11/15/2005 4:35:00 PM	18	< 0.5	< 0.5	< 0.5	< 0.1
M-28	2/7/2006 4:30:00 PM	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	5/23/2006 4:20:00 PM	18	< 0.5	< 0.5	< 0.5	< 0.1
M-28	8/22/2006 4:45:00 PM	20	< 0.5	< 0.5	< 0.5	< 0.1
M-28	12/6/2006 2:40:00 PM	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28	3/15/2007 10:15:00 AM	19	< 0.5	< 0.5	< 0.5	< 0.1 H
M-28	10/3/2007 4:40:00 PM	19	< 0.5	< 0.5	< 0.5	< 0.1
M-28 (Dup.)	5/23/2002 9:30:00 AM	23	< 0.5	< 0.5	< 0.5	NA
M-30	6/1/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
M-30	2/22/2002 1:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-30	5/22/2002 5:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-30	8/21/2002 10:40:00 AM	< 0.5	0.49	< 0.5	< 0.5	< 0.1

Table 3
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Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
M-31	6/1/2000 12:00:00 AM	41	0.88	< 0.5	< 0.5	NA
M-31	8/9/2001 11:05:00 AM	47	< 0.5	< 0.5	< 1	< 0.1
M-31	8/16/2001 5:30:00 PM	38	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/8/2001 4:00:00 PM	24	< 0.5	< 0.5	< 1	< 0.1
M-31	2/21/2002 9:45:00 AM	42	< 0.5	< 0.5	< 0.5	3.4
M-31	5/22/2002 3:45:00 PM	38	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/21/2002 10:45:00 AM	41	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/6/2002 10:35:00 AM	23	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/5/2003 2:10:00 PM	38	< 0.5	< 0.5	< 0.5	< 0.1
M-31	5/13/2003 4:00:00 PM	37	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/13/2003 2:40:00 PM	35	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/5/2003 11:35:00 AM	30	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/16/2004 4:00:00 PM	32	< 0.5	< 0.5	< 0.5	< 0.1
M-31	6/8/2004 4:40:00 PM	35	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/18/2004 5:00:00 PM	32	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/1/2005 1:45:00 PM	32	< 0.5	< 0.5	< 0.5	< 0.1
M-31	5/24/2005 3:05:00 PM	28	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/16/2005 11:30:00 AM	29	< 0.5	< 0.5	< 0.5	< 0.1
M-31	11/15/2005 3:30:00 PM	29	< 0.5	< 0.5	< 0.5	< 0.1
M-31	2/7/2006 2:00:00 PM	30	< 0.5	< 0.5	< 0.5	< 0.1
M-31	5/23/2006 5:20:00 PM	27	< 0.5	< 0.5	< 0.5	< 0.1
M-31	8/23/2006 1:30:00 PM	29	< 0.5	< 0.5	< 0.5	< 0.1
M-31	12/6/2006 3:45:00 PM	28	< 0.5	< 0.5	< 0.5	< 0.1
M-31	3/15/2007 11:30:00 AM	30	< 0.5	< 0.5	< 0.5	< 0.1 H
M-31	10/4/2007 2:30:00 PM	30	< 0.5	< 0.5	< 0.5	< 0.1
M-36	9/5/2001 3:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
M-36	11/9/2001 11:05:00 AM	< 0.5	< 0.5	< 0.5	< 1	NA
M-39	11/7/2001 3:45:00 PM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
MOC-1B	10/3/2007 10:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-2	3/13/2007 5:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-2	10/5/2007 2:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-3	3/14/2007 11:50:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
MOC-3	10/2/2007 7:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-4	10/4/2007 11:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-18	3/14/2007 12:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
MOC-20A	3/13/2007 1:40:00 PM	< 0.5	0.67	< 0.5	< 0.5	< 0.1
MOC-20A	10/3/2007 5:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	2.2
MOC-20B	3/13/2007 3:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
MOC-20B	10/3/2007 1:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 4	11/8/2001 3:00:00 PM	437	2040	1280	3850	992
PNR- 5	6/1/2000 12:00:00 AM	1.2	0.75	6.7	4.2	< 0.1
PNR- 5	11/7/2001 11:10:00 AM	< 0.5	< 10	< 5	< 5	< 0.1
PNR- 5	2/20/2002 10:02:00 AM	1.2	0.98	4.3	0.68	< 0.1
PNR- 5	5/22/2002 10:40:00 AM	1	1.2	8.5	0.85	< 0.1
PNR- 5	8/20/2002 5:10:00 PM	0.92	0.37	6.2	0.62	1.3
PNR- 5	11/6/2002 11:10:00 AM	1.4	0.93	6.9	0.57	< 0.1
PNR- 5	3/4/2003 4:30:00 PM	0.9	< 0.5	5.8	< 0.5	< 0.1
PNR- 5	5/28/2003 12:35:00 PM	0.72	0.61	9.6	0.87	< 0.1
PNR- 5	8/13/2003 2:59:00 PM	0.86	< 0.5	4.5	0.72	< 0.1
PNR- 5	11/4/2003 3:30:00 PM	1.3	1	10	1.1	< 0.1
PNR- 5	3/17/2004 10:15:00 AM	0.74	1.3	14	1.1	< 0.1

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Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR- 5	6/9/2004 9:40:00 AM	1.4	< 0.5	23	< 0.5	< 0.1
PNR- 5	9/14/2004 4:20:00 PM	1.1	25	1.3	< 0.5	< 0.1
PNR- 5	11/17/2004 1:50:00 PM	0.99	25	< 0.5	1.1	< 0.1
PNR- 5	3/2/2005 12:15:00 PM	1.1	36	1.3	< 0.5	< 0.1
PNR- 5	5/25/2005 5:20:00 PM	0.9	30	0.71	< 0.5	1
PNR- 5	8/17/2005 11:00:00 AM	0.79	40	0.46	< 0.5	< 0.1
PNR- 5	11/16/2005 1:00:00 PM	1.1	1.1	65	< 0.5	< 0.1
PNR- 5	2/9/2006 3:20:00 PM	0.43 J	< 0.5	73	0.38 J	< 0.1
PNR- 5	5/25/2006 10:30:00 AM	0.46 J	< 0.5	60	< 0.5	< 0.1
PNR- 5	8/23/2006 3:40:00 PM	0.66	< 0.5	64	< 0.5	< 0.1
PNR- 5	12/7/2006 1:25:00 PM	0.79	< 0.5	58	< 0.5	< 0.1
PNR- 5	3/14/2007 2:14:00 PM	0.75	1.2	85	< 0.5	< 0.1
PNR- 5	10/5/2007 11:40:00 AM	< 0.5	< 0.5	43	0.76	< 0.1
PNR- 6	5/31/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
PNR- 6	8/7/2001 9:55:00 AM	< 0.5	0.88	< 0.5	< 1	< 0.1
PNR- 6	8/15/2001 3:30:00 PM	< 0.5	0.3 J	< 0.5	< 0.5	< 0.1
PNR- 6	2/19/2002 1:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	5/21/2002 12:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	8/19/2002 4:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	11/5/2002 11:25:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	3/4/2003 10:40:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	5/13/2003 11:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	8/13/2003 8:16:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	11/4/2003 1:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	6/8/2004 10:20:00 AM	< 0.5	0.46	< 0.5	0.53	< 0.1
PNR- 6	9/14/2004 9:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	0.5
PNR- 6	11/16/2004 10:17:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	2/28/2005 5:30:00 PM	< 0.5	< 0.5	0.51	< 0.5	< 0.1
PNR- 6	5/23/2005 6:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	8/16/2005 9:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	11/15/2005 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	2/7/2006 10:47:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	5/23/2006 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	8/22/2006 10:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	12/5/2006 1:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	3/14/2007 10:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 6	10/2/2007 6:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	5/31/2000 12:00:00 AM	27	< 0.5	< 0.5	< 0.5	NA
PNR- 7	8/7/2001 5:20:00 PM	35	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	8/15/2001 5:55:00 PM	20	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	11/7/2001 11:50:00 AM	40	< 0.5	< 0.5	< 1	< 0.1
PNR- 7	2/19/2002 5:05:00 PM	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	5/22/2002 1:10:00 PM	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	8/20/2002 3:07:00 PM	41	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	11/5/2002 2:50:00 PM	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	3/4/2003 3:05:00 PM	43	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	8/12/2003 12:20:00 PM	39	< 0.5	< 0.5	< 0.5	0.28
PNR- 7	11/4/2003 2:30:00 PM	38	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	3/17/2004 5:10:00 PM	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	6/8/2004 6:40:00 PM	47	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	9/14/2004 6:00:00 PM	41	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	11/17/2004 1:40:00 PM	44	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	3/1/2005 5:30:00 PM	40	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	5/25/2005 1:47:00 PM	38	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	8/17/2005 10:52:00 AM	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	11/16/2005 2:00:00 PM	44	< 0.5	2.2	< 0.5	< 0.1
PNR- 7	2/9/2006 2:15:00 PM	38	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	5/24/2006 4:10:00 PM	35	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	8/24/2006 10:24:00 AM	39	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	12/8/2006 10:15:00 AM	32	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 7	3/15/2007 12:15:00 PM	40	< 0.5	< 0.5	< 0.5	< 0.1 H

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Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR- 7	10/4/2007 7:00:00 PM	43	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	5/31/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
PNR- 8	8/7/2001 1:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	8/16/2001 6:10:00 PM	< 0.5	0.55	< 0.5	0.54	< 0.1
PNR- 8	11/6/2001 4:30:00 PM	< 0.5	< 0.5 J	< 0.5	< 1	0.5
PNR- 8	2/22/2002 4:00:00 PM	< 0.5	< 0.5 J	< 0.5	< 0.5	< 0.1
PNR- 8	5/21/2002 5:45:00 PM	< 0.5	< 0.5 J	< 0.5	< 0.5	< 0.1
PNR- 8	8/21/2002 10:10:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	11/5/2002 3:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	3/4/2003 12:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	5/13/2003 5:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	8/12/2003 9:46:00 AM	1.1	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	11/4/2003 12:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	3/18/2004 11:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	2.7
PNR- 8	6/8/2004 6:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	0.69
PNR- 8	9/14/2004 5:05:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	0.4
PNR- 8	11/16/2004 4:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	3/2/2005 3:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	5/26/2005 10:46:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	8/18/2005 11:50:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	11/17/2005 9:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	2/9/2006 9:45:00 AM	0.42 J	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	5/24/2006 5:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	8/24/2006 12:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	12/7/2006 11:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 8	3/14/2007 1:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR- 8	10/4/2007 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	6/1/2000 12:00:00 AM	< 0.5	0.86	< 0.5	< 0.5	NA
PNR- 9	8/9/2001 9:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	8/16/2001 1:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	11/7/2001 2:30:00 PM	< 0.5	< 0.5	< 0.5	< 1	0.9
PNR- 9	2/20/2002 2:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	5/22/2002 10:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	8/20/2002 4:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	11/5/2002 2:05:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	3/4/2003 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	5/27/2003 6:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	8/13/2003 10:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	11/4/2003 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	6/8/2004 1:35:00 PM	1.8	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	9/14/2004 11:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	11/16/2004 4:12:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	3/1/2005 12:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	5/24/2005 5:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	8/16/2005 12:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	11/15/2005 3:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	2/8/2006 12:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	5/23/2006 1:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	8/23/2006 9:40:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	12/6/2006 3:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR- 9	3/13/2007 4:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR- 9	10/4/2007 10:40:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	6/1/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
PNR-10	8/8/2001 6:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/16/2001 1:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/7/2001 12:30:00 PM	< 0.5	< 0.5	< 0.5	< 1	0.6
PNR-10	2/20/2002 1:38:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/21/2002 1:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/20/2002 12:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/5/2002 1:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

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Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-10	3/4/2003 4:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/27/2003 5:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/13/2003 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/4/2003 1:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	6/8/2004 2:10:00 PM	0.43	0.59	< 0.5	0.88	< 0.1
PNR-10	9/14/2004 11:40:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/16/2004 11:28:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	3/1/2005 11:06:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/24/2005 3:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/16/2005 10:48:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	11/15/2005 11:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	2/7/2006 2:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	5/23/2006 12:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	8/23/2006 10:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	12/6/2006 2:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-10	3/13/2007 3:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR-10	10/3/2007 4:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/31/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
PNR-12	8/8/2001 3:00:00 PM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
PNR-12	8/15/2001 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/6/2001 4:20:00 PM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
PNR-12	2/20/2002 11:55:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/21/2002 11:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/19/2002 4:05:00 PM	< 0.5	0.43	< 0.5	< 0.5	< 0.1
PNR-12	11/5/2002 11:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	3/4/2003 1:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/27/2003 5:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/13/2003 8:05:00 AM	0.65	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/4/2003 12:35:00 PM	< 0.5	0.59	< 0.5	< 0.5	< 0.1
PNR-12	6/8/2004 9:15:00 AM	< 0.5	1.4	< 0.5	< 0.5	< 0.1
PNR-12	9/14/2004 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/16/2004 9:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	2/28/2005 5:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/23/2005 6:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	8/15/2005 6:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	11/15/2005 9:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	2/7/2006 1:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	5/23/2006 10:50:00 AM	0.5 J	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	12/5/2006 3:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	3/14/2007 12:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-12	10/3/2007 1:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	8/15/2001 6:15:00 PM	19	0.83	< 0.5	< 0.5	< 0.1
PNR-13	8/15/2001 7:00:00 PM	32	1.1	< 0.5	0.49 J	< 0.1
PNR-13	11/7/2001 1:35:00 PM	8.2	< 0.5	< 0.5	< 1	5.4
PNR-13	2/19/2002 4:30:00 PM	6.4	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	5/22/2002 2:00:00 PM	4.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	8/20/2002 3:45:00 PM	3.5	0.39	< 0.5	< 0.5	< 0.1
PNR-13	11/5/2002 3:30:00 PM	2.1	0.87	< 0.5	< 0.5	< 0.1
PNR-13	3/4/2003 11:15:00 AM	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	5/28/2003 10:05:00 AM	1	0.7	< 0.5	< 0.5	< 0.1
PNR-13	8/13/2003 10:20:00 AM	0.85	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	11/4/2003 2:15:00 PM	2.4	0.71	< 0.5	< 0.5	< 0.1
PNR-13	6/8/2004 3:30:00 PM	2.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	9/14/2004 10:00:00 AM	0.62	< 0.5	0.74	0.49	< 0.1
PNR-13	11/16/2004 3:30:00 PM	1.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	3/1/2005 1:25:00 PM	0.78	< 0.5	1.3	< 0.5	< 0.1
PNR-13	5/24/2005 12:00:00 PM	0.65	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	8/17/2005 9:40:00 AM	1	< 0.5	0.86	< 0.5	< 0.1
PNR-13	11/16/2005 10:50:00 AM	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	2/8/2006 10:40:00 AM	1.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	5/24/2006 1:15:00 PM	0.51	< 0.5	< 0.5	< 0.5	< 0.1

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-13	8/22/2006 2:25:00 PM	0.92	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	12/6/2006 11:30:00 AM	1.8	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	3/14/2007 4:20:00 PM	0.81	< 0.5	< 0.5	< 0.5	< 0.1
PNR-13	10/4/2007 5:30:00 PM	0.43	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	8/9/2001 4:00:00 PM	4.1	0.59	55	1.9	< 0.1
PNR-14	8/14/2001 9:45:00 AM	3.5	1.1	34 D	0.38 J	< 0.1
PNR-14	11/7/2001 2:35:00 PM	18	< 0.5 J	9.7	< 1	< 0.1
PNR-14	2/21/2002 11:30:00 AM	0.92	< 0.5	14	0.68	< 0.1
PNR-14	5/22/2002 12:05:00 PM	1.1	0.55	41	1.8	< 0.1
PNR-14	8/20/2002 5:45:00 PM	0.96	0.47	32	0.93	< 0.1
PNR-14	11/6/2002 11:28:00 AM	0.78	< 0.5	36	0.7	< 0.1
PNR-14	3/4/2003 5:15:00 PM	0.88	< 0.5	31	0.5	< 0.1
PNR-14	5/28/2003 11:45:00 AM	0.69	0.8	22	0.45	< 0.1
PNR-14	8/13/2003 3:43:00 PM	0.64	< 0.5	22	< 0.5	< 0.1
PNR-14	11/5/2003 11:45:00 AM	0.62	< 0.5	23	< 0.5	< 0.1
PNR-14	3/17/2004 10:45:00 AM	0.33	0.87	12	0.59	0.53
PNR-14	6/9/2004 10:40:00 AM	0.9	0.65	17	< 0.5	< 0.1
PNR-14	9/14/2004 3:35:00 PM	0.89	7.9	0.58	0.65	< 0.1
PNR-14	11/17/2004 3:30:00 PM	0.76	5.9	< 0.5	< 0.5	< 0.1
PNR-14	3/2/2005 10:50:00 AM	0.55	3.7	< 0.5	< 0.5	< 0.1
PNR-14	5/25/2005 9:46:00 AM	< 0.5	2.2	< 0.5	< 0.5	< 0.1
PNR-14	8/17/2005 3:18:00 PM	< 0.5	1.2	0.45	< 0.5	1.6
PNR-14	11/16/2005 11:05:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	2/9/2006 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	5/24/2006 5:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	8/23/2006 4:20:00 PM	< 0.5	< 0.5	4.1	< 0.5	< 0.1
PNR-14	12/7/2006 3:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	3/14/2007 10:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-14	10/4/2007 4:50:00 PM	0.54	0.64	< 0.5	< 0.5	< 0.1
PNR-15	8/10/2001 8:15:00 AM	3.6	6.6	4.5	7.4	< 0.1
PNR-15	8/14/2001 1:00:00 PM	3.3	4.8	3.8	4.4	0.5
PNR-15	11/8/2001 9:10:00 AM	4.8	6.6	24	< 5	2.7
PNR-15	2/21/2002 2:54:00 PM	1.8	< 0.5	24	5.7	1.5
PNR-15	5/22/2002 2:55:00 PM	2.3	0.72	18	1.4	3.4
PNR-15	8/21/2002 2:00:00 PM	2.5	3.8	14	19	1.1
PNR-15	11/6/2002 2:35:00 PM	2.8	< 0.5	11	8.5	2
PNR-15	3/5/2003 12:30:00 PM	6.3	< 0.5	21	230	68
PNR-15	5/28/2003 3:35:00 PM	4.2	1.2	16	34	4.4
PNR-15	8/14/2003 9:58:00 AM	20	32	13	13	0.28
PNR-15	11/5/2003 2:30:00 PM	1.9	1.2	12	9.3	1.2
PNR-15	3/17/2004 1:35:00 PM	0.77	< 0.5	7.7	0.79	1.2
PNR-15	6/8/2004 12:45:00 PM	1	< 0.5	9.6	< 0.5	1.1
PNR-15	9/15/2004 4:30:00 PM	0.93	8.5	0.79	0.71	< 0.1
PNR-15	11/18/2004 9:05:00 AM	0.74	9.4	0.78	0.93	< 0.1
PNR-15	3/2/2005 12:20:00 PM	14	12	1.3	6.9	< 0.1
PNR-15	5/25/2005 10:40:00 AM	0.45	5.4	< 0.5	< 0.5	< 0.1
PNR-15	8/17/2005 4:45:00 PM	0.44	7.4	0.56	< 0.5	< 0.1
PNR-15	11/16/2005 11:35:00 AM	< 0.5	< 0.5	4.7	< 0.5	< 0.1
PNR-15	2/8/2006 10:45:00 AM	< 0.5	< 0.5	3.6	0.67	< 0.1
PNR-15	5/24/2006 11:15:00 AM	< 0.5	0.74	1.5	1.3	3.5
PNR-15	8/23/2006 5:15:00 PM	< 0.5	0.66	1.5	0.6	< 0.1
PNR-15	12/7/2006 4:30:00 PM	< 0.5	< 0.5	2.4	< 0.5	< 0.1
PNR-15	3/14/2007 11:40:00 AM	0.63	< 0.5	2	0.56	< 0.1
PNR-15	10/4/2007 6:00:00 PM	0.63	< 0.5	0.76	< 0.5	< 0.1
PNR-16	8/10/2001 3:15:00 PM	0.32 J	1 J	0.42 J	1	14
PNR-16	8/16/2001 6:35:00 PM	< 0.5	0.37 J	< 0.5	0.34 J	< 0.1
PNR-16	11/6/2001 4:05:00 PM	< 0.5	< 0.5 J	< 0.5	< 1	< 0.1
PNR-16	2/21/2002 10:20:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	5/21/2002 3:50:00 PM	< 0.5	0.83	< 0.5	2	< 0.1
PNR-16	8/20/2002 11:40:00 AM	< 0.5	0.52	< 0.5	< 0.5	< 0.1

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-16	11/5/2002 2:04:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/4/2003 1:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	5/27/2003 6:30:00 PM	< 0.5	0.5	< 0.5	< 0.5	< 0.1
PNR-16	8/13/2003 9:10:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	11/4/2003 12:30:00 PM	0.75	1.9	< 0.5	0.85	< 0.1
PNR-16	3/17/2004 4:09:00 PM	< 0.5	0.53	0.59	< 0.5	0.43
PNR-16	6/8/2004 12:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	9/14/2004 12:40:00 PM	< 0.5	< 0.5	0.78	< 0.5	< 0.1
PNR-16	11/16/2004 12:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/1/2005 2:30:00 PM	< 0.5	< 0.5	0.76	< 0.5	< 0.1
PNR-16	5/24/2005 1:58:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	8/17/2005 9:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	11/15/2005 3:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	2/7/2006 4:47:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	5/24/2006 12:25:00 PM	< 0.5	0.46 J	< 0.5	< 0.5	< 0.1
PNR-16	8/22/2006 1:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	12/6/2006 1:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-16	3/13/2007 12:45:00 PM	< 0.5	0.44 J	< 0.5	< 0.5	< 0.1
PNR-16	10/3/2007 10:55:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-17	8/22/2001 12:35:00 PM	309	640	135	377	15.8
PNR-17	8/22/2001 1:30:00 PM	206	342	75	214	30.8
PNR-17	11/8/2001 11:30:00 AM	301	1220	582	1720	806
PNR-17	2/21/2002 5:00:00 PM	341	682	191	511	62
PNR-17	5/23/2002 10:50:00 AM	386	877	225	620	53
PNR-17	8/21/2002 3:15:00 PM	230	438	98	261	140
PNR-17	11/6/2002 3:40:00 PM	97	195	69	181	200
PNR-17	3/5/2003 1:30:00 PM	90	245	105	277	82
PNR-17	5/28/2003 10:00:00 AM	76	202	118	305	41
PNR-17	8/14/2003 11:05:00 AM	64	119	82	190	180
PNR-17	11/6/2003 11:30:00 AM	74	75	120	200	150
PNR-17	3/17/2004 3:10:00 PM	47	12	89	87	56
PNR-17	6/9/2004 3:45:00 PM	45	1.9	85	13	31
PNR-17	9/16/2004 9:35:00 AM	33	63	1.7	5.4	10
PNR-17	11/18/2004 12:20:00 PM	23	56	< 0.5	6.4	120
PNR-17	3/2/2005 3:30:00 PM	15	34	3.4	18	26
PNR-17	5/25/2005 2:25:00 PM	15	69	3.6	15	77
PNR-17	8/17/2005 5:25:00 PM	7.7	39	0.53	5.3	180
PNR-17	11/16/2005 2:01:00 PM	15	2.3	37	49	98
PNR-17	2/8/2006 2:05:00 PM	3.7	9.7	20	29	1.8
PNR-17	5/24/2006 1:50:00 PM	0.76	2.9	8.3	11	1200
PNR-17	8/24/2006 12:45:00 PM	1.8	5	28	51	12
PNR-17	12/8/2006 12:30:00 PM	0.66	4.4	23	40	5
PNR-17	3/15/2007 11:49:00 AM	< 1	3.3	17	45	14 H
PNR-18	8/8/2001 4:00:00 PM	< 0.5	0.81	< 0.5	< 1	< 0.1
PNR-18	8/16/2001 11:00:00 AM	< 0.5	0.78	< 0.5	< 0.5	< 0.1
PNR-18	11/7/2001 10:20:00 AM	< 0.5	0.66	< 0.5	< 1	0.9
PNR-18	2/20/2002 11:24:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/21/2002 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/19/2002 4:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	11/5/2002 11:55:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	3/4/2003 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/13/2003 11:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/14/2003 8:40:00 AM	0.82	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	11/4/2003 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	6/8/2004 9:55:00 AM	0.75	0.52	< 0.5	0.63	< 0.1
PNR-18	9/14/2004 8:55:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	11/18/2004 2:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	2/28/2005 5:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/25/2005 5:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/15/2005 6:00:00 PM	< 0.5	< 0.5	0.75	0.64	< 0.1
PNR-18	11/15/2005 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-18	2/7/2006 11:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	5/23/2006 11:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	8/22/2006 5:17:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	12/5/2006 2:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	3/14/2007 11:10:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-18	10/2/2007 5:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/7/2001 2:50:00 PM	1.1	< 0.5	< 0.5	< 1	< 0.1
PNR-19	8/15/2001 4:40:00 PM	0.35 J	0.41 J	< 0.5	< 0.5	< 0.1
PNR-19	11/6/2001 3:20:00 PM	1.4	< 0.5	< 0.5	< 1	< 0.1
PNR-19	2/19/2002 3:05:00 PM	2.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	5/22/2002 2:55:00 PM	3.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/20/2002 12:30:00 PM	3.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/5/2002 1:17:00 PM	3.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/4/2003 12:20:00 PM	5.1	< 0.5	< 0.5	< 0.5	0.87
PNR-19	5/27/2003 5:20:00 PM	5.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/13/2003 8:55:00 AM	5.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/4/2003 10:50:00 AM	5.4	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/17/2004 4:40:00 PM	6.6	< 0.5	0.46	< 0.5	< 0.1
PNR-19	6/8/2004 1:55:00 PM	8.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	9/14/2004 2:15:00 PM	6.3	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/16/2004 1:45:00 PM	7.8	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/1/2005 3:35:00 PM	7.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	5/25/2005 12:36:00 PM	7.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/17/2005 12:23:00 PM	7.9	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	11/16/2005 12:00:00 PM	8.9	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	2/8/2006 12:55:00 PM	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	5/24/2006 3:20:00 PM	9.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	8/23/2006 2:05:00 PM	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	12/7/2006 3:30:00 PM	12	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	3/14/2007 3:00:00 PM	12	< 0.5	< 0.5	< 0.5	< 0.1
PNR-19	10/3/2007 2:50:00 PM	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/8/2001 9:50:00 AM	5.4	< 0.5	< 0.5	< 1	< 0.1
PNR-20	8/15/2001 5:15:00 PM	5.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/8/2001 10:00:00 AM	1.4	< 0.5	< 0.5	< 1	< 0.1
PNR-20	2/19/2002 3:40:00 PM	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	5/22/2002 11:00:00 AM	10	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/20/2002 1:25:00 PM	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/5/2002 4:05:00 PM	17	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	3/4/2003 2:15:00 PM	15	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	5/28/2003 11:00:00 AM	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/13/2003 11:35:00 AM	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/5/2003 12:50:00 PM	15	0.51	< 0.5	< 0.5	< 0.1
PNR-20	3/18/2004 12:50:00 PM	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	6/8/2004 12:15:00 PM	14	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	9/14/2004 1:42:00 PM	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/17/2004 10:40:00 AM	18	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	3/1/2005 4:25:00 PM	15	< 0.5	0.57	< 0.5	< 0.1
PNR-20	5/24/2005 5:35:00 PM	11	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/16/2005 3:45:00 PM	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	11/15/2005 12:15:00 PM	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	2/9/2006 10:50:00 AM	14	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	5/23/2006 5:55:00 PM	16	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	8/23/2006 3:50:00 PM	17	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	12/7/2006 4:10:00 PM	13	< 0.5	< 0.5	< 0.5	< 0.1
PNR-20	3/15/2007 10:18:00 AM	20	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR-20	10/4/2007 10:25:00 AM	17	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/9/2001 10:15:00 AM	28	< 0.5	< 0.5	< 1	< 0.1
PNR-21	8/16/2001 4:40:00 PM	26	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/8/2001 11:00:00 AM	32	< 0.5	< 0.5	< 1	< 0.1
PNR-21	2/21/2002 9:15:00 AM	32	< 0.5	< 0.5	< 0.5	2.2

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-21	5/22/2002 11:55:00 AM	33	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/21/2002 9:00:00 AM	35	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/5/2002 3:30:00 PM	37	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/5/2003 2:50:00 PM	36	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	5/28/2003 11:50:00 AM	32	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/13/2003 2:05:00 PM	25	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/5/2003 3:30:00 PM	29	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	6/8/2004 12:55:00 PM	34	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	9/14/2004 2:15:00 PM	37	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/17/2004 12:40:00 PM	31	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/1/2005 4:32:00 PM	29	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	5/24/2005 6:25:00 PM	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/16/2005 4:20:00 PM	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	11/15/2005 1:21:00 PM	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	2/9/2006 11:45:00 AM	27	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	5/24/2006 5:20:00 PM	24	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	8/23/2006 5:00:00 PM	28	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	12/7/2006 2:45:00 PM	22	< 0.5	< 0.5	< 0.5	< 0.1
PNR-21	3/15/2007 11:15:00 AM	25	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR-21	10/4/2007 11:40:00 AM	21	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/8/2001 5:10:00 PM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
PNR-22	8/16/2001 11:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	11/7/2001 9:10:00 AM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
PNR-22	2/20/2002 2:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	5/21/2002 12:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/20/2002 3:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	11/5/2002 12:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/4/2003 3:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	5/13/2003 12:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/13/2003 9:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	11/5/2003 12:25:00 PM	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	6/8/2004 4:10:00 PM	< 0.5	< 0.5	< 0.5	1.2	< 0.1
PNR-22	9/15/2004 8:50:00 AM	< 0.5	< 0.5	0.62	< 0.5	< 0.1
PNR-22	11/18/2004 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/1/2005 11:00:00 AM	< 0.5	< 0.5	0.51	< 0.5	< 0.1
PNR-22	5/24/2005 10:07:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/16/2005 9:30:00 AM	< 0.5	< 0.5	0.57	0.54	< 0.1
PNR-22	11/15/2005 1:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	2/7/2006 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	5/23/2006 1:05:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	8/22/2006 6:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	12/6/2006 9:55:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	3/13/2007 3:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-22	10/3/2007 4:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-23	8/9/2001 5:30:00 PM	58	94	17	49	< 0.1
PNR-23	8/14/2001 10:30:00 AM	195	338	68	189	< 0.1
PNR-23	11/8/2001 1:15:00 PM	215	269	51	127	56.2
PNR-23	2/21/2002 12:25:00 PM	220	224	27	84	11
PNR-23	5/23/2002 11:15:00 AM	417	575	78	245	3.6
PNR-23	8/21/2002 12:55:00 PM	465	666	92	283	1.4
PNR-23	11/6/2002 12:15:00 PM	401	573	70	219	0.6
PNR-23	3/5/2003 11:20:00 AM	419	664	90	271	0.66
PNR-23	5/28/2003 2:40:00 PM	433	759	137	413	1.5
PNR-23	8/14/2003 8:43:00 AM	161	236	38	112	0.62
PNR-23	11/6/2003 10:10:00 AM	357	700	143	399	2.1
PNR-23	3/17/2004 11:40:00 AM	288	277	94	203	0.78
PNR-23	6/9/2004 2:10:00 PM	331	73	116	179	0.57
PNR-23	9/15/2004 5:40:00 PM	200	74	9.3	103	0.8
PNR-23	11/18/2004 11:00:00 AM	268	115	8.8	166	0.7
PNR-23	3/2/2005 11:35:00 AM	199	77	5.6	99	< 0.1
PNR-23	5/25/2005 1:00:00 PM	126	56	3.5	62	< 0.1

Table 3
BTEX and TPH Analyses
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Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-23	8/17/2005 3:20:00 PM	114	42	4.2	44	2.8
PNR-23	11/16/2005 12:15:00 PM	121	2.6	41	31	0.2
PNR-23	2/9/2006 4:00:00 PM	100	3.4	31	14	< 0.1
PNR-23	5/25/2006 11:15:00 AM	83	1.7	16	5.9	< 0.1
PNR-23	8/24/2006 10:18:00 AM	101	1.6	7.7	2.1	0.4
PNR-23	12/8/2006 10:10:00 AM	88	1.7	4.7	1.7	< 0.1
PNR-23	3/14/2007 3:00:00 PM	74	1.5	4.5	1.7	< 0.1
PNR-23	10/5/2007 12:30:00 PM	53	< 0.5	2.7	< 0.5	< 0.1
PNR-24	8/14/2001 12:00:00 PM	195	320	66	198	74.6
PNR-24	8/14/2001 6:20:00 PM	346	594	123	344	970
PNR-24	11/8/2001 1:40:00 PM	422	601	102	316	49.7
PNR-24	2/21/2002 1:55:00 PM	569	974	198	623	110
PNR-24	5/23/2002 11:50:00 AM	294	633	117	455	29
PNR-24	8/21/2002 1:10:00 PM	321	653	110	392	360
PNR-24	11/6/2002 12:32:00 PM	292	543	77	286	170
PNR-24	3/5/2003 11:40:00 AM	358	783	131	472	160
PNR-24	5/28/2003 2:50:00 PM	150	290	65	257	36
PNR-24	8/14/2003 1:08:00 PM	149	347	72	283	53
PNR-24	11/6/2003 11:00:00 AM	234	501	78	296	84
PNR-24	3/17/2004 12:10:00 PM	125	265	57	204	44
PNR-24	6/9/2004 2:20:00 PM	157	343	60	233	82
PNR-24	9/15/2004 6:05:00 PM	170	109	484	349	130
PNR-24	11/18/2004 11:05:00 AM	128	88	317	271	97
PNR-24	3/2/2005 1:25:00 PM	88	51	85	80	76
PNR-24	5/25/2005 1:45:00 PM	50	42	76	59	47
PNR-24	8/17/2005 4:05:00 PM	28	39	68	61	180
PNR-24	11/16/2005 4:15:00 PM	18	137	43	70	450
PNR-24	2/8/2006 1:30:00 PM	7.7	92	54	107	28
PNR-24	5/24/2006 12:55:00 PM	2.1	42	26	65	26
PNR-24	8/24/2006 11:22:00 AM	3.7	31	30	61	43
PNR-24	12/8/2006 10:50:00 AM	2.8	54	66	104	28
PNR-24	3/14/2007 3:40:00 PM	1.8	26	46	74	3
PNR-25	8/14/2001 1:15:00 PM	164	161	18	156 D	93.1
PNR-25	8/14/2001 7:05:00 PM	216	224	32	266	156
PNR-25	11/8/2001 10:15:00 AM	229	219	22	237	0.1
PNR-25	2/21/2002 3:30:00 PM	225	541	121	495	75
PNR-25	5/22/2002 4:50:00 PM	147	497	104	624	100
PNR-25	8/21/2002 2:40:00 PM	6.2	48	7.8	233	500
PNR-25	11/6/2002 2:55:00 PM	1.7	2.1	2.2	337	390
PNR-25	3/5/2003 12:45:00 PM	2.7	9.2	12	286	140
PNR-25	5/28/2003 3:25:00 PM	2.7	20	36	260	58
PNR-25	8/14/2003 10:00:00 AM	2.2	12	24	152	96
PNR-25	11/5/2003 3:15:00 PM	3.5	9.2	30	184	41
PNR-25	3/17/2004 2:15:00 PM	1.3	13	79	212	130
PNR-25	6/8/2004 1:00:00 PM	1.2	18	98	252	81
PNR-25	9/15/2004 4:45:00 PM	2.3	80	8.1	203	160
PNR-25	11/18/2004 9:00:00 AM	1.4	84	6.2	210	75
PNR-25	3/2/2005 1:00:00 PM	5.5	133	20	295	80
PNR-25	5/25/2005 11:15:00 AM	2.6	82	14	205	21
PNR-25	8/17/2005 6:20:00 PM	1	28	6.3	65	21
PNR-25	11/16/2005 1:25:00 PM	3.2	37	259	564	660
PNR-25	2/8/2006 11:15:00 AM	< 5	36	193	495	210
PNR-25	5/24/2006 11:45:00 AM	4	63	163	339	370
PNR-25	8/24/2006 12:00:00 PM	7.9	104	249	472	900
PNR-25	12/8/2006 11:30:00 AM	8.9	97	191	346	510
PNR-25	3/15/2007 10:53:00 AM	11	125	269	707	300
PNR-26	8/14/2001 6:00:00 PM	124	270	80	232	2490
PNR-26	8/22/2001 10:00:00 AM	188	404	105	336	55.4
PNR-26	11/8/2001 2:15:00 PM	365	1920	908	2590	1160
PNR-26	2/21/2002 4:00:00 PM	514	1140	225	636	76

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Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-26	5/23/2002 11:15:00 AM	365	998	200	610	150
PNR-26	8/21/2002 4:00:00 PM	328	632	116	377	220
PNR-26	11/6/2002 4:20:00 PM	398	685	91	335	66
PNR-26	3/5/2003 2:00:00 PM	333	1090	237	884	400
PNR-26	5/28/2003 4:35:00 PM	447	912	179	666	80
PNR-26	8/14/2003 10:45:00 AM	319	946	206	725	250
PNR-26	11/6/2003 12:30:00 PM	462	1270	256	845	32
PNR-26	3/17/2004 2:15:00 PM	364	1030	200	670	46
PNR-26	6/9/2004 4:00:00 PM	450	1260	211	703	16
PNR-26	9/16/2004 9:50:00 AM	278	177	946	576	250
PNR-26	11/18/2004 12:25:00 PM	282	224	915	810	59
PNR-26	3/2/2005 4:10:00 PM	435	300	1290	946	270
PNR-26	5/25/2005 3:15:00 PM	264	339	1140	1250	78
PNR-26	8/17/2005 6:00:00 PM	292	223	1030	857	540
PNR-26	11/16/2005 2:55:00 PM	427	1550	458	1710	410
PNR-26	2/8/2006 3:10:00 PM	326	1170	278	991	220
PNR-27	8/21/2001 3:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	9/5/2001 3:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/6/2001 3:30:00 PM	< 0.5	< 0.5	< 0.5	< 1	0.4
PNR-27	2/20/2002 5:02:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	1
PNR-27	5/21/2002 6:12:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/20/2002 7:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/6/2002 9:55:00 AM	0.49 J	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/5/2003 11:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	5/28/2003 11:00:00 AM	0.42	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/13/2003 1:35:00 PM	0.81	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/5/2003 11:45:00 AM	0.66	1	< 0.5	< 0.5	< 0.1
PNR-27	6/8/2004 11:50:00 AM	1.3	0.43	< 0.5	0.57	< 0.1
PNR-27	9/14/2004 1:05:00 PM	1.2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/17/2004 10:38:00 AM	1.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/1/2005 3:33:00 PM	1.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	5/24/2005 3:33:00 PM	1.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/16/2005 5:08:00 PM	1.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	11/15/2005 4:35:00 PM	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	2/8/2006 5:10:00 PM	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	5/23/2006 4:57:00 PM	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	8/23/2006 3:01:00 PM	1.6	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	12/7/2006 2:15:00 PM	2	< 0.5	< 0.5	< 0.5	< 0.1
PNR-27	3/14/2007 4:50:00 PM	2.1	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR-27	10/3/2007 12:50:00 PM	1.7	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/21/2001 4:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	9/5/2001 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/6/2001 2:40:00 PM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
PNR-28	2/20/2002 4:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	1.2
PNR-28	5/21/2002 5:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/20/2002 6:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/5/2002 1:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/5/2003 10:25:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	5/28/2003 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/13/2003 1:00:00 PM	0.51	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/5/2003 2:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	6/8/2004 11:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	9/15/2004 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/17/2004 9:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/1/2005 2:39:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	5/25/2005 11:07:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/16/2005 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	11/15/2005 11:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	2/8/2006 2:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	5/23/2006 1:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	8/23/2006 12:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
PNR-28	12/6/2006 4:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	3/13/2007 6:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-28	10/4/2007 4:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/21/2001 5:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	9/5/2001 2:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/6/2001 12:50:00 PM	< 0.5	0.69	< 0.5	< 1	< 0.1
PNR-29	2/20/2002 1:03:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/21/2002 4:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/20/2002 11:20:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/5/2002 12:42:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	3/5/2003 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/28/2003 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/13/2003 1:08:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/4/2003 4:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	6/8/2004 10:45:00 AM	< 0.5	0.59	< 0.5	0.53	< 0.1
PNR-29	9/15/2004 9:40:00 AM	< 0.5	< 0.5	0.52	< 0.5	< 0.1
PNR-29	11/17/2004 9:31:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	3/1/2005 1:36:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/25/2005 9:46:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/16/2005 2:48:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	11/15/2005 10:50:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	2/8/2006 4:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	5/23/2006 2:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	8/23/2006 11:37:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	12/6/2006 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	3/13/2007 5:50:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-29	10/2/2007 6:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-33-06	12/6/2006 11:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-33-06	3/13/2007 1:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-33-06	10/3/2007 3:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-34-07	3/14/2007 1:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR-34-07	10/5/2007 3:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-35-07	3/13/2007 11:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
PNR-35-07	10/2/2007 4:05:00 PM	< 0.5	0.63	< 0.5	< 0.5	< 0.1
PNR-36-07	3/13/2007 11:40:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
PNR-36-07	10/3/2007 2:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	6/1/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
USGS 92-12	8/7/2001 11:35:00 AM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
USGS 92-12	8/15/2001 2:40:00 PM	< 0.5	0.36 J	< 0.5	0.29 J	0.7
USGS 92-12	11/6/2001 2:30:00 PM	< 0.5	< 0.5 J	< 0.5	< 1	2.9
USGS 92-12	2/20/2002 2:25:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	5/21/2002 2:05:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	8/19/2002 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	11/5/2002 12:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	3/4/2003 11:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	5/13/2003 2:15:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	8/13/2003 7:48:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	11/5/2003 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	6/8/2004 9:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	9/14/2004 11:08:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	11/16/2004 9:20:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	3/1/2005 12:40:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	5/24/2005 10:43:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	8/17/2005 9:10:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	11/15/2005 2:41:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	2/7/2006 3:32:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	5/24/2006 10:55:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l
USGS 92-12	8/22/2006 11:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	12/6/2006 10:30:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 92-12	3/13/2007 12:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
USGS 92-12	10/2/2007 5:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	6/1/2000 12:00:00 AM	4.4	< 0.5	< 0.5	< 0.5	NA
USGS 93-3	8/7/2001 6:55:00 PM	3	< 0.5	< 0.5	< 1	< 0.1
USGS 93-3	8/15/2001 7:10:00 PM	3.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	11/7/2001 10:05:00 AM	3	< 0.5	< 0.5	< 1 J	0.3
USGS 93-3	2/20/2002 9:00:00 AM	2.7	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	5/22/2002 9:30:00 AM	2.5	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	8/20/2002 4:25:00 PM	3	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	11/5/2002 4:10:00 PM	3.8	0.49 J	< 0.5	< 0.5	< 0.1
USGS 93-3	3/4/2003 3:45:00 PM	3.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	5/28/2003 1:15:00 PM	2.9	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	8/14/2003 2:08:00 PM	2.6	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	11/4/2003 4:45:00 PM	2.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	6/8/2004 7:05:00 PM	3.1	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	9/14/2004 4:25:00 PM	2.1	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	11/17/2004 12:15:00 PM	2.3	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	3/2/2005 11:05:00 AM	2	< 0.5	< 0.5	< 0.5	1.1
USGS 93-3	5/25/2005 3:52:00 PM	2.1	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	8/17/2005 12:55:00 PM	1.9	1.9	< 0.5	< 0.5	< 0.1
USGS 93-3	11/16/2005 4:40:00 PM	1.9	< 0.5	1.9	< 0.5	0.8
USGS 93-3	2/9/2006 3:20:00 PM	1.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	5/24/2006 6:20:00 PM	1.6	0.48 J	< 0.5	< 0.5	< 0.1
USGS 93-3	8/23/2006 2:50:00 PM	1.7	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	12/7/2006 12:05:00 PM	1.7	< 0.5	< 0.5	< 0.5	< 0.1
USGS 93-3	3/15/2007 1:30:00 PM	1.9	< 0.5	< 0.5	< 0.5	< 0.1 H
USGS 93-3	10/3/2007 11:50:00 AM	1.4	< 0.5	< 0.5	< 0.5	< 0.1
USGS-06-7	10/4/2007 5:50:00 PM	< 0.5	< 0.5	0.75	< 0.5	< 0.1
Whitmer	5/31/2000 12:00:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	NA
Whitmer	8/10/2001 10:00:00 AM	< 0.5	< 0.5	< 0.5	< 1	< 0.1
Whitmer	8/22/2001 3:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/9/2001 10:20:00 AM	< 0.5	< 0.5	< 0.5	< 1	NA
Whitmer	2/22/2002 2:45:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/22/2002 4:35:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/21/2002 9:35:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/5/2002 2:20:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/4/2003 2:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/13/2003 5:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/14/2003 12:10:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/4/2003 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/18/2004 1:05:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	6/9/2004 8:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	9/16/2004 11:20:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/18/2004 4:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/2/2005 4:44:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	5/26/2005 10:20:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/16/2005 3:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	11/17/2005 10:25:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	2/9/2006 11:15:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	8/24/2006 11:45:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	12/7/2006 1:30:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer	3/14/2007 4:55:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1 H
Whitmer	10/5/2007 6:00:00 PM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1
Whitmer (city)	5/25/2006 11:21:00 AM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.1

Table 3
BTEX and TPH Analyses
Pioneer Natural Resources USA, Inc. - Biere 1-22 Investigation

Well Name	Date and Time	Benzene µg/L	Toluene µg/l	Ethylbenzene µg/l	Total Xylenes µg/l	Total Petroleum Hydrocarbons mg/l

Accronyms/Abbreviations

mg/L	milligrams per Liter
µg/L	micrograms per Liter

Data Qualifiers

< #	Analyte not detected; value shown is the laboratory reporting limit.
D	Reporting limit increased due to sample matrix interference.
H	Analysis performed past recommended holding time.
J	Estimated value. Analyte present, but less than the limit of quantitation.
NA	not analyzed

APPENDIX A

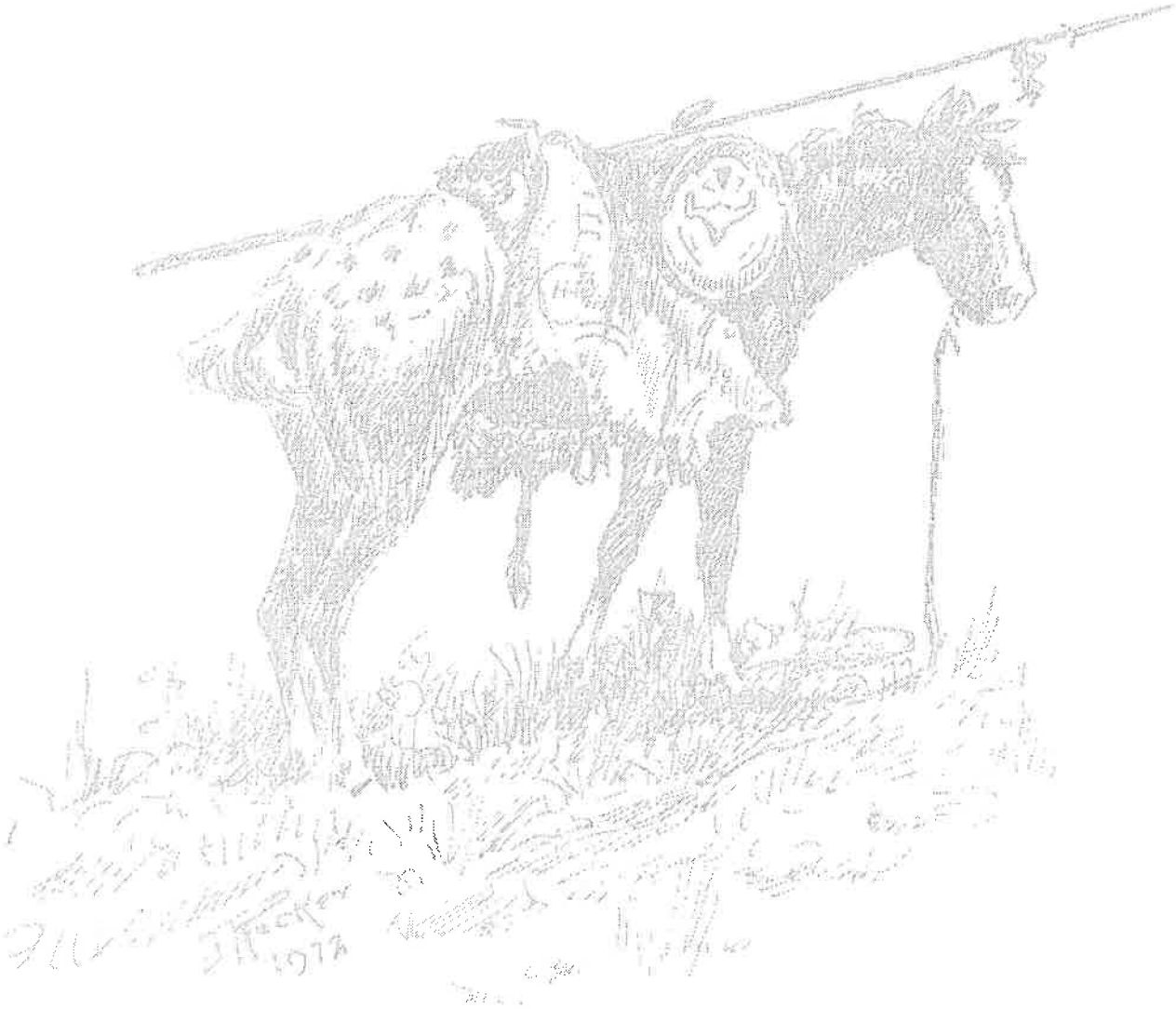
WELL LOCATION MAP

COLOR TV/ FREE HBO
QUEEN SIZE BEDS
IN-ROOM SERVICE
www.shermaninn.com

SHERMAN INN

200 EAST MAIN — DOWNTOWN
WOLF POINT, MONTANA 59201
PHONE 406-653-1100 • RESERVATIONS 1-800-952-1100
FAX 406-653-3456

HOTEL
RESTAURANT
LOUNGE/653-1600
CASINO
CONVENTION/BANQUET FACILITIES



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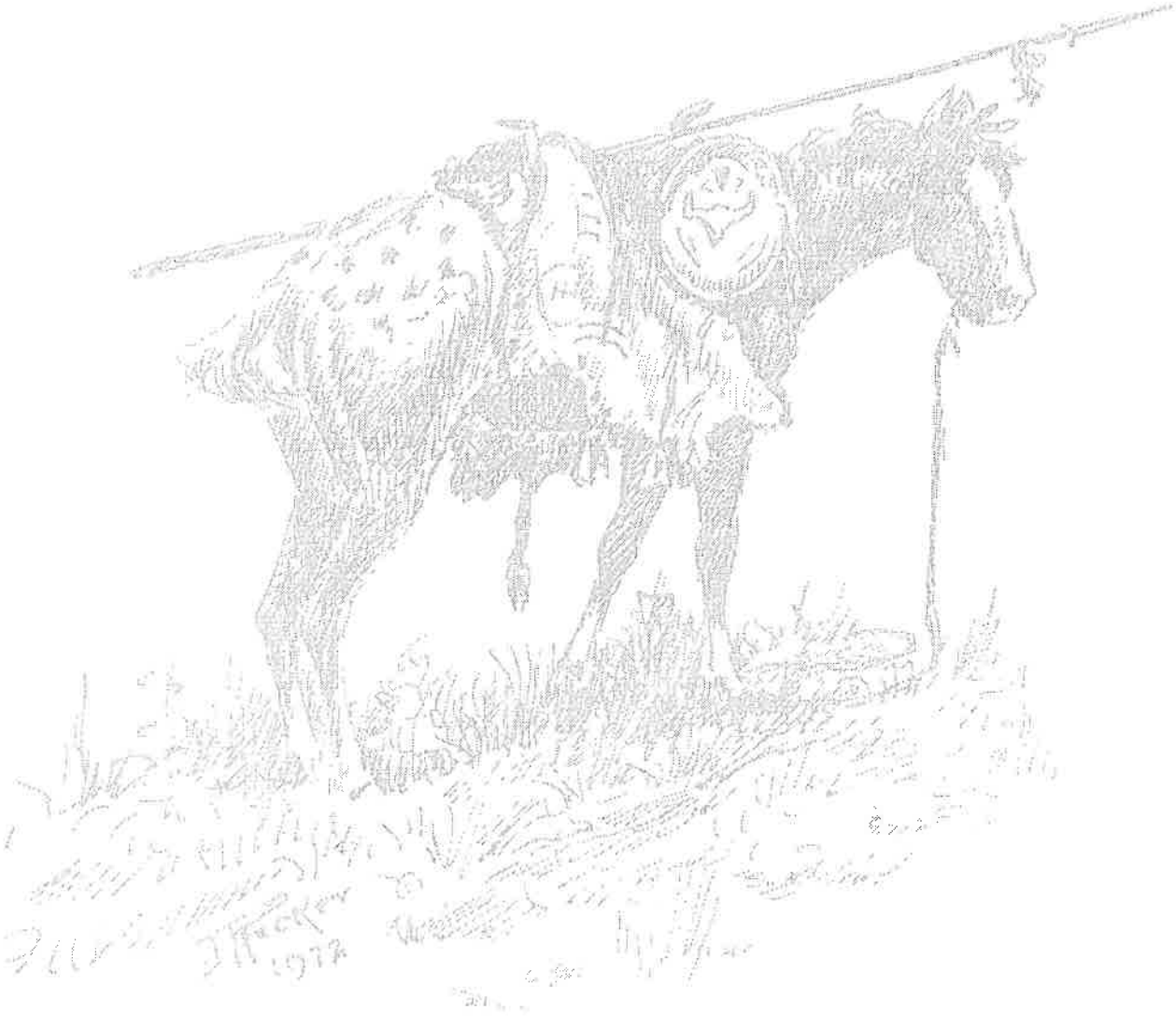

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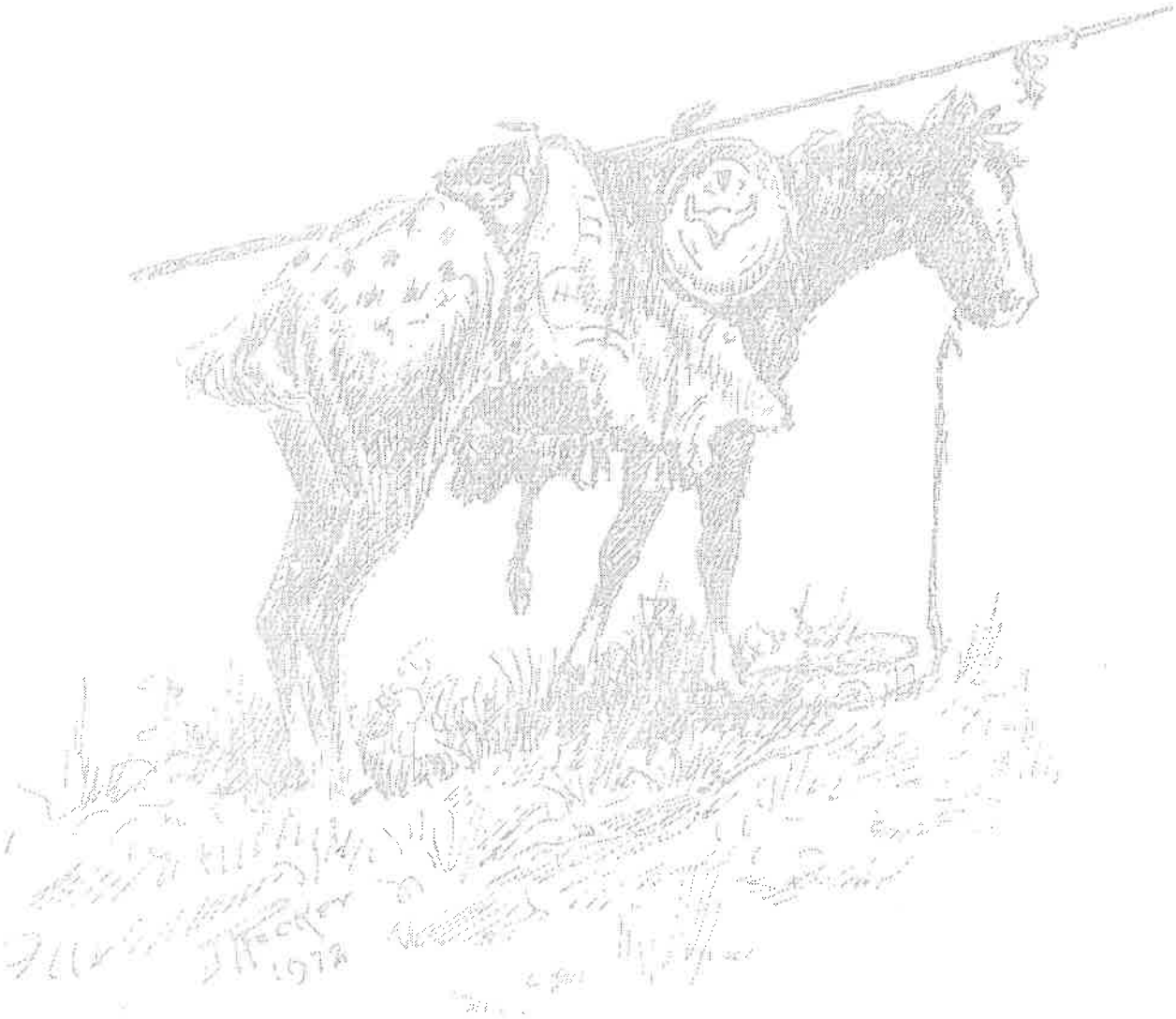
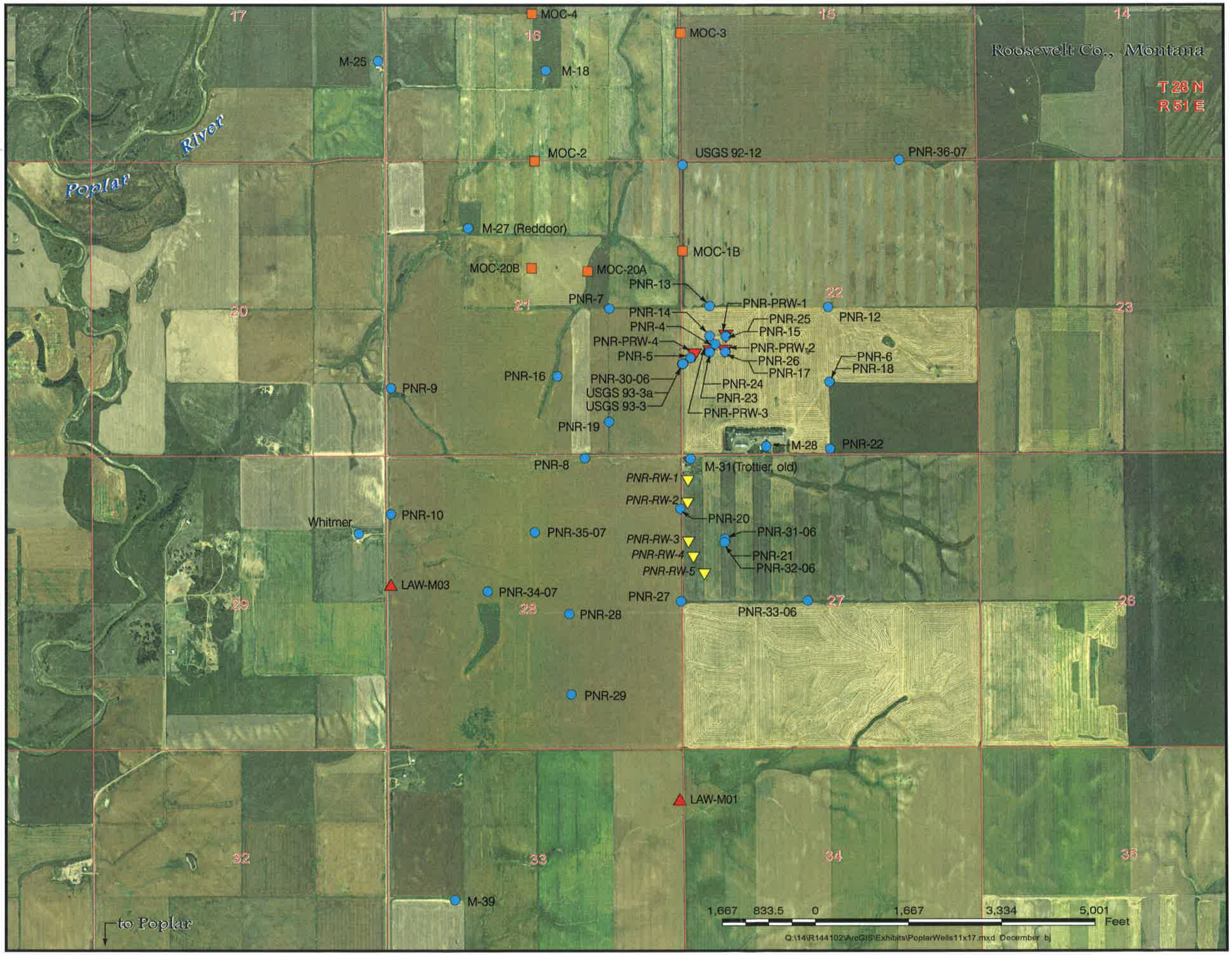
CONVENTION/BANQUET FACILITIES





Well Location Map

Biere 1-22 Well Site

Poplar, Montana

Pioneer
National Resources
USA Inc.

GENERAL LOCATION

LEGEND

- Pioneer Wells
- Pioneer GW Recovery Wells
- Pioneer Product Recovery Wells
- LAW Wells
- MOC Wells

N
W E
S

Basemap:
U.S. Farm Services Agency National Agricultural Imagery Program, 2005 (NAIP), 1-meter resolution

HKM ENGINEERING

APPENDIX B

LABORATORY ANALYTICAL REPORTS

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-031
Client Sample ID: PNR-14

Report Date: 10/25/07
Collection Date: 10/04/07 16:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 19:55 / bjm
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	10/10/07 19:55 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 10:10 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-031
Client Sample ID: PNR-14

Report Date: 10/25/07
Collection Date: 10/04/07 16:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500 H	10/05/07 18:40 / jak
Conductivity	21700	umhos/cm		1		A2510 B	10/05/07 18:29 / jak
Solids, Total Dissolved TDS @ 180 C	13500	mg/L		10		A2540 C	10/08/07 16:31 / qed
INORGANICS							
Alkalinity, Total as CaCO3	673	mg/L		4		A2320 B	10/09/07 23:42 / jak
Bicarbonate as HCO3	821	mg/L		4		A2320 B	10/09/07 23:42 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 23:42 / jak
Chloride	6290	mg/L	D	5		E300.0	10/10/07 19:27 / qed
Sulfate	2100	mg/L	D	5		E300.0	10/10/07 19:27 / qed
Fluoride	0.4	mg/L		0.1		A4500-F C	10/09/07 23:42 / jak
Hardness as CaCO3	2640	mg/L		1		A2340 B	10/09/07 04:59 / car
NUTRIENTS							
Nitrogen, Ammonia as N	3.1	mg/L		0.1		E350.1	10/11/07 12:44 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 12:50 / bls
METALS, DISSOLVED							
Calcium	478	mg/L	D	5		E200.7	10/09/07 04:59 / rlh
Magnesium	351	mg/L	D	3		E200.7	10/09/07 04:59 / rlh
Potassium	76	mg/L	D	2		E200.7	10/09/07 04:59 / rlh
Silica	30	mg/L	D	2		E200.7	10/09/07 04:59 / rlh
Sodium	3560	mg/L	D	5		E200.7	10/09/07 04:59 / rlh
METALS, TOTAL							
Silica	35	mg/L	D	2		E200.7	10/08/07 17:42 / rlh
QUALITY CONTROL							
A/C Balance Sigma	6.57					Calculation	10/24/07 13:01 / car
Anions	234	meq/L		0.01		Calculation	10/24/07 13:01 / car
Cations	210	meq/L		0.01		Calculation	10/24/07 13:01 / car
A/C Balance	-5.53	%				Calculation	10/24/07 13:01 / car
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 19:55 / bjm
Benzene	0.54	ug/L		0.50		SW8021B	10/10/07 19:55 / bjm
Toluene	0.64	ug/L		0.50		SW8021B	10/10/07 19:55 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 19:55 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 19:55 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 19:55 / bjm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-030
Client Sample ID: USGS-06-7

Report Date: 10/25/07
Collection Date: 10/04/07 17:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 18:41 / bjm
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 18:41 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 10:00 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-030
Client Sample ID: USGS-06-7

Report Date: 10/25/07
Collection Date: 10/04/07 17:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500 H	10/05/07 18:39 / jak
Conductivity	1270	umhos/cm		1		A2510 B	10/05/07 18:28 / jak
Solids, Total Dissolved TDS @ 180 C	748	mg/L		10		A2540 C	10/08/07 16:30 / qed
INORGANICS							
Alkalinity, Total as CaCO3	441	mg/L		4		A2320 B	10/09/07 23:13 / jak
Bicarbonate as HCO3	530	mg/L		4		A2320 B	10/09/07 23:13 / jak
Carbonate as CO3	4	mg/L		4		A2320 B	10/09/07 23:13 / jak
Chloride	13	mg/L		1		E300.0	10/10/07 19:15 / qed
Sulfate	172	mg/L		1		E300.0	10/10/07 19:15 / qed
Fluoride	0.4	mg/L		0.1		A4500-F C	10/09/07 23:13 / jak
Hardness as CaCO3	90	mg/L		1		A2340 B	10/09/07 11:31 / klc
- At the time the Alkalinity was analyzed, the pH was 8.3 s.u.							
NUTRIENTS							
Nitrogen, Ammonia as N	0.6	mg/L		0.1		E350.1	10/11/07 14:32 / bls
Nitrogen, Nitrate+Nitrite as N	2.65	mg/L		0.05		E353.2	10/12/07 12:49 / bls
METALS, DISSOLVED							
Calcium	20	mg/L		1		E200.7	10/09/07 04:55 / rlh
Magnesium	10	mg/L		1		E200.7	10/09/07 04:55 / rlh
Potassium	3	mg/L		1		E200.7	10/09/07 04:55 / rlh
Silica	15.8	mg/L		0.2		E200.7	10/09/07 04:55 / rlh
Sodium	240	mg/L		1		E200.7	10/09/07 04:55 / rlh
METALS, TOTAL							
Silica	17.1	mg/L		0.2		E200.7	10/08/07 17:38 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.56					Calculation	10/11/07 12:06 / klc
Anions	12.8	meq/L		0.01		Calculation	10/11/07 12:06 / klc
Cations	12.3	meq/L		0.01		Calculation	10/11/07 12:06 / klc
A/C Balance	-1.89	%				Calculation	10/11/07 12:06 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 18:41 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 18:41 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 18:41 / bjm
Ethylbenzene	0.75	ug/L		0.50		SW8021B	10/10/07 18:41 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 18:41 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 18:41 / bjm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-029
Client Sample ID: PNR-8

Report Date: 10/25/07
Collection Date: 10/04/07 14:35
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	96.0	%REC		80-120		SW8021B	10/10/07 17:28 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 09:50 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-029
Client Sample ID: PNR-8

Report Date: 10/25/07
Collection Date: 10/04/07 14:35
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500 H	10/05/07 18:38 / jak
Conductivity	8450	umhos/cm		1		A2510 B	10/05/07 18:27 / jak
Solids, Total Dissolved TDS @ 180 C	5370	mg/L		10		A2540 C	10/08/07 16:28 / qed
INORGANICS							
Alkalinity, Total as CaCO3	423	mg/L		4		A2320 B	10/09/07 23:04 / jak
Bicarbonate as HCO3	517	mg/L		4		A2320 B	10/09/07 23:04 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 23:04 / jak
Chloride	1970	mg/L	D	2		E300.0	10/10/07 19:04 / qed
Sulfate	1200	mg/L	D	2		E300.0	10/10/07 19:04 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/09/07 23:04 / jak
Hardness as CaCO3	2570	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	10/11/07 14:31 / bls
Nitrogen, Nitrate+Nitrite as N	0.36	mg/L		0.05		E353.2	10/12/07 12:47 / bls
METALS, DISSOLVED							
Calcium	461	mg/L	D	2		E200.7	10/09/07 04:51 / rlh
Magnesium	345	mg/L		1		E200.7	10/09/07 04:51 / rlh
Potassium	15	mg/L		1		E200.7	10/09/07 04:51 / rlh
Silica	23.0	mg/L	D	0.9		E200.7	10/09/07 04:51 / rlh
Sodium	810	mg/L	D	2		E200.7	10/09/07 04:51 / rlh
METALS, TOTAL							
Silica	40.6	mg/L	D	0.9		E200.7	10/09/07 09:12 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.37					Calculation	10/11/07 12:06 / klc
Anions	89.0	meq/L		0.01		Calculation	10/11/07 12:06 / klc
Cations	87.0	meq/L		0.01		Calculation	10/11/07 12:06 / klc
A/C Balance	-1.15	%				Calculation	10/11/07 12:06 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 17:28 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 17:28 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 17:28 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 17:28 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 17:28 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 17:28 / bjm
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 17:28 / bjm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-028
Client Sample ID: M-27

Report Date: 10/25/07
Collection Date: 10/04/07 12:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 00:33 / bjm
Surr: Trifluorotoluene	90.0	%REC		80-120		SW8021B	10/10/07 00:33 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 09:40 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-028
Client Sample ID: M-27

Report Date: 10/25/07
Collection Date: 10/04/07 12:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.6	s.u.		0.1		A4500 H	10/05/07 18:38 / jak
Conductivity	19800	umhos/cm		1		A2510 B	10/05/07 18:27 / jak
Solids, Total Dissolved TDS @ 180 C	13100	mg/L		10		A2540 C	10/08/07 16:26 / qed
INORGANICS							
Alkalinity, Total as CaCO3	33	mg/L		4		A2320 B	10/09/07 22:55 / jak
Bicarbonate as HCO3	40	mg/L		4		A2320 B	10/09/07 22:55 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 22:55 / jak
Chloride	6520	mg/L	D	5		E300.0	10/10/07 18:52 / qed
Sulfate	1070	mg/L	D	5		E300.0	10/13/07 02:43 / qed
Fluoride	ND	mg/L		0.1		A4500-F C	10/09/07 22:55 / jak
Hardness as CaCO3	4570	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	3.3	mg/L		0.1		E350.1	10/11/07 14:30 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 12:46 / bls
METALS, DISSOLVED							
Calcium	912	mg/L	D	4		E200.7	10/09/07 04:40 / rlh
Magnesium	557	mg/L	D	3		E200.7	10/09/07 04:40 / rlh
Potassium	23	mg/L		1		E200.7	10/09/07 04:40 / rlh
Silica	12	mg/L	D	2		E200.7	10/09/07 04:40 / rlh
Sodium	2260	mg/L	D	4		E200.7	10/09/07 04:40 / rlh
METALS, TOTAL							
Silica	13	mg/L	D	2		E200.7	10/09/07 09:08 / rlh
QUALITY CONTROL							
A/C Balance Sigma	4.99					Calculation	10/18/07 14:21 / klc
Anions	207	meq/L		0.01		Calculation	10/18/07 14:21 / klc
Cations	190	meq/L		0.01		Calculation	10/18/07 14:21 / klc
A/C Balance	-4.16	%				Calculation	10/18/07 14:21 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 00:33 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 00:33 / bjm
Toluene	0.46	ug/L	J	0.50		SW8021B	10/10/07 00:33 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 00:33 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 00:33 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 00:33 / bjm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-027
Client Sample ID: PNR-9

Report Date: 10/25/07
Collection Date: 10/04/07 10:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	86.0	%REC		80-120		SW8021B	10/09/07 23:19 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 09:20 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-027
Client Sample ID: PNR-9

Report Date: 10/25/07
Collection Date: 10/04/07 10:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500 H	10/05/07 18:37 / jak
Conductivity	16200	umhos/cm		1		A2510 B	10/05/07 18:26 / jak
Solids, Total Dissolved TDS @ 180 C	11300	mg/L		10		A2540 C	10/08/07 16:19 / qed
INORGANICS							
Alkalinity, Total as CaCO3	248	mg/L		4		A2320 B	10/09/07 22:48 / jak
Bicarbonate as HCO3	303	mg/L		4		A2320 B	10/09/07 22:48 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 22:48 / jak
Chloride	5200	mg/L	D	5		E300.0	10/10/07 18:41 / qed
Sulfate	889	mg/L	D	5		E300.0	10/10/07 18:41 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 22:48 / jak
Hardness as CaCO3	4510	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	3.0	mg/L		0.1		E350.1	10/11/07 14:29 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:52 / bls
METALS, DISSOLVED							
Calcium	919	mg/L	D	4		E200.7	10/09/07 04:36 / rlh
Magnesium	539	mg/L	D	3		E200.7	10/09/07 04:36 / rlh
Potassium	21	mg/L		1		E200.7	10/09/07 04:36 / rlh
Silica	17	mg/L	D	2		E200.7	10/09/07 04:36 / rlh
Sodium	1670	mg/L	D	4		E200.7	10/09/07 04:36 / rlh
METALS, TOTAL							
Silica	51	mg/L	D	2		E200.7	10/09/07 09:04 / rlh
QUALITY CONTROL							
A/C Balance Sigma	2.38					Calculation	10/11/07 12:06 / klc
Anions	170	meq/L		0.01		Calculation	10/11/07 12:06 / klc
Cations	164	meq/L		0.01		Calculation	10/11/07 12:06 / klc
A/C Balance	-1.95	%				Calculation	10/11/07 12:06 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 23:19 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 23:19 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 23:19 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 23:19 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 23:19 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 23:19 / bjm
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 23:19 / bjm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-026
Client Sample ID: PNR-22

Report Date: 10/25/07
Collection Date: 10/03/07 16:45
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	90.0	%REC		80-120		SW8021B	10/09/07 22:06 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 09:10 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-026
Client Sample ID: PNR-22

Report Date: 10/25/07
Collection Date: 10/03/07 16:45
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500 H	10/05/07 18:36 / jak
Conductivity	5810	umhos/cm		1		A2510 B	10/05/07 18:25 / jak
Solids, Total Dissolved TDS @ 180 C	3780	mg/L		10		A2540 C	10/08/07 15:46 / qed
INORGANICS							
Alkalinity, Total as CaCO3	712	mg/L		4		A2320 B	10/09/07 22:40 / jak
Bicarbonate as HCO3	869	mg/L		4		A2320 B	10/09/07 22:40 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 22:40 / jak
Chloride	994	mg/L		1		E300.0	10/10/07 18:29 / qed
Sulfate	982	mg/L		1		E300.0	10/10/07 18:29 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 22:40 / jak
Hardness as CaCO3	1850	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	6.6	mg/L		0.1		E350.1	10/11/07 13:26 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:50 / bls
METALS, DISSOLVED							
Calcium	301	mg/L	D	2		E200.7	10/09/07 04:32 / rlh
Magnesium	267	mg/L		1		E200.7	10/09/07 04:32 / rlh
Potassium	9	mg/L		1		E200.7	10/09/07 04:32 / rlh
Silica	29.3	mg/L	D	0.9		E200.7	10/09/07 04:32 / rlh
Sodium	505	mg/L	D	2		E200.7	10/09/07 04:32 / rlh
METALS, TOTAL							
Silica	31.7	mg/L	D	0.9		E200.7	10/09/07 09:00 / rlh
QUALITY CONTROL							
A/C Balance Sigma	3.32					Calculation	10/11/07 12:06 / klc
Anions	62.7	meq/L		0.01		Calculation	10/11/07 12:06 / klc
Cations	59.1	meq/L		0.01		Calculation	10/11/07 12:06 / klc
A/C Balance	-2.94	%				Calculation	10/11/07 12:06 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 22:06 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 22:06 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 22:06 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 22:06 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 22:06 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 22:06 / bjm
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 22:06 / bjm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-025
Client Sample ID: PNR-33-06

Report Date: 10/25/07
Collection Date: 10/03/07 15:35
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	10/11/07 14:00 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 09:00 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-025
Client Sample ID: PNR-33-06

Report Date: 10/25/07
Collection Date: 10/03/07 15:35
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500 H	10/05/07 18:35 / jak
Conductivity	5020	umhos/cm		1		A2510 B	10/05/07 18:25 / jak
Solids, Total Dissolved TDS @ 180 C	4480	mg/L		10		A2540 C	10/08/07 15:26 / qed
INORGANICS							
Alkalinity, Total as CaCO3	396	mg/L		4		A2320 B	10/09/07 22:18 / jak
Bicarbonate as HCO3	483	mg/L		4		A2320 B	10/09/07 22:18 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 22:18 / jak
Chloride	104	mg/L		1		E300.0	10/10/07 18:17 / qed
Sulfate	2510	mg/L		1		E300.0	10/10/07 18:17 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/09/07 22:18 / jak
Hardness as CaCO3	2600	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.1	mg/L		0.1		E350.1	10/11/07 13:25 / bls
Nitrogen, Nitrate+Nitrite as N	43.6	mg/L		0.05		E353.2	10/12/07 11:49 / bls
METALS, DISSOLVED							
Calcium	483	mg/L	D	2		E200.7	10/09/07 04:29 / rlh
Magnesium	340	mg/L		1		E200.7	10/09/07 04:29 / rlh
Potassium	16	mg/L		1		E200.7	10/09/07 04:29 / rlh
Silica	24.8	mg/L	D	0.9		E200.7	10/09/07 04:29 / rlh
Sodium	276	mg/L	D	2		E200.7	10/09/07 04:29 / rlh
METALS, TOTAL							
Silica	27.3	mg/L	D	0.9		E200.7	10/09/07 08:56 / rlh
QUALITY CONTROL							
A/C Balance Sigma	-0.91					Calculation	10/11/07 12:06 / klc
Anions	63.5	meq/L		0.01		Calculation	10/11/07 12:06 / klc
Cations	64.5	meq/L		0.01		Calculation	10/11/07 12:06 / klc
A/C Balance	0.78	%				Calculation	10/11/07 12:06 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/11/07 14:00 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/11/07 14:00 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/11/07 14:00 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/11/07 14:00 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/11/07 14:00 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/11/07 14:00 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/11/07 14:00 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-024
Client Sample ID: PNR-12

Report Date: 10/25/07
Collection Date: 10/03/07 13:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	91.0	%REC		80-120		SW8021B	10/10/07 18:36 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 08:50 / bdw

Report Definitions:
RL - Analyte reporting limit.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-024
Client Sample ID: PNR-12

Report Date: 10/25/07
Collection Date: 10/03/07 13:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.3	s.u.		0.1		A4500 H	10/05/07 18:35 / jak
Conductivity	5210	umhos/cm		1		A2510 B	10/05/07 18:24 / jak
Solids, Total Dissolved TDS @ 180 C	4450	mg/L		10		A2540 C	10/05/07 18:43 / qed
INORGANICS							
Alkalinity, Total as CaCO3	587	mg/L		4		A2320 B	10/09/07 22:10 / jak
Bicarbonate as HCO3	716	mg/L		4		A2320 B	10/09/07 22:10 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 22:10 / jak
Chloride	63	mg/L		1		E300.0	10/11/07 14:03 / qed
Sulfate	2060	mg/L		1		E300.0	10/10/07 17:43 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 22:10 / jak
Hardness as CaCO3	2460	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 13:24 / bls
Nitrogen, Nitrate+Nitrite as N	144	mg/L	D	0.2		E353.2	10/12/07 11:48 / bls
METALS, DISSOLVED							
Calcium	409	mg/L	D	2		E200.7	10/09/07 04:25 / rlh
Magnesium	349	mg/L		1		E200.7	10/09/07 04:25 / rlh
Potassium	8	mg/L		1		E200.7	10/09/07 04:25 / rlh
Silica	22.0	mg/L	D	0.9		E200.7	10/09/07 04:25 / rlh
Sodium	321	mg/L	D	2		E200.7	10/09/07 04:25 / rlh
METALS, TOTAL							
Silica	45.3	mg/L	D	0.9		E200.7	10/09/07 08:53 / rlh
QUALITY CONTROL							
A/C Balance Sigma	2.95					Calculation	10/15/07 10:18 / klc
Anions	66.6	meq/L		0.01		Calculation	10/15/07 10:18 / klc
Cations	63.3	meq/L		0.01		Calculation	10/15/07 10:18 / klc
A/C Balance	-2.59	%				Calculation	10/15/07 10:18 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 18:36 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 18:36 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 18:36 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 18:36 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 18:36 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 18:36 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 18:36 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-023
Client Sample ID: PNR-16

Report Date: 10/25/07
Collection Date: 10/03/07 10:55
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 18:02 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 08:40 / bdw

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-023
Client Sample ID: PNR-16

Report Date: 10/25/07
Collection Date: 10/03/07 10:55
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 18:33 / jak
Conductivity	5550	umhos/cm		1		A2510 B	10/05/07 18:23 / jak
Solids, Total Dissolved TDS @ 180 C	5030	mg/L		10		A2540 C	10/05/07 18:41 / qed
INORGANICS							
Alkalinity, Total as CaCO3	445	mg/L		4		A2320 B	10/09/07 21:55 / jak
Bicarbonate as HCO3	543	mg/L		4		A2320 B	10/09/07 21:55 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 21:55 / jak
Chloride	18	mg/L		1		E300.0	10/11/07 13:51 / qed
Sulfate	3150	mg/L		1		E300.0	10/10/07 17:08 / qed
Fluoride	0.4	mg/L		0.1		A4500-F C	10/09/07 21:55 / jak
Hardness as CaCO3	2950	mg/L		1		A2340 B	10/19/07 15:15 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.8	mg/L		0.1		E350.1	10/11/07 13:23 / bls
Nitrogen, Nitrate+Nitrite as N	15.1	mg/L		0.05		E353.2	10/12/07 11:47 / bls
METALS, DISSOLVED							
Calcium	453	mg/L	D	2		E200.7	10/19/07 15:15 / rlh
Magnesium	443	mg/L		1		E200.7	10/19/07 15:15 / rlh
Potassium	24	mg/L		1		E200.7	10/19/07 15:15 / rlh
Silica	36.7	mg/L	D	0.9		E200.7	10/19/07 15:15 / rlh
Sodium	403	mg/L	D	2		E200.7	10/19/07 15:15 / rlh
METALS, TOTAL							
Silica	42.4	mg/L	D	0.9		E200.7	10/09/07 08:49 / rlh
QUALITY CONTROL							
A/C Balance Sigma	-0.86					Calculation	10/22/07 10:30 / klc
Anions	76.1	meq/L		0.01		Calculation	10/22/07 10:30 / klc
Cations	77.2	meq/L		0.01		Calculation	10/22/07 10:30 / klc
A/C Balance	0.72	%				Calculation	10/22/07 10:30 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 18:02 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 18:02 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 18:02 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 18:02 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 18:02 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 18:02 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 18:02 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-022
Client Sample ID: PNR-6

Report Date: 10/25/07
Collection Date: 10/02/07 18:55
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 17:27 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 08:30 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-022
Client Sample ID: PNR-6

Report Date: 10/25/07
Collection Date: 10/02/07 18:55
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500 H	10/05/07 18:48 / jak
Conductivity	2190	umhos/cm		1		A2510 B	10/05/07 18:20 / jak
Solids, Total Dissolved TDS @ 180 C	1520	mg/L		10		A2540 C	10/05/07 18:40 / qed
INORGANICS							
Alkalinity, Total as CaCO3	481	mg/L		4		A2320 B	10/09/07 21:46 / jak
Bicarbonate as HCO3	587	mg/L		4		A2320 B	10/09/07 21:46 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 21:46 / jak
Chloride	37	mg/L		1		E300.0	10/10/07 16:56 / qed
Sulfate	701	mg/L		1		E300.0	10/10/07 16:56 / qed
Fluoride	0.5	mg/L		0.1		A4500-F C	10/09/07 21:46 / jak
Hardness as CaCO3	933	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	10/11/07 13:22 / bls
Nitrogen, Nitrate+Nitrite as N	0.66	mg/L		0.05		E353.2	10/12/07 11:40 / bls
METALS, DISSOLVED							
Calcium	130	mg/L		1		E200.7	10/09/07 04:09 / rlh
Magnesium	148	mg/L		1		E200.7	10/09/07 04:09 / rlh
Potassium	6	mg/L		1		E200.7	10/09/07 04:09 / rlh
Silica	24.7	mg/L	D	0.4		E200.7	10/09/07 04:09 / rlh
Sodium	132	mg/L		1		E200.7	10/09/07 04:09 / rlh
METALS, TOTAL							
Silica	36.8	mg/L	D	0.4		E200.7	10/09/07 08:45 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.49					Calculation	10/11/07 12:05 / klc
Anions	25.3	meq/L		0.01		Calculation	10/11/07 12:05 / klc
Cations	24.5	meq/L		0.01		Calculation	10/11/07 12:05 / klc
A/C Balance	-1.49	%				Calculation	10/11/07 12:05 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 17:27 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 17:27 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 17:27 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 17:27 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 17:27 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 17:27 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 17:27 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-021
Client Sample ID: USGS 92-12

Report Date: 10/25/07
Collection Date: 10/02/07 17:10
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	93.0	%REC		80-120		SW8021B	10/10/07 13:57 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 08:20 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-021
Client Sample ID: USGS 92-12

Report Date: 10/25/07
Collection Date: 10/02/07 17:10
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500 H	10/05/07 18:48 / jak
Conductivity	2790	umhos/cm		1		A2510 B	10/05/07 18:20 / jak
Solids, Total Dissolved TDS @ 180 C	2220	mg/L		10		A2540 C	10/05/07 18:38 / qed
INORGANICS							
Alkalinity, Total as CaCO3	380	mg/L		4		A2320 B	10/09/07 21:19 / jak
Bicarbonate as HCO3	464	mg/L		4		A2320 B	10/09/07 21:19 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 21:19 / jak
Chloride	4	mg/L		1		E300.0	10/11/07 13:17 / qed
Sulfate	1240	mg/L		1		E300.0	10/10/07 16:45 / qed
Fluoride	0.5	mg/L		0.1		A4500-F C	10/09/07 21:19 / jak
Hardness as CaCO3	1410	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 13:18 / bls
Nitrogen, Nitrate+Nitrite as N	9.19	mg/L		0.05		E353.2	10/12/07 11:46 / bls
METALS, DISSOLVED							
Calcium	208	mg/L		1		E200.7	10/09/07 04:06 / rlh
Magnesium	215	mg/L		1		E200.7	10/09/07 04:06 / rlh
Potassium	13	mg/L		1		E200.7	10/09/07 04:06 / rlh
Silica	26.9	mg/L	D	0.4		E200.7	10/09/07 04:06 / rlh
Sodium	106	mg/L		1		E200.7	10/09/07 04:06 / rlh
METALS, TOTAL							
Silica	92.1	mg/L	D	0.4		E200.7	10/09/07 08:41 / rlh
QUALITY CONTROL							
A/C Balance Sigma	0.61					Calculation	10/12/07 11:08 / klc
Anions	33.4	meq/L		0.01		Calculation	10/12/07 11:08 / klc
Cations	33.1	meq/L		0.01		Calculation	10/12/07 11:08 / klc
A/C Balance	-0.57	%				Calculation	10/12/07 11:08 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 13:57 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/10/07 13:57 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 13:57 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 13:57 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 13:57 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 13:57 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 13:57 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-020
Client Sample ID: M-31

Report Date: 10/25/07
Collection Date: 10/04/07 14:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 13:22 / bw
Surr: Trifluorotoluene	92.0	%REC		80-120		SW8021B	10/10/07 13:22 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 08:10 / bdw

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-020
Client Sample ID: M-31

Report Date: 10/25/07
Collection Date: 10/04/07 14:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.6	s.u.		0.1		A4500 H	10/05/07 18:48 / jak
Conductivity	99100	umhos/cm		1		A2510 B	10/05/07 18:18 / jak
Solids, Total Dissolved TDS @ 180 C	63300	mg/L		10		A2540 C	10/05/07 18:36 / qed
INORGANICS							
Alkalinity, Total as CaCO3	498	mg/L		4		A2320 B	10/09/07 21:11 / jak
Bicarbonate as HCO3	607	mg/L		4		A2320 B	10/09/07 21:11 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 21:11 / jak
Chloride	40800	mg/L	D	10		E300.0	10/10/07 16:33 / qed
Sulfate	1620	mg/L	D	9		E300.0	10/13/07 02:31 / qed
Fluoride	0.1	mg/L		0.1		A4500-F C	10/09/07 21:11 / jak
Hardness as CaCO3	6160	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	13.2	mg/L		0.1		E350.1	10/11/07 14:28 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:44 / bls
METALS, DISSOLVED							
Calcium	1550	mg/L	D	20		E200.7	10/09/07 04:02 / rlh
Magnesium	558	mg/L	D	10		E200.7	10/09/07 04:02 / rlh
Potassium	239	mg/L	D	7		E200.7	10/09/07 04:02 / rlh
Silica	21	mg/L	D	9		E200.7	10/09/07 04:02 / rlh
Sodium	22300	mg/L	D	20		E200.7	10/09/07 04:02 / rlh
METALS, TOTAL							
Silica	19	mg/L	D	9		E200.7	10/09/07 08:37 / rlh
QUALITY CONTROL							
A/C Balance Sigma	5.21					Calculation	10/17/07 16:01 / klc
Anions	1200	meq/L		0.01		Calculation	10/17/07 16:01 / klc
Cations	1100	meq/L		0.01		Calculation	10/17/07 16:01 / klc
A/C Balance	-4.23	%				Calculation	10/17/07 16:01 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 13:22 / bw
Benzene	30	ug/L		0.50		SW8021B	10/10/07 13:22 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 13:22 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 13:22 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 13:22 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 13:22 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-019
Client Sample ID: PNR-21

Report Date: 10/25/07
Collection Date: 10/04/07 11:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	10/10/07 12:48 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 08:00 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-019
Client Sample ID: PNR-21

Report Date: 10/25/07
Collection Date: 10/04/07 11:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.6	s.u.		0.1		A4500 H	10/05/07 18:47 / jak
Conductivity	64800	umhos/cm		1		A2510 B	10/05/07 18:17 / jak
Solids, Total Dissolved TDS @ 180 C	42000	mg/L		10		A2540 C	10/05/07 18:35 / qed
INORGANICS							
Alkalinity, Total as CaCO3	559	mg/L		4		A2320 B	10/09/07 21:02 / jak
Bicarbonate as HCO3	681	mg/L		4		A2320 B	10/09/07 21:02 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 21:02 / jak
Chloride	25300	mg/L	D	10		E300.0	10/13/07 02:19 / qed
Sulfate	1730	mg/L	D	9		E300.0	10/13/07 02:19 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 21:02 / jak
Hardness as CaCO3	7410	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	3.9	mg/L		0.1		E350.1	10/11/07 14:26 / bls
Nitrogen, Nitrate+Nitrite as N	15.4	mg/L		0.05		E353.2	10/12/07 11:43 / bls
METALS, DISSOLVED							
Calcium	1640	mg/L	D	20		E200.7	10/09/07 03:54 / rlh
Magnesium	804	mg/L	D	10		E200.7	10/09/07 03:54 / rlh
Potassium	62	mg/L	D	7		E200.7	10/09/07 03:54 / rlh
Silica	21	mg/L	D	9		E200.7	10/09/07 03:54 / rlh
Sodium	13100	mg/L	D	20		E200.7	10/09/07 03:54 / rlh
METALS, TOTAL							
Silica	24	mg/L	D	9		E200.7	10/09/07 08:26 / rlh
QUALITY CONTROL							
A/C Balance Sigma	3.30					Calculation	10/17/07 15:59 / klc
Anions	761	meq/L		0.01		Calculation	10/17/07 15:59 / klc
Cations	722	meq/L		0.01		Calculation	10/17/07 15:59 / klc
A/C Balance	-2.65	%				Calculation	10/17/07 15:59 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 12:48 / bw
Benzene	21	ug/L		0.50		SW8021B	10/10/07 12:48 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 12:48 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 12:48 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 12:48 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 12:48 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 12:48 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-018
Client Sample ID: PNR-20

Report Date: 10/25/07
Collection Date: 10/04/07 10:25
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 12:13 / bw
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 12:13 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 07:50 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-018
Client Sample ID: PNR-20

Report Date: 10/25/07
Collection Date: 10/04/07 10:25
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500 H	10/05/07 18:46 / jak
Conductivity	52400	umhos/cm		1		A2510 B	10/05/07 18:15 / jak
Solids, Total Dissolved TDS @ 180 C	33600	mg/L		10		A2540 C	10/05/07 18:33 / qed
INORGANICS							
Alkalinity, Total as CaCO3	442	mg/L		4		A2320 B	10/09/07 20:54 / jak
Bicarbonate as HCO3	539	mg/L		4		A2320 B	10/09/07 20:54 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 20:54 / jak
Chloride	20000	mg/L	D	10		E300.0	10/10/07 16:10 / qed
Sulfate	1610	mg/L	D	9		E300.0	10/10/07 16:10 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 20:54 / jak
Hardness as CaCO3	7050	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.2	mg/L		0.1		E350.1	10/11/07 14:22 / bls
Nitrogen, Nitrate+Nitrite as N	12.3	mg/L		0.05		E353.2	10/12/07 11:23 / bls
METALS, DISSOLVED							
Calcium	1460	mg/L	D	20		E200.7	10/09/07 03:43 / rlh
Magnesium	823	mg/L	D	10		E200.7	10/09/07 03:43 / rlh
Potassium	51	mg/L	D	7		E200.7	10/09/07 03:43 / rlh
Silica	22	mg/L	D	9		E200.7	10/09/07 03:43 / rlh
Sodium	9060	mg/L	D	20		E200.7	10/09/07 03:43 / rlh
METALS, TOTAL							
Silica	29	mg/L	D	9		E200.7	10/09/07 08:22 / rlh
QUALITY CONTROL							
A/C Balance Sigma	7.58					Calculation	10/17/07 15:58 / klc
Anions	609	meq/L		0.01		Calculation	10/17/07 15:58 / klc
Cations	536	meq/L		0.01		Calculation	10/17/07 15:58 / klc
A/C Balance	-6.31	%				Calculation	10/17/07 15:58 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 12:13 / bw
Benzene	17	ug/L		0.50		SW8021B	10/10/07 12:13 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 12:13 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 12:13 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 12:13 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 12:13 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-017
Client Sample ID: M-28

Report Date: 10/25/07
Collection Date: 10/03/07 16:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 11:38 / bw
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 11:38 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 07:30 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-017
Client Sample ID: M-28

Report Date: 10/25/07
Collection Date: 10/03/07 16:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500 H	10/05/07 18:45 / jak
Conductivity	34200	umhos/cm		1		A2510 B	10/05/07 18:14 / jak
Solids, Total Dissolved TDS @ 180 C	20700	mg/L		10		A2540 C	10/05/07 18:32 / qed
INORGANICS							
Alkalinity, Total as CaCO3	647	mg/L		4		A2320 B	10/09/07 20:45 / jak
Bicarbonate as HCO3	789	mg/L		4		A2320 B	10/09/07 20:45 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 20:45 / jak
Chloride	10900	mg/L	D	10		E300.0	10/10/07 15:58 / qed
Sulfate	1830	mg/L	D	9		E300.0	10/10/07 15:58 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 20:45 / jak
Hardness as CaCO3	3800	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	3.0	mg/L		0.1		E350.1	10/11/07 14:25 / bls
Nitrogen, Nitrate+Nitrite as N	18.0	mg/L		0.05		E353.2	10/12/07 11:31 / bls
METALS, DISSOLVED							
Calcium	733	mg/L	D	10		E200.7	10/09/07 03:39 / rlh
Magnesium	479	mg/L	D	7		E200.7	10/09/07 03:39 / rlh
Potassium	47	mg/L	D	3		E200.7	10/09/07 03:39 / rlh
Silica	22	mg/L	D	4		E200.7	10/09/07 03:39 / rlh
Sodium	5820	mg/L	D	9		E200.7	10/09/07 03:39 / rlh
METALS, TOTAL							
Silica	22	mg/L	D	4		E200.7	10/09/07 08:18 / rlh
QUALITY CONTROL							
A/C Balance Sigma	5.04					Calculation	10/17/07 15:57 / klc
Anions	359	meq/L		0.01		Calculation	10/17/07 15:57 / klc
Cations	331	meq/L		0.01		Calculation	10/17/07 15:57 / klc
A/C Balance	-4.15	%				Calculation	10/17/07 15:57 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 11:38 / bw
Benzene	19	ug/L		0.50		SW8021B	10/10/07 11:38 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 11:38 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 11:38 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 11:38 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 11:38 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-016
Client Sample ID: PNR-19

Report Date: 10/25/07
Collection Date: 10/03/07 14:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 00:39 / bw
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 00:39 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 07:20 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-016
Client Sample ID: PNR-19

Report Date: 10/25/07
Collection Date: 10/03/07 14:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.9	s.u.		0.1		A4500 H	10/05/07 18:44 / jak
Conductivity	31400	umhos/cm		1		A2510 B	10/05/07 18:14 / jak
Solids, Total Dissolved TDS @ 180 C	20000	mg/L		10		A2540 C	10/05/07 18:30 / qed
INORGANICS							
Alkalinity, Total as CaCO3	333	mg/L		4		A2320 B	10/09/07 20:36 / jak
Bicarbonate as HCO3	407	mg/L		4		A2320 B	10/09/07 20:36 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 20:36 / jak
Chloride	11200	mg/L	D	10		E300.0	10/10/07 15:47 / qed
Sulfate	1350	mg/L	D	9		E300.0	10/10/07 15:47 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/09/07 20:36 / jak
Hardness as CaCO3	6010	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 14:18 / bls
Nitrogen, Nitrate+Nitrite as N	26.2	mg/L		0.05		E353.2	10/12/07 11:30 / bls
METALS, DISSOLVED							
Calcium	1150	mg/L	D	10		E200.7	10/09/07 03:27 / rlh
Magnesium	762	mg/L	D	7		E200.7	10/09/07 03:27 / rlh
Potassium	38	mg/L	D	3		E200.7	10/09/07 03:27 / rlh
Silica	23	mg/L	D	4		E200.7	10/09/07 03:27 / rlh
Sodium	4370	mg/L	D	9		E200.7	10/09/07 03:27 / rlh
METALS, TOTAL							
Silica	25	mg/L	D	4		E200.7	10/09/07 08:14 / rlh
QUALITY CONTROL							
A/C Balance Sigma	7.27					Calculation	10/17/07 15:56 / klc
Anions	352	meq/L		0.01		Calculation	10/17/07 15:56 / klc
Cations	311	meq/L		0.01		Calculation	10/17/07 15:56 / klc
A/C Balance	-6.10	%				Calculation	10/17/07 15:56 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 00:39 / bw
Benzene	11	ug/L		0.50		SW8021B	10/10/07 00:39 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 00:39 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 00:39 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 00:39 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 00:39 / bw

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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-015
Client Sample ID: PNR-27

Report Date: 10/25/07
Collection Date: 10/03/07 12:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 00:04 / bw
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/10/07 00:04 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 07:10 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-015
Client Sample ID: PNR-27

Report Date: 10/25/07
Collection Date: 10/03/07 12:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.6	s.u.		0.1		A4500 H	10/05/07 18:44 / jak
Conductivity	41700	umhos/cm		1		A2510 B	10/05/07 18:13 / jak
Solids, Total Dissolved TDS @ 180 C	27300	mg/L		10		A2540 C	10/05/07 18:28 / qed
INORGANICS							
Alkalinity, Total as CaCO3	562	mg/L		4		A2320 B	10/09/07 20:21 / jak
Bicarbonate as HCO3	686	mg/L		4		A2320 B	10/09/07 20:21 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 20:21 / jak
Chloride	15100	mg/L	D	10		E300.0	10/10/07 15:35 / qed
Sulfate	1900	mg/L	D	9		E300.0	10/13/07 01:10 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 20:21 / jak
Hardness as CaCO3	10000	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 14:17 / bls
Nitrogen, Nitrate+Nitrite as N	31.8	mg/L		0.05		E353.2	10/12/07 11:29 / bls
METALS, DISSOLVED							
Calcium	1920	mg/L	D	10		E200.7	10/09/07 03:24 / rlh
Magnesium	1270	mg/L	D	7		E200.7	10/09/07 03:24 / rlh
Potassium	46	mg/L	D	3		E200.7	10/09/07 03:24 / rlh
Silica	28	mg/L	D	4		E200.7	10/09/07 03:24 / rlh
Sodium	5410	mg/L	D	9		E200.7	10/09/07 03:24 / rlh
METALS, TOTAL							
Silica	32	mg/L	D	4		E200.7	10/08/07 17:34 / rlh
QUALITY CONTROL							
A/C Balance Sigma	6.42					Calculation	10/16/07 16:57 / klc
Anions	486	meq/L		0.01		Calculation	10/16/07 16:57 / klc
Cations	437	meq/L		0.01		Calculation	10/16/07 16:57 / klc
A/C Balance	-5.31	%				Calculation	10/16/07 16:57 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 00:04 / bw
Benzene	1.7	ug/L		0.50		SW8021B	10/10/07 00:04 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 00:04 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/10/07 00:04 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 00:04 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 00:04 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-014
Client Sample ID: USGS-93-3

Report Date: 10/25/07
Collection Date: 10/03/07 11:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 23:29 / bw
Surr: Trifluorotoluene	88.0	%REC		80-120		SW8021B	10/09/07 23:29 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 07:00 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-014
Client Sample ID: USGS-93-3

Report Date: 10/25/07
Collection Date: 10/03/07 11:50
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.7	s.u.		0.1		A4500 H	10/05/07 18:09 / jak
Conductivity	98600	umhos/cm		1		A2510 B	10/05/07 18:09 / jak
Solids, Total Dissolved TDS @ 180 C	61600	mg/L		10		A2540 C	10/05/07 18:26 / qed
INORGANICS							
Alkalinity, Total as CaCO3	396	mg/L		4		A2320 B	10/09/07 20:12 / jak
Bicarbonate as HCO3	483	mg/L		4		A2320 B	10/09/07 20:12 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 20:12 / jak
Chloride	40300	mg/L	D	10		E300.0	10/13/07 00:58 / qed
Sulfate	1330	mg/L	D	9		E300.0	10/13/07 00:58 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 20:12 / jak
Hardness as CaCO3	3170	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	15.6	mg/L		0.1		E350.1	10/11/07 14:16 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:28 / bls
METALS, DISSOLVED							
Calcium	936	mg/L	D	20		E200.7	10/09/07 03:20 / rlh
Magnesium	201	mg/L	D	10		E200.7	10/09/07 03:20 / rlh
Potassium	375	mg/L	D	7		E200.7	10/09/07 03:20 / rlh
Silica	23	mg/L	D	9		E200.7	10/09/07 03:20 / rlh
Sodium	21800	mg/L	D	20		E200.7	10/09/07 03:20 / rlh
METALS, TOTAL							
Silica	26	mg/L	D	9		E200.7	10/08/07 17:31 / rlh
QUALITY CONTROL							
A/C Balance Sigma	8.21					Calculation	10/16/07 16:53 / klc
Anions	1170	meq/L		0.01		Calculation	10/16/07 16:53 / klc
Cations	1020	meq/L		0.01		Calculation	10/16/07 16:53 / klc
A/C Balance	-6.83	%				Calculation	10/16/07 16:53 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 23:29 / bw
Benzene	1.4	ug/L		0.50		SW8021B	10/09/07 23:29 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 23:29 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 23:29 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 23:29 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 23:29 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-013
Client Sample ID: PNR-29

Report Date: 10/25/07
Collection Date: 10/02/07 18:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 22:55 / bw
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	10/09/07 22:55 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 06:50 / bdw

Report Definitions:
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MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-013
Client Sample ID: PNR-29

Report Date: 10/25/07
Collection Date: 10/02/07 18:40
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500 H	10/05/07 18:08 / jak
Conductivity	5810	umhos/cm		1		A2510 B	10/05/07 18:08 / jak
Solids, Total Dissolved TDS @ 180 C	4680	mg/L		10		A2540 C	10/05/07 18:20 / qed
INORGANICS							
Alkalinity, Total as CaCO3	668	mg/L		4		A2320 B	10/09/07 20:04 / jak
Bicarbonate as HCO3	815	mg/L		4		A2320 B	10/09/07 20:04 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 20:04 / jak
Chloride	96	mg/L		1		E300.0	10/13/07 00:23 / qed
Sulfate	1960	mg/L		1		E300.0	10/13/07 00:23 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/09/07 20:04 / jak
Hardness as CaCO3	2280	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 14:15 / bls
Nitrogen, Nitrate+Nitrite as N	243	mg/L	D	0.2		E353.2	10/12/07 11:27 / bls
METALS, DISSOLVED							
Calcium	420	mg/L	D	2		E200.7	10/09/07 03:16 / rlh
Magnesium	299	mg/L		1		E200.7	10/09/07 03:16 / rlh
Potassium	11	mg/L		1		E200.7	10/09/07 03:16 / rlh
Silica	27.7	mg/L	D	0.9		E200.7	10/09/07 03:16 / rlh
Sodium	487	mg/L	D	2		E200.7	10/09/07 03:16 / rlh
METALS, TOTAL							
Silica	30.5	mg/L	D	0.9		E200.7	10/09/07 08:10 / rlh
QUALITY CONTROL							
A/C Balance Sigma	5.71					Calculation	10/18/07 14:16 / klc
Anions	74.3	meq/L		0.01		Calculation	10/18/07 14:16 / klc
Cations	67.1	meq/L		0.01		Calculation	10/18/07 14:16 / klc
A/C Balance	-5.08	%				Calculation	10/18/07 14:16 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 22:55 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 22:55 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 22:55 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 22:55 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 22:55 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 22:55 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-012
Client Sample ID: PNR-18

Report Date: 10/25/07
Collection Date: 10/02/07 17:20
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	10/09/07 22:19 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 10:40 / bdw

Report Definitions:
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-012
Client Sample ID: PNR-18

Report Date: 10/25/07
Collection Date: 10/02/07 17:20
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 18:06 / jak
Conductivity	4370	umhos/cm		1		A2510 B	10/05/07 18:06 / jak
Solids, Total Dissolved TDS @ 180 C	3490	mg/L		10		A2540 C	10/05/07 18:19 / qed
INORGANICS							
Alkalinity, Total as CaCO3	740	mg/L		4		A2320 B	10/09/07 19:25 / jak
Bicarbonate as HCO3	903	mg/L		4		A2320 B	10/09/07 19:25 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 19:25 / jak
Chloride	86	mg/L		1		E300.0	10/11/07 13:05 / qed
Sulfate	1730	mg/L		1		E300.0	10/10/07 14:14 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 19:25 / jak
Hardness as CaCO3	1810	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	3.0	mg/L		0.1		E350.1	10/11/07 14:13 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:36 / bls
METALS, DISSOLVED							
Calcium	308	mg/L		1		E200.7	10/09/07 03:12 / rlh
Magnesium	252	mg/L		1		E200.7	10/09/07 03:12 / rlh
Potassium	8	mg/L		1		E200.7	10/09/07 03:12 / rlh
Silica	26.9	mg/L	D	0.4		E200.7	10/09/07 03:12 / rlh
Sodium	360	mg/L		1		E200.7	10/09/07 03:12 / rlh
METALS, TOTAL							
Silica	28.9	mg/L	D	0.4		E200.7	10/09/07 08:07 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.18					Calculation	10/12/07 11:07 / klc
Anions	53.3	meq/L		0.01		Calculation	10/12/07 11:07 / klc
Cations	52.2	meq/L		0.01		Calculation	10/12/07 11:07 / klc
A/C Balance	-1.05	%				Calculation	10/12/07 11:07 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 22:19 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 22:19 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 22:19 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 22:19 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 22:19 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 22:19 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 22:19 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-011
Client Sample ID: PNR-35

Report Date: 10/25/07
Collection Date: 10/02/07 16:05
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	10/09/07 21:44 / bw
- The sample was received in the laboratory with a pH > 2. The pH was 3.							
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 10:30 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-011
Client Sample ID: PNR-35

Report Date: 10/25/07
Collection Date: 10/02/07 16:05
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 18:05 / jak
Conductivity	4220	umhos/cm		1		A2510 B	10/05/07 18:05 / jak
Solids, Total Dissolved TDS @ 180 C	3150	mg/L		10		A2540 C	10/05/07 18:18 / qed
INORGANICS							
Alkalinity, Total as CaCO3	670	mg/L		4		A2320 B	10/09/07 19:54 / jak
Bicarbonate as HCO3	818	mg/L		4		A2320 B	10/09/07 19:54 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 19:54 / jak
Chloride	89	mg/L		1		E300.0	10/11/07 12:53 / qed
Sulfate	1580	mg/L		1		E300.0	10/10/07 14:02 / qed
Fluoride	0.4	mg/L		0.1		A4500-F C	10/09/07 19:54 / jak
Hardness as CaCO3	1290	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.4	mg/L		0.1		E350.1	10/11/07 14:12 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:35 / bls
METALS, DISSOLVED							
Calcium	234	mg/L		1		E200.7	10/09/07 03:08 / rlh
Magnesium	172	mg/L		1		E200.7	10/09/07 03:08 / rlh
Potassium	8	mg/L		1		E200.7	10/09/07 03:08 / rlh
Silica	21.5	mg/L	D	0.4		E200.7	10/09/07 03:08 / rlh
Sodium	509	mg/L		1		E200.7	10/09/07 03:08 / rlh
METALS, TOTAL							
Silica	34.2	mg/L	D	0.4		E200.7	10/09/07 08:03 / rlh
QUALITY CONTROL							
A/C Balance Sigma	0.70					Calculation	10/12/07 11:07 / klc
Anions	48.8	meq/L		0.01		Calculation	10/12/07 11:07 / klc
Cations	48.2	meq/L		0.01		Calculation	10/12/07 11:07 / klc
A/C Balance	-0.62	%				Calculation	10/12/07 11:07 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 21:44 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 21:44 / bw
Toluene	0.63	ug/L		0.50		SW8021B	10/09/07 21:44 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 21:44 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 21:44 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 21:44 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 21:44 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-010
Client Sample ID: PNR-7

Report Date: 10/25/07
Collection Date: 10/04/07 19:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	10/09/07 20:36 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 10:10 / bdw

Report Definitions:
RL - Analyte reporting limit.
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-010
Client Sample ID: PNR-7

Report Date: 10/25/07
Collection Date: 10/04/07 19:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.4	s.u.		0.1		A4500 H	10/05/07 18:03 / jak
Conductivity	70100	umhos/cm		1		A2510 B	10/05/07 18:03 / jak
Solids, Total Dissolved TDS @ 180 C	45400	mg/L		10		A2540 C	10/05/07 18:16 / qed
INORGANICS							
Alkalinity, Total as CaCO3	372	mg/L		4		A2320 B	10/09/07 19:15 / jak
Bicarbonate as HCO3	453	mg/L		4		A2320 B	10/09/07 19:15 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 19:15 / jak
Chloride	26500	mg/L	D	10		E300.0	10/10/07 13:51 / qed
Sulfate	1510	mg/L	D	9		E300.0	10/10/07 13:51 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 19:15 / jak
Hardness as CaCO3	13100	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.5	mg/L		0.1		E350.1	10/11/07 14:05 / bls
Nitrogen, Nitrate+Nitrite as N	3.80	mg/L		0.05		E353.2	10/12/07 11:34 / bls
METALS, DISSOLVED							
Calcium	2560	mg/L	D	20		E200.7	10/09/07 03:04 / rlh
Magnesium	1630	mg/L	D	10		E200.7	10/09/07 03:04 / rlh
Potassium	72	mg/L	D	7		E200.7	10/09/07 03:04 / rlh
Silica	19	mg/L	D	9		E200.7	10/09/07 03:04 / rlh
Sodium	11000	mg/L	D	20		E200.7	10/09/07 03:04 / rlh
METALS, TOTAL							
Silica	24	mg/L	D	9		E200.7	10/08/07 17:27 / rlh
QUALITY CONTROL							
A/C Balance Sigma	3.61					Calculation	10/11/07 12:04 / klc
Anions	785	meq/L		0.01		Calculation	10/11/07 12:04 / klc
Cations	741	meq/L		0.01		Calculation	10/11/07 12:04 / klc
A/C Balance	-2.91	%				Calculation	10/11/07 12:04 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 20:36 / bw
Benzene	43	ug/L		0.50		SW8021B	10/09/07 20:36 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 20:36 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 20:36 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 20:36 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 20:36 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 20:36 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-009
Client Sample ID: PNR-13

Report Date: 10/25/07
Collection Date: 10/04/07 17:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	10/09/07 20:01 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 10:00 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-009
Client Sample ID: PNR-13

Report Date: 10/25/07
Collection Date: 10/04/07 17:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 18:02 / jak
Conductivity	4810	umhos/cm		1		A2510 B	10/05/07 18:02 / jak
Solids, Total Dissolved TDS @ 180 C	3750	mg/L		10		A2540 C	10/05/07 18:15 / qed
INORGANICS							
Alkalinity, Total as CaCO3	499	mg/L		4		A2320 B	10/09/07 18:55 / jak
Bicarbonate as HCO3	608	mg/L		4		A2320 B	10/09/07 18:55 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 18:55 / jak
Chloride	347	mg/L		1		E300.0	10/10/07 13:39 / qed
Sulfate	1740	mg/L		1		E300.0	10/10/07 13:39 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/09/07 18:55 / jak
Hardness as CaCO3	1630	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	1.2	mg/L		0.1		E350.1	10/11/07 14:11 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 11:33 / bls
METALS, DISSOLVED							
Calcium	308	mg/L		1		E200.7	10/09/07 03:01 / rlh
Magnesium	210	mg/L		1		E200.7	10/09/07 03:01 / rlh
Potassium	9	mg/L		1		E200.7	10/09/07 03:01 / rlh
Silica	25.6	mg/L	D	0.4		E200.7	10/09/07 03:01 / rlh
Sodium	495	mg/L		1		E200.7	10/09/07 03:01 / rlh
METALS, TOTAL							
Silica	36.5	mg/L	D	0.4		E200.7	10/09/07 07:59 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.71					Calculation	10/11/07 12:04 / klc
Anions	56.0	meq/L		0.01		Calculation	10/11/07 12:04 / klc
Cations	54.4	meq/L		0.01		Calculation	10/11/07 12:04 / klc
A/C Balance	-1.51	%				Calculation	10/11/07 12:04 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 20:01 / bw
Benzene	0.43	ug/L	J	0.50		SW8021B	10/09/07 20:01 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 20:01 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 20:01 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 20:01 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 20:01 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 20:01 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-008
Client Sample ID: PNR-28

Report Date: 10/25/07
Collection Date: 10/04/07 16:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 19:25 / bw
Surr: Trifluorotoluene	95.0	%REC		80-120		SW8021B	10/09/07 19:25 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 09:50 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-008
Client Sample ID: PNR-28

Report Date: 10/25/07
Collection Date: 10/04/07 16:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.5	s.u.		0.1		A4500 H	10/05/07 18:00 / jak
Conductivity	51900	umhos/cm		1		A2510 B	10/05/07 18:00 / jak
Solids, Total Dissolved TDS @ 180 C	33200	mg/L		10		A2540 C	10/05/07 18:14 / qed
INORGANICS							
Alkalinity, Total as CaCO3	529	mg/L		4		A2320 B	10/09/07 18:46 / jak
Bicarbonate as HCO3	645	mg/L		4		A2320 B	10/09/07 18:46 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 18:46 / jak
Chloride	19500	mg/L	D	10		E300.0	10/13/07 00:12 / qed
Sulfate	1720	mg/L	D	9		E300.0	10/13/07 00:12 / qed
Fluoride	0.1	mg/L		0.1		A4500-F C	10/09/07 18:46 / jak
Hardness as CaCO3	9550	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 14:10 / bls
Nitrogen, Nitrate+Nitrite as N	23.2	mg/L		0.05		E353.2	10/12/07 10:17 / bls
METALS, DISSOLVED							
Calcium	1910	mg/L	D	20		E200.7	10/09/07 02:18 / rlh
Magnesium	1160	mg/L	D	10		E200.7	10/09/07 02:18 / rlh
Potassium	43	mg/L	D	7		E200.7	10/09/07 02:18 / rlh
Silica	21	mg/L	D	9		E200.7	10/09/07 02:18 / rlh
Sodium	7950	mg/L	D	20		E200.7	10/09/07 02:18 / rlh
METALS, TOTAL							
Silica	30	mg/L	D	9		E200.7	10/09/07 07:55 / rlh
QUALITY CONTROL							
A/C Balance Sigma	6.45					Calculation	10/16/07 16:49 / klc
Anions	598	meq/L		0.01		Calculation	10/16/07 16:49 / klc
Cations	538	meq/L		0.01		Calculation	10/16/07 16:49 / klc
A/C Balance	-5.33	%				Calculation	10/16/07 16:49 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 19:25 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 19:25 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 19:25 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 19:25 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 19:25 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 19:25 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-007
Client Sample ID: MOC-4

Report Date: 10/25/07
Collection Date: 10/04/07 11:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	97.0	%REC		80-120		SW8021B	10/09/07 18:50 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 09:40 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-007
Client Sample ID: MOC-4

Report Date: 10/25/07
Collection Date: 10/04/07 11:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500 H	10/05/07 17:59 / jak
Conductivity	9600	umhos/cm		1		A2510 B	10/05/07 17:59 / jak
Solids, Total Dissolved TDS @ 180 C	5550	mg/L		10		A2540 C	10/05/07 18:13 / qed
INORGANICS							
Alkalinity, Total as CaCO3	330	mg/L		4		A2320 B	10/09/07 18:31 / jak
Bicarbonate as HCO3	403	mg/L		4		A2320 B	10/09/07 18:31 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 18:31 / jak
Chloride	2580	mg/L	D	2		E300.0	10/10/07 13:16 / qed
Sulfate	817	mg/L	D	2		E300.0	10/10/07 13:16 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 18:31 / jak
Hardness as CaCO3	2290	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	1.3	mg/L		0.1		E350.1	10/11/07 14:09 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 10:16 / bls
METALS, DISSOLVED							
Calcium	446	mg/L	D	2		E200.7	10/09/07 02:14 / rlh
Magnesium	286	mg/L		1		E200.7	10/09/07 02:14 / rlh
Potassium	15	mg/L		1		E200.7	10/09/07 02:14 / rlh
Silica	17.9	mg/L	D	0.9		E200.7	10/09/07 02:14 / rlh
Sodium	1230	mg/L	D	2		E200.7	10/09/07 02:14 / rlh
METALS, TOTAL							
Silica	20.1	mg/L	D	0.9		E200.7	10/08/07 17:23 / rlh
QUALITY CONTROL							
A/C Balance Sigma	-2.20					Calculation	10/11/07 12:04 / klc
Anions	96.3	meq/L		0.01		Calculation	10/11/07 12:04 / klc
Cations	99.9	meq/L		0.01		Calculation	10/11/07 12:04 / klc
A/C Balance	1.80	%				Calculation	10/11/07 12:04 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 18:50 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 18:50 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 18:50 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 18:50 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 18:50 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 18:50 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 18:50 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-006
Client Sample ID: MOC-20A

Report Date: 10/25/07
Collection Date: 10/03/07 17:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	98.0	%REC		80-120		SW8021B	10/09/07 18:16 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	2.2	mg/L		0.10		E418.1	10/06/07 09:30 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-006
Client Sample ID: MOC-20A

Report Date: 10/25/07
Collection Date: 10/03/07 17:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 17:58 / jak
Conductivity	5890	umhos/cm		1		A2510 B	10/05/07 17:58 / jak
Solids, Total Dissolved TDS @ 180 C	5370	mg/L		10		A2540 C	10/05/07 18:12 / qed
INORGANICS							
Alkalinity, Total as CaCO3	311	mg/L		4		A2320 B	10/09/07 18:22 / jak
Bicarbonate as HCO3	379	mg/L		4		A2320 B	10/09/07 18:22 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 18:22 / jak
Chloride	125	mg/L		1		E300.0	10/10/07 13:04 / qed
Sulfate	3290	mg/L		1		E300.0	10/10/07 13:04 / qed
Fluoride	0.4	mg/L		0.1		A4500-F C	10/09/07 18:22 / jak
Hardness as CaCO3	2860	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	0.3	mg/L		0.1		E350.1	10/11/07 13:05 / bls
Nitrogen, Nitrate+Nitrite as N	22.0	mg/L		0.05		E353.2	10/12/07 10:15 / bls
METALS, DISSOLVED							
Calcium	473	mg/L	D	2		E200.7	10/09/07 02:10 / rlh
Magnesium	408	mg/L		1		E200.7	10/09/07 02:10 / rlh
Potassium	23	mg/L		1		E200.7	10/09/07 02:10 / rlh
Silica	40.1	mg/L	D	0.9		E200.7	10/09/07 02:10 / rlh
Sodium	462	mg/L	D	2		E200.7	10/09/07 02:10 / rlh
METALS, TOTAL							
Silica	106	mg/L	D	0.9		E200.7	10/09/07 07:51 / rlh
QUALITY CONTROL							
A/C Balance Sigma	0.25					Calculation	10/11/07 12:04 / klc
Anions	78.2	meq/L		0.01		Calculation	10/11/07 12:04 / klc
Cations	77.8	meq/L		0.01		Calculation	10/11/07 12:04 / klc
A/C Balance	-0.21	%				Calculation	10/11/07 12:04 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 18:16 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 18:16 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 18:16 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 18:16 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 18:16 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 18:16 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 18:16 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-005
Client Sample ID: PNR-10

Report Date: 10/25/07
Collection Date: 10/03/07 16:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	99.0	%REC		80-120		SW8021B	10/09/07 17:40 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 09:20 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-005
Client Sample ID: PNR-10

Report Date: 10/25/07
Collection Date: 10/03/07 16:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500 H	10/05/07 17:58 / jak
Conductivity	6080	umhos/cm		1		A2510 B	10/05/07 17:57 / jak
Solids, Total Dissolved TDS @ 180 C	4130	mg/L		10		A2540 C	10/05/07 18:10 / qed
INORGANICS							
Alkalinity, Total as CaCO3	442	mg/L		4		A2320 B	10/09/07 18:14 / jak
Bicarbonate as HCO3	540	mg/L		4		A2320 B	10/09/07 18:14 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 18:14 / jak
Chloride	984	mg/L		1		E300.0	10/10/07 12:29 / qed
Sulfate	1400	mg/L		1		E300.0	10/10/07 12:29 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/09/07 18:14 / jak
Hardness as CaCO3	1840	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	1.7	mg/L		0.1		E350.1	10/11/07 13:04 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 10:14 / bls
METALS, DISSOLVED							
Calcium	368	mg/L	D	2		E200.7	10/09/07 02:06 / rlh
Magnesium	225	mg/L		1		E200.7	10/09/07 02:06 / rlh
Potassium	10	mg/L		1		E200.7	10/09/07 02:06 / rlh
Silica	26.1	mg/L	D	0.9		E200.7	10/09/07 02:06 / rlh
Sodium	612	mg/L	D	2		E200.7	10/09/07 02:06 / rlh
METALS, TOTAL							
Silica	32.2	mg/L	D	0.9		E200.7	10/08/07 17:12 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.90					Calculation	10/11/07 12:03 / klc
Anions	65.8	meq/L		0.01		Calculation	10/11/07 12:03 / klc
Cations	63.7	meq/L		0.01		Calculation	10/11/07 12:03 / klc
A/C Balance	-1.65	%				Calculation	10/11/07 12:03 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 17:40 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 17:40 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 17:40 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 17:40 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 17:40 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 17:40 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 17:40 / bw

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QCL - Quality control limit.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-004
Client Sample ID: PNR-36-07

Report Date: 10/25/07
Collection Date: 10/03/07 14:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	10/09/07 17:06 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 09:10 / bdw

Report Definitions:
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MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-004
Client Sample ID: PNR-36-07

Report Date: 10/25/07
Collection Date: 10/03/07 14:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500 H	10/05/07 17:57 / jak
Conductivity	3600	umhos/cm		1		A2510 B	10/05/07 17:57 / jak
Solids, Total Dissolved TDS @ 180 C	2700	mg/L		10		A2540 C	10/05/07 18:09 / qed
INORGANICS							
Alkalinity, Total as CaCO3	425	mg/L		4		A2320 B	10/09/07 18:05 / jak
Bicarbonate as HCO3	518	mg/L		4		A2320 B	10/09/07 18:05 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 18:05 / jak
Chloride	139	mg/L		1		E300.0	10/10/07 11:55 / qed
Sulfate	1200	mg/L		1		E300.0	10/10/07 11:55 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/09/07 18:05 / jak
Hardness as CaCO3	1400	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 13:03 / bls
Nitrogen, Nitrate+Nitrite as N	68.4	mg/L	D	0.2		E353.2	10/12/07 10:13 / bls
METALS, DISSOLVED							
Calcium	271	mg/L		1		E200.7	10/09/07 02:03 / rlh
Magnesium	176	mg/L		1		E200.7	10/09/07 02:03 / rlh
Potassium	9	mg/L		1		E200.7	10/09/07 02:03 / rlh
Silica	17.8	mg/L	D	0.4		E200.7	10/09/07 02:03 / rlh
Sodium	242	mg/L		1		E200.7	10/09/07 02:03 / rlh
METALS, TOTAL							
Silica	29.9	mg/L	D	0.4		E200.7	10/09/07 07:40 / rlh
QUALITY CONTROL							
A/C Balance Sigma	-1.88					Calculation	10/11/07 12:03 / klc
Anions	37.5	meq/L		0.01		Calculation	10/11/07 12:03 / klc
Cations	38.8	meq/L		0.01		Calculation	10/11/07 12:03 / klc
A/C Balance	1.69	%				Calculation	10/11/07 12:03 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 17:06 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 17:06 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 17:06 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 17:06 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 17:06 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 17:06 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 17:06 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-003
Client Sample ID: MOC-20b

Report Date: 10/25/07
Collection Date: 10/03/07 13:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	10/09/07 16:31 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 08:50 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-003
Client Sample ID: MOC-20b

Report Date: 10/25/07
Collection Date: 10/03/07 13:30
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.0	s.u.		0.1		A4500 H	10/05/07 17:56 / jak
Conductivity	4680	umhos/cm		1		A2510 B	10/05/07 17:56 / jak
Solids, Total Dissolved TDS @ 180 C	3800	mg/L		10		A2540 C	10/05/07 18:06 / qed
INORGANICS							
Alkalinity, Total as CaCO3	402	mg/L		4		A2320 B	10/08/07 18:55 / jak
Bicarbonate as HCO3	490	mg/L		4		A2320 B	10/08/07 18:55 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/08/07 18:55 / jak
Chloride	181	mg/L		1		E300.0	10/10/07 11:43 / qed
Sulfate	2050	mg/L		1		E300.0	10/10/07 11:43 / qed
Fluoride	0.3	mg/L		0.1		A4500-F C	10/08/07 18:55 / jak
Hardness as CaCO3	1600	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	1.2	mg/L		0.1		E350.1	10/11/07 13:02 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 10:04 / bls
METALS, DISSOLVED							
Calcium	323	mg/L		1		E200.7	10/09/07 01:59 / rlh
Magnesium	192	mg/L		1		E200.7	10/09/07 01:59 / rlh
Potassium	9	mg/L		1		E200.7	10/09/07 01:59 / rlh
Silica	25.9	mg/L	D	0.4		E200.7	10/09/07 01:59 / rlh
Sodium	490	mg/L		1		E200.7	10/09/07 01:59 / rlh
METALS, TOTAL							
Silica	30.6	mg/L	D	0.4		E200.7	10/09/07 07:36 / rlh
QUALITY CONTROL							
A/C Balance Sigma	2.36					Calculation	10/11/07 12:03 / klc
Anions	55.8	meq/L		0.01		Calculation	10/11/07 12:03 / klc
Cations	53.5	meq/L		0.01		Calculation	10/11/07 12:03 / klc
A/C Balance	-2.10	%				Calculation	10/11/07 12:03 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 16:31 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 16:31 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 16:31 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 16:31 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 16:31 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 16:31 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 16:31 / bw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-002
Client Sample ID: MOC-1b

Report Date: 10/25/07
Collection Date: 10/03/07 10:35
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	102	%REC		80-120		SW8021B	10/09/07 15:56 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 08:40 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-002
Client Sample ID: MOC-1b

Report Date: 10/25/07
Collection Date: 10/03/07 10:35
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 17:55 / jak
Conductivity	4620	umhos/cm		1		A2510 B	10/05/07 17:55 / jak
Solids, Total Dissolved TDS @ 180 C	3920	mg/L		10		A2540 C	10/05/07 18:02 / qed
INORGANICS							
Alkalinity, Total as CaCO3	426	mg/L		4		A2320 B	10/08/07 17:01 / jak
Bicarbonate as HCO3	520	mg/L		4		A2320 B	10/08/07 17:01 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/08/07 17:01 / jak
Chloride	74	mg/L		1		E300.0	10/11/07 12:42 / qed
Sulfate	2280	mg/L		1		E300.0	10/10/07 11:31 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/08/07 17:01 / jak
Hardness as CaCO3	2080	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 13:01 / bls
Nitrogen, Nitrate+Nitrite as N	32.2	mg/L		0.05		E353.2	10/12/07 10:11 / bls
METALS, DISSOLVED							
Calcium	358	mg/L		1		E200.7	10/09/07 01:55 / rlh
Magnesium	289	mg/L		1		E200.7	10/09/07 01:55 / rlh
Potassium	9	mg/L		1		E200.7	10/09/07 01:55 / rlh
Silica	23.4	mg/L	D	0.4		E200.7	10/09/07 01:55 / rlh
Sodium	367	mg/L		1		E200.7	10/09/07 01:55 / rlh
METALS, TOTAL							
Silica	25.3	mg/L	D	0.4		E200.7	10/08/07 17:08 / rlh
QUALITY CONTROL							
A/C Balance Sigma	2.45					Calculation	10/12/07 11:07 / klc
Anions	60.4	meq/L		0.01		Calculation	10/12/07 11:07 / klc
Cations	57.8	meq/L		0.01		Calculation	10/12/07 11:07 / klc
A/C Balance	-2.16	%				Calculation	10/12/07 11:07 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 15:56 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 15:56 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 15:56 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 15:56 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 15:56 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 15:56 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 15:56 / bw

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-001
Client Sample ID: MOC-3

Report Date: 10/25/07
Collection Date: 10/02/07 19:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	101	%REC		80-120		SW8021B	10/09/07 15:21 / bw
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/06/07 08:30 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-001
Client Sample ID: MOC-3

Report Date: 10/25/07
Collection Date: 10/02/07 19:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.1	s.u.		0.1		A4500 H	10/05/07 17:53 / jak
Conductivity	4060	umhos/cm		1		A2510 B	10/05/07 17:53 / jak
Solids, Total Dissolved TDS @ 180 C	3370	mg/L		10		A2540 C	10/05/07 18:00 / qed
INORGANICS							
Alkalinity, Total as CaCO3	359	mg/L		4		A2320 B	10/08/07 15:05 / jak
Bicarbonate as HCO3	438	mg/L		4		A2320 B	10/08/07 15:05 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/08/07 15:05 / jak
Chloride	76	mg/L		1		E300.0	10/11/07 12:07 / qed
Sulfate	1890	mg/L		1		E300.0	10/10/07 11:20 / qed
Fluoride	0.5	mg/L		0.1		A4500-F C	10/08/07 15:05 / jak
Hardness as CaCO3	1580	mg/L		1		A2340 B	10/09/07 11:31 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.1		E350.1	10/11/07 12:57 / bls
Nitrogen, Nitrate+Nitrite as N	15.2	mg/L		0.05		E353.2	10/12/07 10:10 / bls
METALS, DISSOLVED							
Calcium	299	mg/L		1		E200.7	10/09/07 01:51 / rlh
Magnesium	202	mg/L		1		E200.7	10/09/07 01:51 / rlh
Potassium	10	mg/L		1		E200.7	10/09/07 01:51 / rlh
Silica	19.3	mg/L	D	0.4		E200.7	10/09/07 01:51 / rlh
Sodium	379	mg/L		1		E200.7	10/09/07 01:51 / rlh
METALS, TOTAL							
Silica	30.3	mg/L	D	0.4		E200.7	10/09/07 07:32 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.71					Calculation	10/12/07 11:07 / klc
Anions	49.8	meq/L		0.01		Calculation	10/12/07 11:07 / klc
Cations	48.3	meq/L		0.01		Calculation	10/12/07 11:07 / klc
A/C Balance	-1.53	%				Calculation	10/12/07 11:07 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/09/07 15:21 / bw
Benzene	ND	ug/L		0.50		SW8021B	10/09/07 15:21 / bw
Toluene	ND	ug/L		0.50		SW8021B	10/09/07 15:21 / bw
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/09/07 15:21 / bw
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/09/07 15:21 / bw
o-Xylene	ND	ug/L		0.50		SW8021B	10/09/07 15:21 / bw
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/09/07 15:21 / bw

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-032
Client Sample ID: PNR-15

Report Date: 10/25/07
Collection Date: 10/04/07 18:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/05/07 18:41 / jak
Conductivity	28000	umhos/cm		1		A2510 B	10/05/07 18:30 / jak
Solids, Total Dissolved TDS @ 180 C	16800	mg/L		10		A2540 C	10/08/07 16:32 / qed
INORGANICS							
Alkalinity, Total as CaCO3	578	mg/L		4		A2320 B	10/09/07 23:56 / jak
Bicarbonate as HCO3	705	mg/L		4		A2320 B	10/09/07 23:56 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/09/07 23:56 / jak
Chloride	9050	mg/L	D	10		E300.0	10/10/07 20:02 / qed
Sulfate	1810	mg/L	D	9		E300.0	10/10/07 20:02 / qed
Fluoride	0.6	mg/L		0.1		A4500-F C	10/09/07 23:56 / jak
Hardness as CaCO3	1340	mg/L		1		A2340 B	10/16/07 14:12 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	4.6	mg/L		0.1		E350.1	10/11/07 12:45 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 12:51 / bls
METALS, DISSOLVED							
Calcium	328	mg/L	D	10		E200.7	10/16/07 14:12 / rlh
Magnesium	126	mg/L	D	7		E200.7	10/16/07 14:12 / rlh
Potassium	96	mg/L	D	3		E200.7	10/16/07 14:12 / rlh
Silica	28	mg/L	D	4		E200.7	10/16/07 14:12 / rlh
Sodium	6390	mg/L	D	9		E200.7	10/16/07 14:12 / rlh
METALS, TOTAL							
Silica	36	mg/L	D	4		E200.7	10/09/07 09:23 / rlh
QUALITY CONTROL							
A/C Balance Sigma	-0.63					Calculation	10/18/07 14:25 / klc
Anions	305	meq/L		0.01		Calculation	10/18/07 14:25 / klc
Cations	308	meq/L		0.01		Calculation	10/18/07 14:25 / klc
A/C Balance	0.50	%				Calculation	10/18/07 14:25 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/10/07 21:08 / bjm
Benzene	0.63	ug/L		0.50		SW8021B	10/10/07 21:08 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/10/07 21:08 / bjm
Ethylbenzene	0.76	ug/L		0.50		SW8021B	10/10/07 21:08 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/10/07 21:08 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/10/07 21:08 / bjm
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/10/07 21:08 / bjm

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-032
Client Sample ID: PNR-15

Report Date: 10/25/07
Collection Date: 10/04/07 18:00
DateReceived: 10/05/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	91.0	%REC		80-120		SW8021B	10/10/07 21:08 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/08/07 10:30 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-044
Client Sample ID: PNR-5

Report Date: 10/25/07
Collection Date: 10/05/07 11:40
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500 H	10/08/07 14:20 / jak
Conductivity	73100	umhos/cm		1		A2510 B	10/08/07 14:10 / jak
Solids, Total Dissolved TDS @ 180 C	46400	mg/L		10		A2540 C	10/08/07 16:33 / qed
INORGANICS							
Alkalinity, Total as CaCO3	495	mg/L		4		A2320 B	10/10/07 00:05 / jak
Bicarbonate as HCO3	604	mg/L		4		A2320 B	10/10/07 00:05 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/10/07 00:05 / jak
Chloride	27900	mg/L	D	10		E300.0	10/10/07 20:13 / qed
Sulfate	913	mg/L	D	9		E300.0	10/10/07 20:13 / qed
Fluoride	0.4	mg/L		0.1		A4500-F C	10/10/07 00:05 / jak
Hardness as CaCO3	2440	mg/L		1		A2340 B	10/10/07 02:43 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	13.0	mg/L		0.1		E350.1	10/11/07 12:46 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 13:00 / bls
METALS, DISSOLVED							
Calcium	684	mg/L	D	20		E200.7	10/10/07 02:43 / rlh
Magnesium	177	mg/L	D	10		E200.7	10/10/07 02:43 / rlh
Potassium	278	mg/L	D	7		E200.7	10/10/07 02:43 / rlh
Silica	37	mg/L	D	9		E200.7	10/10/07 02:43 / rlh
Sodium	17100	mg/L	D	20		E200.7	10/10/07 02:43 / rlh
METALS, TOTAL							
Silica	34	mg/L	D	9		E200.7	10/10/07 04:37 / rlh
QUALITY CONTROL							
A/C Balance Sigma	1.37					Calculation	10/11/07 12:07 / klc
Anions	816	meq/L		0.01		Calculation	10/11/07 12:07 / klc
Cations	799	meq/L		0.01		Calculation	10/11/07 12:07 / klc
A/C Balance	-1.08	%				Calculation	10/11/07 12:07 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/11/07 18:03 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/11/07 18:03 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/11/07 18:03 / bjm
Ethylbenzene	43	ug/L		0.50		SW8021B	10/11/07 18:03 / bjm
m+p-Xylenes	0.76	ug/L		0.50		SW8021B	10/11/07 18:03 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/11/07 18:03 / bjm
Xylenes, Total	0.76	ug/L		0.50		SW8021B	10/11/07 18:03 / bjm

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MCL - Maximum contaminant level.
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-044
Client Sample ID: PNR-5

Report Date: 10/25/07
Collection Date: 10/05/07 11:40
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	94.0	%REC		80-120		SW8021B	10/11/07 18:03 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/09/07 07:50 / bdw

Report Definitions:
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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-045
Client Sample ID: PNR-23

Report Date: 10/25/07
Collection Date: 10/05/07 12:30
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500 H	10/08/07 14:22 / jak
Conductivity	62100	umhos/cm		1		A2510 B	10/08/07 14:15 / jak
Solids, Total Dissolved TDS @ 180 C	39700	mg/L		10		A2540 C	10/08/07 16:35 / qed
INORGANICS							
Alkalinity, Total as CaCO3	514	mg/L		4		A2320 B	10/10/07 00:14 / jak
Bicarbonate as HCO3	627	mg/L		4		A2320 B	10/10/07 00:14 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/10/07 00:14 / jak
Chloride	25300	mg/L	D	10		E300.0	10/13/07 03:17 / qed
Sulfate	1080	mg/L	D	9		E300.0	10/13/07 03:17 / qed
Fluoride	2.6	mg/L		0.1		A4500-F C	10/10/07 00:14 / jak
Hardness as CaCO3	2620	mg/L		1		A2340 B	10/12/07 13:16 / car
NUTRIENTS							
Nitrogen, Ammonia as N	10.2	mg/L		0.1		E350.1	10/11/07 12:48 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 13:02 / bls
METALS, DISSOLVED							
Calcium	649	mg/L	D	20		E200.7	10/10/07 02:47 / rlh
Magnesium	242	mg/L	D	10		E200.7	10/10/07 02:47 / rlh
Potassium	201	mg/L	D	7		E200.7	10/10/07 02:47 / rlh
Silica	50	mg/L	D	9		E200.7	10/10/07 02:47 / rlh
Sodium	14100	mg/L	D	20		E200.7	10/10/07 02:47 / rlh
METALS, TOTAL							
Silica	46	mg/L	D	9		E200.7	10/10/07 04:41 / rlh
QUALITY CONTROL							
A/C Balance Sigma	6.31					Calculation	10/18/07 14:34 / klc
Anions	747	meq/L		0.01		Calculation	10/18/07 14:34 / klc
Cations	673	meq/L		0.01		Calculation	10/18/07 14:34 / klc
A/C Balance	-5.19	%				Calculation	10/18/07 14:34 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L	D	2.0		SW8021B	10/11/07 19:17 / bjm
Benzene	53	ug/L		0.50		SW8021B	10/11/07 19:17 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/11/07 19:17 / bjm
Ethylbenzene	2.7	ug/L		0.50		SW8021B	10/11/07 19:17 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/11/07 19:17 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/11/07 19:17 / bjm

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-045
Client Sample ID: PNR-23

Report Date: 10/25/07
Collection Date: 10/05/07 12:30
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/11/07 19:17 / bjm
Surr: Trifluorotoluene	91.0	%REC		80-120		SW8021B	10/11/07 19:17 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/09/07 08:00 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-046
Client Sample ID: MOC-2

Report Date: 10/25/07
Collection Date: 10/05/07 14:30
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500 H	10/08/07 14:23 / jak
Conductivity	21200	umhos/cm		1		A2510 B	10/08/07 14:16 / jak
Solids, Total Dissolved TDS @ 180 C	14600	mg/L		10		A2540 C	10/08/07 16:36 / qed
INORGANICS							
Alkalinity, Total as CaCO3	270	mg/L		4		A2320 B	10/10/07 15:18 / jak
Bicarbonate as HCO3	330	mg/L		4		A2320 B	10/10/07 15:18 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/10/07 15:18 / jak
Chloride	7110	mg/L	D	5		E300.0	10/10/07 21:00 / qed
Sulfate	1540	mg/L	D	5		E300.0	10/10/07 21:00 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/10/07 15:18 / jak
Hardness as CaCO3	4950	mg/L		1		A2340 B	10/12/07 13:16 / car
NUTRIENTS							
Nitrogen, Ammonia as N	4.0	mg/L		0.1		E350.1	10/11/07 12:49 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 13:03 / bls
METALS, DISSOLVED							
Calcium	1060	mg/L	D	5		E200.7	10/10/07 02:50 / rlh
Magnesium	556	mg/L	D	3		E200.7	10/10/07 02:50 / rlh
Potassium	25	mg/L	D	2		E200.7	10/10/07 02:50 / rlh
Silica	20	mg/L	D	2		E200.7	10/10/07 02:50 / rlh
Sodium	2840	mg/L	D	5		E200.7	10/10/07 02:50 / rlh
METALS, TOTAL							
Silica	26	mg/L	D	2		E200.7	10/10/07 04:53 / rlh
QUALITY CONTROL							
A/C Balance Sigma	3.84					Calculation	10/18/07 14:35 / klc
Anions	238	meq/L		0.01		Calculation	10/18/07 14:35 / klc
Cations	223	meq/L		0.01		Calculation	10/18/07 14:35 / klc
A/C Balance	-3.16	%				Calculation	10/18/07 14:35 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/11/07 20:31 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/11/07 20:31 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/11/07 20:31 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/11/07 20:31 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/11/07 20:31 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/11/07 20:31 / bjm
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/11/07 20:31 / bjm

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-046
Client Sample ID: MOC-2

Report Date: 10/25/07
Collection Date: 10/05/07 14:30
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	92.0	%REC		80-120		SW8021B	10/11/07 20:31 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/09/07 08:20 / bdw

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-047
Client Sample ID: PNR-34-07

Report Date: 10/25/07
Collection Date: 10/05/07 15:40
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.8	s.u.		0.1		A4500 H	10/08/07 14:24 / jak
Conductivity	40100	umhos/cm		1		A2510 B	10/08/07 14:17 / jak
Solids, Total Dissolved TDS @ 180 C	28700	mg/L		10		A2540 C	10/08/07 16:37 / qed
INORGANICS							
Alkalinity, Total as CaCO3	477	mg/L		4		A2320 B	10/10/07 15:43 / jak
Bicarbonate as HCO3	582	mg/L		4		A2320 B	10/10/07 15:43 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/10/07 15:43 / jak
Chloride	15700	mg/L	D	10		E300.0	10/10/07 21:11 / qed
Sulfate	1700	mg/L	D	9		E300.0	10/10/07 21:11 / qed
Fluoride	0.1	mg/L		0.1		A4500-F C	10/10/07 15:43 / jak
Hardness as CaCO3	12700	mg/L		1		A2340 B	10/12/07 13:16 / car
NUTRIENTS							
Nitrogen, Ammonia as N	0.4	mg/L		0.1		E350.1	10/11/07 12:50 / bls
Nitrogen, Nitrate+Nitrite as N	2.84	mg/L		0.05		E353.2	10/12/07 13:04 / bls
METALS, DISSOLVED							
Calcium	2220	mg/L	D	10		E200.7	10/10/07 02:54 / rlh
Magnesium	1730	mg/L	D	7		E200.7	10/10/07 02:54 / rlh
Potassium	45	mg/L	D	3		E200.7	10/10/07 02:54 / rlh
Silica	16	mg/L	D	4		E200.7	10/10/07 02:54 / rlh
Sodium	4390	mg/L	D	9		E200.7	10/10/07 02:54 / rlh
METALS, TOTAL							
Silica	28	mg/L	D	4		E200.7	10/10/07 04:56 / rlh
QUALITY CONTROL							
A/C Balance Sigma	5.63					Calculation	10/18/07 14:40 / klc
Anions	489	meq/L		0.01		Calculation	10/18/07 14:40 / klc
Cations	446	meq/L		0.01		Calculation	10/18/07 14:40 / klc
A/C Balance	-4.63	%				Calculation	10/18/07 14:40 / klc
- The Balance was confirmed by re-analysis of anions, cations, and alkalinity.							
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/11/07 21:44 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/11/07 21:44 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/11/07 21:44 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/11/07 21:44 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/11/07 21:44 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/11/07 21:44 / bjm

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-047
Client Sample ID: PNR-34-07

Report Date: 10/25/07
Collection Date: 10/05/07 15:40
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/11/07 21:44 / bjm
Surr: Trifluorotoluene	90.0	%REC		80-120		SW8021B	10/11/07 21:44 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/09/07 08:30 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-048
Client Sample ID: Whitmer

Report Date: 10/25/07
Collection Date: 10/05/07 18:00
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.2	s.u.		0.1		A4500 H	10/08/07 14:27 / jak
Conductivity	7100	umhos/cm		1		A2510 B	10/08/07 14:18 / jak
Solids, Total Dissolved TDS @ 180 C	4520	mg/L		10		A2540 C	10/08/07 16:47 / qed
INORGANICS							
Alkalinity, Total as CaCO3	274	mg/L		4		A2320 B	10/10/07 15:50 / jak
Bicarbonate as HCO3	335	mg/L		4		A2320 B	10/10/07 15:50 / jak
Carbonate as CO3	ND	mg/L		4		A2320 B	10/10/07 15:50 / jak
Chloride	1980	mg/L	D	2		E300.0	10/10/07 21:23 / qed
Sulfate	365	mg/L	D	2		E300.0	10/10/07 21:23 / qed
Fluoride	0.2	mg/L		0.1		A4500-F C	10/10/07 15:50 / jak
Hardness as CaCO3	1820	mg/L		1		A2340 B	10/10/07 03:06 / klc
NUTRIENTS							
Nitrogen, Ammonia as N	1.4	mg/L		0.1		E350.1	10/11/07 12:51 / bls
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.05		E353.2	10/12/07 13:05 / bls
METALS, DISSOLVED							
Calcium	347	mg/L	D	2		E200.7	10/10/07 03:06 / rlh
Magnesium	231	mg/L		1		E200.7	10/10/07 03:06 / rlh
Potassium	14	mg/L		1		E200.7	10/10/07 03:06 / rlh
Silica	15.4	mg/L	D	0.9		E200.7	10/10/07 03:06 / rlh
Sodium	731	mg/L	D	2		E200.7	10/10/07 03:06 / rlh
METALS, TOTAL							
Silica	16.9	mg/L	D	0.9		E200.7	10/10/07 00:28 / rlh
QUALITY CONTROL							
A/C Balance Sigma	0.35					Calculation	10/11/07 12:07 / klc
Anions	68.8	meq/L		0.01		Calculation	10/11/07 12:07 / klc
Cations	68.4	meq/L		0.01		Calculation	10/11/07 12:07 / klc
A/C Balance	-0.30	%				Calculation	10/11/07 12:07 / klc
VOLATILE ORGANIC COMPOUNDS							
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8021B	10/11/07 22:58 / bjm
Benzene	ND	ug/L		0.50		SW8021B	10/11/07 22:58 / bjm
Toluene	ND	ug/L		0.50		SW8021B	10/11/07 22:58 / bjm
Ethylbenzene	ND	ug/L		0.50		SW8021B	10/11/07 22:58 / bjm
m+p-Xylenes	ND	ug/L		0.50		SW8021B	10/11/07 22:58 / bjm
o-Xylene	ND	ug/L		0.50		SW8021B	10/11/07 22:58 / bjm
Xylenes, Total	ND	ug/L		0.50		SW8021B	10/11/07 22:58 / bjm

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix interference.
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101
Lab ID: B07100632-048
Client Sample ID: Whitmer

Report Date: 10/25/07
Collection Date: 10/05/07 18:00
DateReceived: 10/08/07
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Surr: Trifluorotoluene	91.0	%REC		80-120		SW8021B	10/11/07 22:58 / bjm
ORGANIC CHARACTERISTICS							
Total Petroleum Hydrocarbons	ND	mg/L		0.10		E418.1	10/09/07 08:50 / bdw

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/23/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E418.1									Batch: R100551
Sample ID: MB-R100551	Method Blank				Run: BUCK IR_071006B				10/06/07 08:10
Total Petroleum Hydrocarbons	ND	mg/L	0.10						
Sample ID: LCS-R100551	Laboratory Control Sample				Run: BUCK IR_071006B				10/06/07 08:20
Total Petroleum Hydrocarbons	5.0	mg/L	0.10	100	85	115			
Method: E418.1									Batch: R100578
Sample ID: MB-R100578	Method Blank				Run: BUCK IR_071008A				10/08/07 06:30
Total Petroleum Hydrocarbons	ND	mg/L	0.10						
Sample ID: LCS-R100578	Laboratory Control Sample				Run: BUCK IR_071008A				10/08/07 06:40
Total Petroleum Hydrocarbons	4.9	mg/L	0.10	98	85	115			
Method: E418.1									Batch: R100627
Sample ID: MB-R100627	Method Blank				Run: BRUCE_S GC_071009A				10/09/07 07:20
Total Petroleum Hydrocarbons	ND	mg/L	0.10						
Sample ID: LCS-R100627	Laboratory Control Sample				Run: BRUCE_S GC_071009A				10/09/07 07:30
Total Petroleum Hydrocarbons	4.9	mg/L	0.10	98	85	115			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R100619
Sample ID: MB	Method Blank				Run: MAN-TECH_071008A				10/08/07 14:45
Alkalinity, Total as CaCO3	2	mg/L	1						
Bicarbonate as HCO3	3	mg/L	1						
Carbonate as CO3	ND	mg/L	1						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_071008A				10/08/07 14:51
Alkalinity, Total as CaCO3	98.7	mg/L	1.0	96	90	110			
Sample ID: B07100632-001AMS	Sample Matrix Spike				Run: MAN-TECH_071008A				10/08/07 15:14
Alkalinity, Total as CaCO3	515	mg/L	1.0	118	80	120			
Sample ID: B07100632-001AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071008A				10/08/07 15:23
Alkalinity, Total as CaCO3	500	mg/L	1.0	106	80	120	2.9	20	
Sample ID: B07100632-002AMS	Sample Matrix Spike				Run: MAN-TECH_071008A				10/08/07 17:10
Alkalinity, Total as CaCO3	542	mg/L	1.0	87	80	120			
Sample ID: B07100632-002AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071008A				10/08/07 17:18
Alkalinity, Total as CaCO3	539	mg/L	1.0	85	80	120	0.4	20	
Sample ID: B07100632-003AMS	Sample Matrix Spike				Run: MAN-TECH_071008A				10/08/07 19:04
Alkalinity, Total as CaCO3	517	mg/L	1.0	87	80	120			
Sample ID: B07100632-003AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071008A				10/08/07 19:13
Alkalinity, Total as CaCO3	542	mg/L	1.0	106	80	120	4.7	20	

Qualifiers:

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R100689
Sample ID: MB	Method Blank				Run: MAN-TECH_071009A				10/09/07 13:16
Alkalinity, Total as CaCO3	2	mg/L	1						
Bicarbonate as HCO3	2	mg/L	1						
Carbonate as CO3	ND	mg/L	1						
Hydroxide as OH	ND	mg/L	1						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_071009A				10/09/07 13:22
Alkalinity, Total as CaCO3	97.9	mg/L	1.0	96	90	110			
Sample ID: B07100615-002AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 17:32
Alkalinity, Total as CaCO3	153	mg/L	1.0	109	80	120			
Sample ID: B07100615-002AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 17:41
Alkalinity, Total as CaCO3	142	mg/L	1.0	100	80	120	7.6	20	
Sample ID: B07100632-012AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 19:35
Alkalinity, Total as CaCO3	825	mg/L	1.0	64	80	120			S
Sample ID: B07100632-012AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 19:45
Alkalinity, Total as CaCO3	847	mg/L	1.0	80	80	120	2.6	20	
Sample ID: B07100632-021AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 21:28
Alkalinity, Total as CaCO3	511	mg/L	1.0	99	80	120			
Sample ID: B07100632-021AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 21:38
Alkalinity, Total as CaCO3	504	mg/L	1.0	93	80	120	1.4	20	
Sample ID: B07100632-030AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 23:23
Alkalinity, Total as CaCO3	556	mg/L	1.0	86	80	120			
Sample ID: B07100632-030AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 23:32
Alkalinity, Total as CaCO3	553	mg/L	1.0	84	80	120	0.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R100778
Sample ID: MB	Method Blank				Run: MAN-TECH_071010A				10/10/07 14:32
Alkalinity, Total as CaCO3	2	mg/L	1						
Bicarbonate as HCO3	2	mg/L	1						
Carbonate as CO3	ND	mg/L	1						
Sample ID: LCS	Laboratory Control Sample				Run: MAN-TECH_071010A				10/10/07 14:40
Alkalinity, Total as CaCO3	98.5	mg/L	1.0	97	90	110			
Sample ID: B07100632-046AMS	Sample Matrix Spike				Run: MAN-TECH_071010A				10/10/07 15:26
Alkalinity, Total as CaCO3	388	mg/L	1.0	88	80	120			
Sample ID: B07100632-046AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071010A				10/10/07 15:34
Alkalinity, Total as CaCO3	391	mg/L	1.0	91	80	120	0.8	20	
Method: A2510 B									Batch: PHSC071005A
Sample ID: PHC1070810A	Laboratory Control Sample				Run: ORION555A_071005A				10/05/07 10:43
Conductivity	5070	umhos/cm	1.0	101	90	110			
Sample ID: PHC1070910A	Laboratory Control Sample				Run: ORION555A_071005A				10/05/07 10:44
Conductivity	154	umhos/cm	1.0	103	90	110			
Sample ID: B07100632-002A	Sample Duplicate				Run: ORION555A_071005A				10/05/07 17:55
Conductivity	4630	umhos/cm	1.0				0.2	10	
Sample ID: B07100632-012A	Sample Duplicate				Run: ORION555A_071005A				10/05/07 18:07
Conductivity	4320	umhos/cm	1.0				1.2	10	
Sample ID: B07100632-022A	Sample Duplicate				Run: ORION555A_071005A				10/05/07 18:23
Conductivity	2180	umhos/cm	1.0				0.3	10	
Sample ID: B07100632-032A	Sample Duplicate				Run: ORION555A_071005A				10/05/07 18:30
Conductivity	28000	umhos/cm	1.0				0.0	10	
Method: A2510 B									Batch: PHSC071008A
Sample ID: PHC1070810A	Laboratory Control Sample				Run: ORION555A_071008A				10/08/07 10:46
Conductivity	5070	umhos/cm	1.0	101	90	110			
Sample ID: PHC1070910A	Laboratory Control Sample				Run: ORION555A_071008A				10/08/07 10:46
Conductivity	154	umhos/cm	1.0	102	90	110			
Sample ID: B07100684-001ADUP	Sample Duplicate				Run: ORION555A_071008A				10/08/07 12:53
Conductivity	2390	umhos/cm	1.0				0.3	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS071005C
Sample ID: MBLK5	Method Blank				Run: WC-BAL-99-3A_071005B				10/05/07 17:47
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB5	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071005B				10/05/07 17:47
Solids, Total Dissolved TDS @ 180 C	1180	mg/L	10	102	90	110			
Sample ID: LFB6	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071005B				10/05/07 18:05
Solids, Total Dissolved TDS @ 180 C	1130	mg/L	10	100	90	110			
Sample ID: B07100632-003A MS	Sample Matrix Spike				Run: WC-BAL-99-3A_071005B				10/05/07 18:06
Solids, Total Dissolved TDS @ 180 C	5360	mg/L	10	101	80	120			
Sample ID: B07100632-003A MSD	Sample Matrix Spike Duplicate				Run: WC-BAL-99-3A_071005B				10/05/07 18:07
Solids, Total Dissolved TDS @ 180 C	5340	mg/L	10	100	80	120	0.4	20	
Method: A2540 C									Batch: TDS071005D
Sample ID: MBLK7	Method Blank				Run: WC-BAL-99-3A_071005B				10/05/07 18:24
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB7	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071005B				10/05/07 18:24
Solids, Total Dissolved TDS @ 180 C	1170	mg/L	10	101	90	110			
Sample ID: B07100632-014A MS	Sample Matrix Spike				Run: WC-BAL-99-3A_071005B				10/05/07 18:26
Solids, Total Dissolved TDS @ 180 C	67000	mg/L	10	93	80	120			
Sample ID: B07100632-014A MSD	Sample Matrix Spike Duplicate				Run: WC-BAL-99-3A_071005B				10/05/07 18:26
Solids, Total Dissolved TDS @ 180 C	66700	mg/L	10	97	80	120	0.5	20	

Qualifiers:

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: TDS071008A
Sample ID: MBLK1	Method Blank				Run: WC-BAL-99-3A_071008B				10/08/07 15:21
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB1	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071008B				10/08/07 15:25
Solids, Total Dissolved TDS @ 180 C	1130	mg/L	10	101	90	110			
Sample ID: B07100632-025A MS	Sample Matrix Spike				Run: WC-BAL-99-3A_071008B				10/08/07 15:26
Solids, Total Dissolved TDS @ 180 C	6170	mg/L	10	104	80	120			
Sample ID: B07100632-025A MSD	Sample Matrix Spike Duplicate				Run: WC-BAL-99-3A_071008B				10/08/07 15:27
Solids, Total Dissolved TDS @ 180 C	6150	mg/L	10	102	80	120	0.3	20	
Sample ID: LFB2	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071008B				10/08/07 15:45
Solids, Total Dissolved TDS @ 180 C	1110	mg/L	10	101	90	110			
Sample ID: B07100632-026A MS	Sample Matrix Spike				Run: WC-BAL-99-3A_071008B				10/08/07 15:46
Solids, Total Dissolved TDS @ 180 C	5700	mg/L	10	103	80	120			
Sample ID: B07100632-026A MSD	Sample Matrix Spike Duplicate				Run: WC-BAL-99-3A_071008B				10/08/07 15:46
Solids, Total Dissolved TDS @ 180 C	5760	mg/L	10	103	80	120	1.1	20	
Method: A2540 C									Batch: TDS071008B
Sample ID: MBLK3	Method Blank				Run: WC-BAL-99-3A_071008B				10/08/07 16:18
Solids, Total Dissolved TDS @ 180 C	ND	mg/L	10						
Sample ID: LFB3	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071008B				10/08/07 16:18
Solids, Total Dissolved TDS @ 180 C	1090	mg/L	10	98	90	110			
Sample ID: B07100632-027A MS	Sample Matrix Spike				Run: WC-BAL-99-3A_071008B				10/08/07 16:19
Solids, Total Dissolved TDS @ 180 C	15100	mg/L	10	98	80	120			
Sample ID: B07100632-027A MSD	Sample Matrix Spike Duplicate				Run: WC-BAL-99-3A_071008B				10/08/07 16:19
Solids, Total Dissolved TDS @ 180 C	15000	mg/L	10	98	80	120	0.3	20	
Sample ID: LFB4	Laboratory Fortified Blank				Run: WC-BAL-99-3A_071008B				10/08/07 16:45
Solids, Total Dissolved TDS @ 180 C	1150	mg/L	10	101	90	110			
Sample ID: B07100632-048A MS	Sample Matrix Spike				Run: WC-BAL-99-3A_071008B				10/08/07 16:47
Solids, Total Dissolved TDS @ 180 C	6550	mg/L	10	103	80	120			
Sample ID: B07100632-048A MSD	Sample Matrix Spike Duplicate				Run: WC-BAL-99-3A_071008B				10/08/07 16:47
Solids, Total Dissolved TDS @ 180 C	6420	mg/L	10	100	80	120	2.0	20	

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QA/QC Summary Report

Client: HKM Engineering Inc
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Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500 H								Analytical Run: ORION555A_071005A	
Sample ID: PHC10806A	Initial Calibration Verification Standard							10/05/07 10:44	
pH	6.99	s.u.	0.10	100	98	102			
Method: A4500 H								Batch: PHSC071005A	
Sample ID: PHC1070830A	Laboratory Control Sample				Run: ORION555A_071005A			10/05/07 10:45	
pH	3.90	s.u.	0.10	98	97	103			
Sample ID: B07100632-002A	Sample Duplicate				Run: ORION555A_071005A			10/05/07 17:56	
pH	7.15	s.u.	0.10				0.1	10	
Sample ID: B07100632-012A	Sample Duplicate				Run: ORION555A_071005A			10/05/07 18:07	
pH	7.18	s.u.	0.10				0.3	10	
Sample ID: B07100632-032A	Sample Duplicate				Run: ORION555A_071005A			10/05/07 18:42	
pH	7.15	s.u.	0.10				0.1	10	
Sample ID: B07100632-022A	Sample Duplicate				Run: ORION555A_071005A			10/05/07 18:49	
pH	7.55	s.u.	0.10				0.0	10	
Method: A4500 H								Analytical Run: ORION555A_071008A	
Sample ID: PHC10806A	Initial Calibration Verification Standard							10/08/07 10:45	
pH	7.02	s.u.	0.10	100	98	102			
Method: A4500 H								Batch: PHSC071008A	
Sample ID: PHC1070830A	Laboratory Control Sample				Run: ORION555A_071008A			10/08/07 10:46	
pH	3.92	s.u.	0.10	98	97	103			
Sample ID: B07100684-001ADUP	Sample Duplicate				Run: ORION555A_071008A			10/08/07 13:00	
pH	7.97	s.u.	0.10				0.1	10	
Method: A4500 H								Analytical Run: MAN-TECH_071010A	
Sample ID: 2ND7BUFFER	Initial Calibration Verification Standard							10/10/07 14:24	
pH	6.98	s.u.	0.10	100	98	102			
Method: A4500 H								Batch: R100778	
Sample ID: 4BUFFER	Laboratory Control Sample				Run: MAN-TECH_071010A			10/10/07 14:21	
pH	3.97	s.u.	0.10	99	97	103			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-F C								Analytical Run: MAN-TECH_071008A	
Sample ID: ICV	Initial Calibration Verification Standard							10/08/07 14:54	
Fluoride	0.960	mg/L	0.10	96	90	110			
Method: A4500-F C								Batch: R100619	
Sample ID: MB	Method Blank				Run: MAN-TECH_071008A			10/08/07 14:45	
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_071008A			10/08/07 14:57	
Fluoride	0.920	mg/L	0.10	92	90	110			
Sample ID: B07100632-001AMS	Sample Matrix Spike				Run: MAN-TECH_071008A			10/08/07 15:14	
Fluoride	1.33	mg/L	0.10	87	80	120			
Sample ID: B07100632-001AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071008A			10/08/07 15:23	
Fluoride	1.36	mg/L	0.10	90	80	120	2.2	10	
Sample ID: B07100632-002AMS	Sample Matrix Spike				Run: MAN-TECH_071008A			10/08/07 17:10	
Fluoride	1.07	mg/L	0.10	87	80	120			
Sample ID: B07100632-002AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071008A			10/08/07 17:18	
Fluoride	1.12	mg/L	0.10	92	80	120	4.6	10	
Sample ID: B07100632-003AMS	Sample Matrix Spike				Run: MAN-TECH_071008A			10/08/07 19:04	
Fluoride	1.20	mg/L	0.10	88	80	120			
Sample ID: B07100632-003AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071008A			10/08/07 19:13	
Fluoride	1.24	mg/L	0.10	92	80	120	3.3	10	

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QA/QC Summary Report

Client: HKM Engineering Inc
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Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-F C								Analytical Run: MAN-TECH_071009A	
Sample ID: ICV	Initial Calibration Verification Standard								10/09/07 13:25
Fluoride	0.970	mg/L	0.10	97	90	110			
Method: A4500-F C									Batch: R100689
Sample ID: MB	Method Blank				Run: MAN-TECH_071009A				10/09/07 13:16
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_071009A				10/09/07 13:28
Fluoride	0.980	mg/L	0.10	98	90	110			
Sample ID: B07100615-002AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 17:32
Fluoride	0.960	mg/L	0.10	91	80	120			
Sample ID: B07100615-002AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 17:41
Fluoride	0.900	mg/L	0.10	85	80	120	6.5	10	
Sample ID: B07100632-012AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 19:35
Fluoride	1.11	mg/L	0.10	88	80	120			
Sample ID: B07100632-012AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 19:45
Fluoride	1.16	mg/L	0.10	93	80	120	4.4	10	
Sample ID: B07100632-021AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 21:28
Fluoride	1.34	mg/L	0.10	87	80	120			
Sample ID: B07100632-021AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 21:38
Fluoride	1.36	mg/L	0.10	89	80	120	1.5	10	
Sample ID: B07100632-030AMS	Sample Matrix Spike				Run: MAN-TECH_071009A				10/09/07 23:23
Fluoride	1.36	mg/L	0.10	92	80	120			
Sample ID: B07100632-030AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071009A				10/09/07 23:32
Fluoride	1.36	mg/L	0.10	92	80	120	0.0	10	

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-F C								Analytical Run: MAN-TECH_071010A	
Sample ID: ICV	Initial Calibration Verification Standard							10/10/07 15:07	
Fluoride	0.970	mg/L	0.10	97	90	110			
Method: A4500-F C								Batch: R100778	
Sample ID: MB	Method Blank				Run: MAN-TECH_071010A			10/10/07 14:32	
Fluoride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: MAN-TECH_071010A			10/10/07 15:10	
Fluoride	0.980	mg/L	0.10	98	90	110			
Sample ID: B07100632-046AMS	Sample Matrix Spike				Run: MAN-TECH_071010A			10/10/07 15:26	
Fluoride	0.990	mg/L	0.10	83	80	120			
Sample ID: B07100632-046AMSD	Sample Matrix Spike Duplicate				Run: MAN-TECH_071010A			10/10/07 15:34	
Fluoride	1.03	mg/L	0.10	87	80	120	4.0	10	

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QA/QC Summary Report

Client: HKM Engineering Inc
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Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 29130
Sample ID: MB-29130	Method Blank				Run: ICP201-B_071008A				10/09/07 01:09
Calcium	2	mg/L	0.02						
Magnesium	ND	mg/L	0.1						
Potassium	ND	mg/L	0.07						
Silicon	0.06	mg/L	0.04						
Sodium	0.08	mg/L	0.04						
Silica	0.1	mg/L	0.09						
Sample ID: B07100632-008BMS2	Sample Matrix Spike				Run: ICP201-B_071008A				10/09/07 02:53
Calcium	6880	mg/L	22	99	70	130			
Magnesium	6240	mg/L	14	102	70	130			
Potassium	4960	mg/L	6.6	98	70	130			
Silicon	1010	mg/L	4.1	100	70	130			
Sodium	12800	mg/L	18	96	70	130			
Silica	2170	mg/L	8.8	100	70	130			
Sample ID: B07100632-008BMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071008A				10/09/07 02:57
Calcium	6900	mg/L	22	100	70	130	0.3	20	
Magnesium	6230	mg/L	14	101	70	130	0.3	20	
Potassium	5000	mg/L	6.6	99	70	130	0.8	20	
Silicon	1020	mg/L	4.1	101	70	130	0.3	20	
Sodium	13000	mg/L	18	101	70	130	1.9	20	
Silica	2170	mg/L	8.8	101	70	130	0.3	20	
Sample ID: B07100632-018BMS2	Sample Matrix Spike				Run: ICP201-B_071008A				10/09/07 03:47
Calcium	6290	mg/L	22	96	70	130			
Magnesium	5770	mg/L	14	99	70	130			
Potassium	5080	mg/L	6.6	101	70	130			
Silicon	1030	mg/L	4.1	102	70	130			
Sodium	14000	mg/L	18	99	70	130			
Silica	2200	mg/L	8.8	102	70	130			
Sample ID: B07100632-018BMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071008A				10/09/07 03:50
Calcium	6290	mg/L	22	97	70	130	0.0	20	
Magnesium	5770	mg/L	14	99	70	130	0.0	20	
Potassium	4900	mg/L	6.6	97	70	130	3.5	20	
Silicon	984	mg/L	4.1	97	70	130	4.4	20	
Sodium	13900	mg/L	18	97	70	130	0.8	20	
Silica	2100	mg/L	8.8	97	70	130	4.4	20	
Sample ID: B07100632-028BMS2	Sample Matrix Spike				Run: ICP201-B_071008A				10/09/07 04:44
Calcium	1910	mg/L	4.4	100	70	130			

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QA/QC Summary Report

Client: HKM Engineering Inc
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Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 29130
Sample ID: B07100632-028BMS2	Sample Matrix Spike				Run: ICP201-B_071008A				10/09/07 04:44
Magnesium	1580	mg/L	2.8	102	70	130			
Potassium	1010	mg/L	1.3	99	70	130			
Silicon	205	mg/L	0.83	100	70	130			
Sodium	3370	mg/L	3.7	111	70	130			
Silica	438	mg/L	1.8	100	70	130			
Sample ID: B07100632-028BMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071008A				10/09/07 04:48
Calcium	1910	mg/L	4.4	100	70	130	0.0	20	
Magnesium	1570	mg/L	2.8	102	70	130	0.5	20	
Potassium	1000	mg/L	1.3	98	70	130	0.8	20	
Silicon	205	mg/L	0.83	100	70	130	0.1	20	
Sodium	3300	mg/L	3.7	105	70	130	2.0	20	
Silica	438	mg/L	1.8	100	70	130	0.1	20	
Sample ID: B07100632-017BMS2	Sample Matrix Spike				Run: ICP201-B_071015A				10/15/07 16:34
Calcium	3020	mg/L	11	92	70	130			
Magnesium	2810	mg/L	7.1	94	70	130			
Potassium	2530	mg/L	3.3	100	70	130			
Silicon	520	mg/L	2.1	102	70	130			
Sodium	7940	mg/L	9.2	86	70	130			
Silica	1110	mg/L	4.4	102	70	130			
Sample ID: B07100632-017BMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071015A				10/15/07 16:45
Calcium	3010	mg/L	11	92	70	130	0.3	20	
Magnesium	2790	mg/L	7.1	93	70	130	0.7	20	
Potassium	2520	mg/L	3.3	99	70	130	0.5	20	
Silicon	521	mg/L	2.1	102	70	130	0.0	20	
Sodium	8030	mg/L	9.2	90	70	130	1.1	20	
Silica	1110	mg/L	4.4	102	70	130	0.0	20	

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Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 29149
Sample ID: MB-29149	Method Blank				Run: ICP201-B_071008A				10/09/07 05:14
Silicon	ND	mg/L	0.02						
Silica	ND	mg/L	0.04						
Sample ID: LCS3-29149	Laboratory Control Sample				Run: ICP201-B_071008A				10/09/07 05:22
Silicon	9.88	mg/L	0.10	99	85	115			
Silica	21.1	mg/L	0.21	99	70	130			
Sample ID: B07100613-001BMS3	Sample Matrix Spike				Run: ICP201-B_071008A				10/09/07 06:23
Silicon	22.1	mg/L	0.10	97	70	130			
Silica	47.2	mg/L	0.21	97	70	130			
Sample ID: B07100613-001BMSD3	Sample Matrix Spike Duplicate				Run: ICP201-B_071008A				10/09/07 06:27
Silicon	22.3	mg/L	0.10	99	70	130	1.1	20	
Silica	47.7	mg/L	0.21	99	70	130	1.1	20	

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Report Date: 10/24/07
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Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 29154
Sample ID: MB-29154	Method Blank				Run: ICP201-B_071009A				10/10/07 00:58
Calcium	1	mg/L	0.02						
Magnesium	ND	mg/L	0.1						
Potassium	ND	mg/L	0.07						
Silicon	ND	mg/L	0.04						
Sodium	ND	mg/L	0.04						
Silica	ND	mg/L	0.09						
Sample ID: B07100632-047BMS2	Sample Matrix Spike				Run: ICP201-B_071009A				10/10/07 02:58
Calcium	4740	mg/L	11	100	70	130			
Magnesium	4330	mg/L	7.1	104	70	130			
Potassium	2480	mg/L	3.3	98	70	130			
Silicon	516	mg/L	2.1	102	70	130			
Sodium	6820	mg/L	9.2	97	70	130			
Silica	1100	mg/L	4.4	102	70	130			
Sample ID: B07100632-047BMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071009A				10/10/07 03:02
Calcium	4760	mg/L	11	102	70	130	0.6	20	
Magnesium	4360	mg/L	7.1	105	70	130	0.7	20	
Potassium	2510	mg/L	3.3	99	70	130	1.3	20	
Silicon	521	mg/L	2.1	103	70	130	1.0	20	
Sodium	6900	mg/L	9.2	101	70	130	1.2	20	
Silica	1120	mg/L	4.4	103	70	130	1.0	20	
Sample ID: B07100684-006BMS2	Sample Matrix Spike				Run: ICP201-B_071009A				10/10/07 03:55
Calcium	623	mg/L	1.1	99	70	130			
Magnesium	259	mg/L	1.0	101	70	130			
Potassium	265	mg/L	1.0	100	70	130			
Silicon	60.5	mg/L	0.21	99	70	130			
Sodium	432	mg/L	1.0	101	70	130			
Silica	129	mg/L	0.44	99	70	130			
Sample ID: B07100684-006BMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071009A				10/10/07 04:07
Calcium	625	mg/L	1.1	100	70	130	0.3	20	
Magnesium	261	mg/L	1.0	101	70	130	0.8	20	
Potassium	258	mg/L	1.0	97	70	130	2.6	20	
Silicon	60.8	mg/L	0.21	100	70	130	0.5	20	
Sodium	426	mg/L	1.0	99	70	130	1.3	20	
Silica	130	mg/L	0.44	100	70	130	0.5	20	

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ND - Not detected at the reporting limit.

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800-735-4489 • 406-252-6325 • 406-252-6069 fax • eli@energylab.com

QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Batch: 29166
Sample ID: MB-29166	Method Blank				Run: ICP201-B_071009A				10/10/07 04:18
Silicon	ND	mg/L	0.03						
Silica	ND	mg/L	0.07						
Sample ID: LCS3-29166	Laboratory Control Sample				Run: ICP201-B_071009A				10/10/07 04:26
Silicon	10.2	mg/L	0.10	102	85	115			
Silica	21.8	mg/L	0.21	102	85	115			
Sample ID: B07100648-001CMS3	Sample Matrix Spike				Run: ICP201-B_071009A				10/10/07 05:27
Silicon	16.1	mg/L	0.10	105	70	130			
Silica	34.5	mg/L	0.21	105	70	130			
Sample ID: B07100648-001CMSD3	Sample Matrix Spike Duplicate				Run: ICP201-B_071009A				10/10/07 05:39
Silicon	16.1	mg/L	0.10	105	70	130	0.2	20	
Silica	34.5	mg/L	0.21	105	70	130	0.2	20	
Method: E200.7									Analytical Run: ICP201-B_071008A
Sample ID: QCS	Initial Calibration Verification Standard								10/08/07 13:54
Calcium	49.1	mg/L	1.0	98	90	110			
Magnesium	49.6	mg/L	1.0	99	90	110			
Potassium	48.7	mg/L	1.0	97	90	110			
Silicon	10.1	mg/L	0.10	101	90	110			
Sodium	50.0	mg/L	1.0	100	90	110			
Method: E200.7									Batch: R100634
Sample ID: MB-TJADIS071008A	Method Blank				Run: ICP201-B_071008A				10/08/07 14:24
Silicon	ND	mg/L	0.04						
Sample ID: LFB-TJADIS071008A	Laboratory Fortified Blank				Run: ICP201-B_071008A				10/08/07 14:28
Silicon	10.3	mg/L	0.10	103	85	115			
Sample ID: B07100632-031CMS2	Sample Matrix Spike				Run: ICP201-B_071008A				10/08/07 17:46
Silicon	285	mg/L	0.51	107	70	130			
Silica	609	mg/L	1.1	107	70	130			
Sample ID: B07100632-031CMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071008A				10/08/07 17:49
Silicon	293	mg/L	0.51	111	70	130	2.8	20	
Silica	627	mg/L	1.1	111	70	130	2.8	20	

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP201-B_071009A	
Sample ID: QCS	Initial Calibration Verification Standard							10/09/07 13:38	
Calcium	49.5	mg/L	1.0	99	90	110			
Magnesium	50.1	mg/L	1.0	100	90	110			
Potassium	49.3	mg/L	1.0	99	90	110			
Silicon	9.77	mg/L	0.10	98	90	110			
Sodium	49.0	mg/L	1.0	98	90	110			
Method: E200.7								Batch: R100691	
Sample ID: MB-TJADIS071009A	Method Blank				Run: ICP201-B_071009A			10/09/07 14:08	
Silicon	ND	mg/L	0.04						
Sample ID: LFB-TJADIS071009A	Laboratory Fortified Blank				Run: ICP201-B_071009A			10/09/07 14:11	
Silicon	9.69	mg/L	0.10	97	85	115			
Sample ID: B07092254-003CMS2	Sample Matrix Spike				Run: ICP201-B_071009A			10/10/07 00:05	
Silicon	57.4	mg/L	0.10	99	70	130			
Silica	123	mg/L	0.22	99	70	130			
Sample ID: B07092254-003CMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071009A			10/10/07 00:09	
Silicon	57.8	mg/L	0.10	100	70	130	0.8	20	
Silica	124	mg/L	0.22	100	70	130	0.8	20	
Method: E200.7								Analytical Run: ICP201-B_071016A	
Sample ID: QCS	Initial Calibration Verification Standard							10/16/07 12:09	
Calcium	49.3	mg/L	1.0	99	90	110			
Magnesium	49.7	mg/L	1.0	99	90	110			
Potassium	49.5	mg/L	1.0	99	90	110			
Silicon	10.1	mg/L	0.10	101	90	110			
Sodium	51.7	mg/L	1.0	103	90	110			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP201-B_071019A	
Sample ID: QCS	Initial Calibration Verification Standard							10/19/07 13:41	
Calcium	49.2	mg/L	1.0	98	90	110			
Magnesium	49.2	mg/L	1.0	98	90	110			
Potassium	49.6	mg/L	1.0	99	90	110			
Silicon	9.95	mg/L	0.10	100	90	110			
Sodium	50.1	mg/L	1.0	100	90	110			
Method: E200.7								Batch: R101248	
Sample ID: MB-TJADIS071019A	Method Blank				Run: ICP201-B_071019A			10/19/07 14:11	
Calcium	ND	mg/L	0.02						
Magnesium	ND	mg/L	0.1						
Potassium	ND	mg/L	0.07						
Silicon	ND	mg/L	0.04						
Sodium	ND	mg/L	0.04						
Sample ID: LFB-TJADIS071019A	Laboratory Fortified Blank				Run: ICP201-B_071019A			10/19/07 14:15	
Calcium	49.4	mg/L	1.0	99	85	115			
Magnesium	49.5	mg/L	1.0	99	85	115			
Potassium	50.7	mg/L	1.0	101	85	115			
Silicon	10.5	mg/L	0.10	105	85	115			
Sodium	52.4	mg/L	1.0	105	85	115			
Sample ID: B07100632-023AMS2	Sample Matrix Spike				Run: ICP201-B_071019A			10/19/07 15:19	
Calcium	959	mg/L	2.2	101	70	130			
Magnesium	959	mg/L	1.4	103	70	130			
Potassium	547	mg/L	1.0	105	70	130			
Silicon	132	mg/L	0.41	114	70	130			
Sodium	962	mg/L	1.8	112	70	130			
Silica	282	mg/L	0.88	114	70	130			
Sample ID: B07100632-023AMSD2	Sample Matrix Spike Duplicate				Run: ICP201-B_071019A			10/19/07 15:22	
Calcium	950	mg/L	2.2	99	70	130	1.0	20	
Magnesium	954	mg/L	1.4	102	70	130	0.5	20	
Potassium	537	mg/L	1.0	103	70	130	1.9	20	
Silicon	132	mg/L	0.41	114	70	130	0.1	20	
Sodium	948	mg/L	1.8	109	70	130	1.5	20	
Silica	281	mg/L	0.88	114	70	130	0.1	20	

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_071008A	
Sample ID: ICV	Initial Calibration Verification Standard							10/08/07 11:22	
Chloride	24.9	mg/L	1.0	100	90	110			
Sulfate	100	mg/L	1.0	100	90	110			
Method: E300.0								Batch: R100597	
Sample ID: ICB	Method Blank				Run: IC202-B_071008A			10/08/07 11:33	
Chloride	ND	mg/L	0.05						
Sulfate	0.05	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: IC202-B_071008A			10/08/07 11:45	
Chloride	9.51	mg/L	1.0	95	90	110			
Sulfate	39.3	mg/L	1.0	98	90	110			
Sample ID: B07100632-004AMS	Sample Matrix Spike				Run: IC202-B_071008A			10/10/07 12:06	
Chloride	634	mg/L	1.1	99	90	110			
Sulfate	3260	mg/L	1.0	103	90	110			
Sample ID: B07100632-004AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071008A			10/10/07 12:18	
Chloride	626	mg/L	1.1	98	90	110	1.2	20	
Sulfate	3230	mg/L	1.0	101	90	110	0.9	20	
Sample ID: B07100632-014AMS	Sample Matrix Spike				Run: IC202-B_071008A			10/10/07 14:49	
Chloride	45900	mg/L	11		90	110			A
Sulfate	21700	mg/L	10	101	90	110			
Sample ID: B07100632-014AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071008A			10/10/07 15:23	
Chloride	47900	mg/L	11		90	110	4.4	20	A
Sulfate	29400	mg/L	10	140	90	110	30	20	SR
Sample ID: B07100632-024AMS	Sample Matrix Spike				Run: IC202-B_071008A			10/10/07 17:54	
Chloride	553	mg/L	1.1	97	90	110			
Sulfate	4180	mg/L	1.0	106	90	110			
Sample ID: B07100632-024AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071008A			10/10/07 18:06	
Chloride	560	mg/L	1.1	99	90	110	1.4	20	
Sulfate	4210	mg/L	1.0	108	90	110	0.7	20	
Sample ID: B07100632-045AMS	Sample Matrix Spike				Run: IC202-B_071008A			10/10/07 20:37	
Chloride	30100	mg/L	11		90	110			A
Sulfate	21200	mg/L	10	100	90	110			
Sample ID: B07100632-045AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071008A			10/10/07 20:48	
Chloride	30200	mg/L	11		90	110	0.5	20	A

Qualifiers:

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ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

R - RPD exceeds advisory limit.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Batch: R100597
Sample ID: B07100632-045AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071008A				10/10/07 20:48
Sulfate	21400	mg/L	10	101	90	110	0.8	20	
Method: E300.0									Analytical Run: IC202-B_071011A
Sample ID: ICV	Initial Calibration Verification Standard								10/11/07 11:21
Chloride	25.1	mg/L	1.0	100	90	110			
Method: E300.0									Batch: R100852
Sample ID: ICB	Method Blank				Run: IC202-B_071011A				10/11/07 11:32
Chloride	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: IC202-B_071011A				10/11/07 11:44
Chloride	9.45	mg/L	1.0	95	90	110			
Sample ID: B07100632-001AMS	Sample Matrix Spike				Run: IC202-B_071011A				10/11/07 12:19
Chloride	318	mg/L	1.0	97	90	110			
Sample ID: B07100632-001AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071011A				10/11/07 12:30
Chloride	318	mg/L	1.0	96	90	110	0.3	20	
Sample ID: B07100684-001AMS	Sample Matrix Spike				Run: IC202-B_071011A				10/11/07 15:01
Chloride	107	mg/L	1.0	95	90	110			
Sample ID: B07100684-001AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071011A				10/11/07 15:12
Chloride	108	mg/L	1.0	97	90	110	0.5	20	

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QA/QC Summary Report

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Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0								Analytical Run: IC202-B_071012A	
Sample ID: ICV	Initial Calibration Verification Standard							10/12/07 09:53	
Chloride	24.9	mg/L	1.0	100	90	110			
Sulfate	100	mg/L	1.0	100	90	110			
Method: E300.0								Batch: R100917	
Sample ID: ICB	Method Blank				Run: IC202-B_071012A			10/12/07 10:05	
Chloride	ND	mg/L	0.05						
Sulfate	ND	mg/L	0.05						
Sample ID: LFB	Laboratory Fortified Blank				Run: IC202-B_071012A			10/12/07 10:17	
Chloride	9.19	mg/L	1.0	92	90	110			
Sulfate	37.7	mg/L	1.0	94	90	110			
Sample ID: B07100632-013AMS	Sample Matrix Spike				Run: IC202-B_071012A			10/13/07 00:35	
Chloride	596	mg/L	1.1	100	90	110			
Sulfate	4080	mg/L	1.0	106	90	110			
Sample ID: B07100632-013AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071012A			10/13/07 00:47	
Chloride	612	mg/L	1.1	103	90	110	2.6	20	
Sulfate	4130	mg/L	1.0	108	90	110	1.3	20	
Sample ID: B07100632-045AMS	Sample Matrix Spike				Run: IC202-B_071012A			10/13/07 03:29	
Chloride	30300	mg/L	11		90	110			A
Sulfate	21400	mg/L	10	101	90	110			
Sample ID: B07100632-045AMSD	Sample Matrix Spike Duplicate				Run: IC202-B_071012A			10/13/07 03:41	
Chloride	30200	mg/L	11		90	110	0.1	20	A
Sulfate	21400	mg/L	10	102	90	110	0.2	20	

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Report Date: 10/24/07
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Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E350.1								Analytical Run: FIA203-B_071011B	
Sample ID: ICV	Initial Calibration Verification Standard							10/11/07 11:36	
Nitrogen, Ammonia as N	17.0	mg/L	0.11	107	90	110			
Method: E350.1								Batch: R100841	
Sample ID: MBLK	Method Blank				Run: FIA203-B_071011B			10/11/07 11:37	
Nitrogen, Ammonia as N	ND	mg/L	0.02						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA203-B_071011B			10/11/07 11:39	
Nitrogen, Ammonia as N	1.07	mg/L	0.10	108	90	110			
Sample ID: B07100616-005DMS	Sample Matrix Spike				Run: FIA203-B_071011B			10/11/07 12:42	
Nitrogen, Ammonia as N	0.975	mg/L	0.10	99	90	110			
Sample ID: B07100616-005DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071011B			10/11/07 12:43	
Nitrogen, Ammonia as N	0.973	mg/L	0.10	99	90	110	0.2	10	
Sample ID: B07100632-001DMS	Sample Matrix Spike				Run: FIA203-B_071011B			10/11/07 12:58	
Nitrogen, Ammonia as N	1.00	mg/L	0.10	99	90	110			
Sample ID: B07100632-001DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071011B			10/11/07 12:59	
Nitrogen, Ammonia as N	1.00	mg/L	0.10	99	90	110	0.0	10	
Sample ID: B07100632-021DMS	Sample Matrix Spike				Run: FIA203-B_071011B			10/11/07 13:19	
Nitrogen, Ammonia as N	0.947	mg/L	0.10	97	90	110			
Sample ID: B07100632-021DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071011B			10/11/07 13:20	
Nitrogen, Ammonia as N	0.942	mg/L	0.10	96	90	110	0.5	10	
Sample ID: B07100632-010DMS	Sample Matrix Spike				Run: FIA203-B_071011B			10/11/07 14:06	
Nitrogen, Ammonia as N	1.49	mg/L	0.10	103	90	110			
Sample ID: B07100632-010DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071011B			10/11/07 14:08	
Nitrogen, Ammonia as N	1.49	mg/L	0.10	103	90	110	0.1	10	
Sample ID: B07100632-018DMS	Sample Matrix Spike				Run: FIA203-B_071011B			10/11/07 14:23	
Nitrogen, Ammonia as N	1.15	mg/L	0.10	99	90	110			
Sample ID: B07100632-018DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071011B			10/11/07 14:24	
Nitrogen, Ammonia as N	1.14	mg/L	0.10	98	90	110	1.2	10	

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Report Date: 10/24/07
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Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E353.2								Analytical Run: FIA203-B_071012A	
Sample ID: ICV	Initial Calibration Verification Standard							10/12/07 07:51	
Nitrogen, Nitrate+Nitrite as N	6.71	mg/L	0.050	99	90	110			
Method: E353.2								Batch: R100851	
Sample ID: MBLK	Method Blank				Run: FIA203-B_071012A			10/12/07 07:53	
Nitrogen, Nitrate+Nitrite as N	0.005	mg/L	0.002						
Sample ID: LFB	Laboratory Fortified Blank				Run: FIA203-B_071012A			10/12/07 07:54	
Nitrogen, Nitrate+Nitrite as N	1.02	mg/L	0.050	103	90	110			
Sample ID: B07100632-003DMS	Sample Matrix Spike				Run: FIA203-B_071012A			10/12/07 10:05	
Nitrogen, Nitrate+Nitrite as N	0.458	mg/L	0.050	47	90	110			S
Sample ID: B07100632-003DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071012A			10/12/07 10:07	
Nitrogen, Nitrate+Nitrite as N	0.459	mg/L	0.050	47	90	110	0.2	10	S
Sample ID: B07100632-018DMS	Sample Matrix Spike				Run: FIA203-B_071012A			10/12/07 11:24	
Nitrogen, Nitrate+Nitrite as N	18.4	mg/L	0.050	104	90	110			
Sample ID: B07100632-018DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071012A			10/12/07 11:26	
Nitrogen, Nitrate+Nitrite as N	18.5	mg/L	0.050	104	90	110	0.2	10	
Sample ID: B07100632-022DMS	Sample Matrix Spike				Run: FIA203-B_071012A			10/12/07 11:41	
Nitrogen, Nitrate+Nitrite as N	1.65	mg/L	0.050	101	90	110			
Sample ID: B07100632-022DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071012A			10/12/07 11:42	
Nitrogen, Nitrate+Nitrite as N	1.65	mg/L	0.050	101	90	110	0.1	10	
Sample ID: B07100615-001DMS	Sample Matrix Spike				Run: FIA203-B_071012A			10/12/07 12:40	
Nitrogen, Nitrate+Nitrite as N	1.11	mg/L	0.050	99	90	110			
Sample ID: B07100615-001DMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071012A			10/12/07 12:41	
Nitrogen, Nitrate+Nitrite as N	1.11	mg/L	0.050	98	90	110	0.5	10	
Sample ID: B07100671-001BMS	Sample Matrix Spike				Run: FIA203-B_071012A			10/12/07 12:57	
Nitrogen, Nitrate+Nitrite as N	0.949	mg/L	0.050	96	90	110			
Sample ID: B07100671-001BMSD	Sample Matrix Spike Duplicate				Run: FIA203-B_071012A			10/12/07 12:58	
Nitrogen, Nitrate+Nitrite as N	0.945	mg/L	0.050	96	90	110	0.4	10	

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S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/24/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E418.1									Batch: R100551
Sample ID: MB-R100551	Method Blank				Run: BUCK IR_071006B				10/06/07 08:10
Total Petroleum Hydrocarbons	ND	mg/L	0.10						
Sample ID: LCS-R100551	Laboratory Control Sample				Run: BUCK IR_071006B				10/06/07 08:20
Total Petroleum Hydrocarbons	5.0	mg/L	0.10	100	85	115			
Method: E418.1									Batch: R100578
Sample ID: MB-R100578	Method Blank				Run: BUCK IR_071008A				10/08/07 06:30
Total Petroleum Hydrocarbons	ND	mg/L	0.10						
Sample ID: LCS-R100578	Laboratory Control Sample				Run: BUCK IR_071008A				10/08/07 06:40
Total Petroleum Hydrocarbons	4.9	mg/L	0.10	98	85	115			
Method: E418.1									Batch: R100627
Sample ID: MB-R100627	Method Blank				Run: BRUCE_S GC_071009A				10/09/07 07:20
Total Petroleum Hydrocarbons	ND	mg/L	0.10						
Sample ID: LCS-R100627	Laboratory Control Sample				Run: BRUCE_S GC_071009A				10/09/07 07:30
Total Petroleum Hydrocarbons	4.9	mg/L	0.10	98	85	115			

Qualifiers:

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: VARIAN1_071009A	
Sample ID: CCV_1009VAR03r-W	Continuing Calibration Verification Standard								10/09/07 13:23
Methyl tert-butyl ether (MTBE)	65.4	ug/L	1.0	109	85	115			
Benzene	21.1	ug/L	0.50	106	85	115			
Toluene	65.9	ug/L	0.50	110	85	115			
Ethylbenzene	21.0	ug/L	0.50	105	85	115			
m+p-Xylenes	84.6	ug/L	0.50	106	85	115			
o-Xylene	43.4	ug/L	0.50	108	85	115			
Xylenes, Total	128	ug/L	0.50	107	85	115			
Surr: Trifluorotoluene			0.50	107	85	115			
Method: SW8021B								Batch: R100695	
Sample ID: LCS_1009VAR04r	Laboratory Control Sample				Run: VARIAN1_071009A				10/09/07 13:58
Methyl tert-butyl ether (MTBE)	19.8	ug/L	1.0	99	70	130			
Benzene	22.2	ug/L	0.50	111	70	130			
Toluene	21.6	ug/L	0.50	108	70	130			
Ethylbenzene	20.9	ug/L	0.50	105	70	130			
m+p-Xylenes	43.7	ug/L	0.50	109	70	130			
o-Xylene	21.3	ug/L	0.50	106	70	130			
Xylenes, Total	64.9	ug/L	0.50	108	70	130			
Surr: Trifluorotoluene			0.50	110	80	120			
Sample ID: MBLK_1009VAR05r	Method Blank				Run: VARIAN1_071009A				10/09/07 14:32
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	104	80	120			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE2_071009A	
Sample ID: CCV_1009PE205r-W	Continuing Calibration Verification Standard								10/09/07 14:46
Methyl tert-butyl ether (MTBE)	57.3	ug/L	1.0	96	85	115			
Benzene	19.1	ug/L	0.50	95	85	115			
Toluene	59.8	ug/L	0.50	100	85	115			
Ethylbenzene	19.9	ug/L	0.50	99	85	115			
m+p-Xylenes	76.3	ug/L	0.50	95	85	115			
o-Xylene	41.5	ug/L	0.50	104	85	115			
Xylenes, Total	118	ug/L	0.50	98	85	115			
Surr: Trifluorotoluene			0.50	96	85	115			
Method: SW8021B								Batch: R100714	
Sample ID: LCS_1009PE203r	Laboratory Control Sample				Run: PE2_071009A				10/09/07 13:33
Methyl tert-butyl ether (MTBE)	20.3	ug/L	1.0	101	70	130			
Benzene	19.9	ug/L	0.50	100	70	130			
Toluene	20.1	ug/L	0.50	101	70	130			
Ethylbenzene	19.2	ug/L	0.50	96	70	130			
m+p-Xylenes	40.3	ug/L	0.50	101	70	130			
o-Xylene	19.8	ug/L	0.50	99	70	130			
Xylenes, Total	60.1	ug/L	0.50	100	70	130			
Surr: Trifluorotoluene			0.50	92	80	120			
Sample ID: MBLK_1009PE207r	Method Blank				Run: PE2_071009A				10/09/07 15:59
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	86	80	120			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: VARIAN1_071010B	
Sample ID: CCV_1010VAR02r-W	Continuing Calibration Verification Standard								10/10/07 09:52
Methyl tert-butyl ether (MTBE)	59.6	ug/L	1.0	99	85	115			
Benzene	20.0	ug/L	0.50	100	85	115			
Toluene	62.8	ug/L	0.50	105	85	115			
Ethylbenzene	20.0	ug/L	0.50	100	85	115			
m+p-Xylenes	81.3	ug/L	0.50	102	85	115			
o-Xylene	41.4	ug/L	0.50	104	85	115			
Xylenes, Total	123	ug/L	0.50	102	85	115			
Surr: Trifluorotoluene			0.50	105	85	115			
Method: SW8021B								Batch: R100785	
Sample ID: LCS_1010VAR03r	Laboratory Control Sample				Run: VARIAN1_071010B				10/10/07 10:27
Methyl tert-butyl ether (MTBE)	18.2	ug/L	1.0	91	70	130			
Benzene	21.0	ug/L	0.50	105	70	130			
Toluene	20.5	ug/L	0.50	103	70	130			
Ethylbenzene	20.1	ug/L	0.50	101	70	130			
m+p-Xylenes	42.0	ug/L	0.50	105	70	130			
o-Xylene	20.4	ug/L	0.50	102	70	130			
Xylenes, Total	62.4	ug/L	0.50	104	70	130			
Surr: Trifluorotoluene			0.50	102	80	120			
Sample ID: MBLK_1010VAR04r	Method Blank				Run: VARIAN1_071010B				10/10/07 11:02
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	99	80	120			
Sample ID: B07100632-016FMS	Sample Matrix Spike				Run: VARIAN1_071010B				10/10/07 20:21
Methyl tert-butyl ether (MTBE)	43.9	ug/L	2.0	88	70	130			
Benzene	62.0	ug/L	1.0	101	70	130			
Toluene	49.0	ug/L	1.0	98	70	130			
Ethylbenzene	47.7	ug/L	1.0	95	70	130			
m+p-Xylenes	97.8	ug/L	1.0	98	70	130			
o-Xylene	47.9	ug/L	1.0	96	70	130			
Xylenes, Total	146	ug/L	1.0	97	70	130			
Surr: Trifluorotoluene			1.0	95	80	120			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R100785
Sample ID: B07100632-016FMSD	Sample Matrix Spike Duplicate				Run: VARIAN1_071010B			10/10/07 20:56	
Methyl tert-butyl ether (MTBE)	45.3	ug/L	2.0	91	70	130	3.1	20	
Benzene	63.2	ug/L	1.0	104	70	130	2.0	20	
Toluene	49.8	ug/L	1.0	100	70	130	1.7	20	
Ethylbenzene	48.4	ug/L	1.0	97	70	130	1.3	20	
m+p-Xylenes	98.9	ug/L	1.0	99	70	130	1.1	20	
o-Xylene	48.6	ug/L	1.0	97	70	130	1.5	20	
Xylenes, Total	148	ug/L	1.0	98	70	130			
Surr: Trifluorotoluene			1.0	94	80	120	0.0	20	

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: VARIAN1_071011A	
Sample ID: CCV_1011VAR03r-W	Continuing Calibration Verification Standard								10/11/07 10:44
Methyl tert-butyl ether (MTBE)	61.5	ug/L	1.0	102	85	115			
Benzene	20.8	ug/L	0.50	104	85	115			
Toluene	65.9	ug/L	0.50	110	85	115			
Ethylbenzene	21.0	ug/L	0.50	105	85	115			
m+p-Xylenes	85.7	ug/L	0.50	107	85	115			
o-Xylene	43.7	ug/L	0.50	109	85	115			
Xylenes, Total	129	ug/L	0.50	108	85	115			
Surr: Trifluorotoluene			0.50	107	85	115			
Method: SW8021B									Batch: R100861
Sample ID: MBLK_1011VAR05r	Method Blank				Run: VARIAN1_071011A				10/11/07 12:04
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	105	80	120			
Sample ID: LCS_1011VAR06r	Laboratory Control Sample				Run: VARIAN1_071011A				10/11/07 12:39
Methyl tert-butyl ether (MTBE)	18.9	ug/L	1.0	94	70	130			
Benzene	22.4	ug/L	0.50	112	70	130			
Toluene	22.2	ug/L	0.50	111	70	130			
Ethylbenzene	22.1	ug/L	0.50	111	70	130			
m+p-Xylenes	46.1	ug/L	0.50	115	70	130			
o-Xylene	22.4	ug/L	0.50	112	70	130			
Xylenes, Total	68.4	ug/L	0.50	114	70	130			
Surr: Trifluorotoluene			0.50	107	80	120			
Sample ID: B07100632-020FMS	Sample Matrix Spike				Run: VARIAN1_071011A				10/11/07 14:40
Methyl tert-butyl ether (MTBE)	47.0	ug/L	2.0	94	70	130			
Benzene	87.8	ug/L	1.0	115	70	130			
Toluene	51.4	ug/L	1.0	103	70	130			
Ethylbenzene	50.1	ug/L	1.0	100	70	130			
m+p-Xylenes	103	ug/L	1.0	103	70	130			
o-Xylene	50.7	ug/L	1.0	101	70	130			
Xylenes, Total	153	ug/L	1.0	102	70	130			
Surr: Trifluorotoluene			1.0	101	80	120			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R100861
Sample ID: B07100632-020FMSD	Sample Matrix Spike Duplicate				Run: VARIAN1_071011A				10/11/07 15:15
Methyl tert-butyl ether (MTBE)	49.6	ug/L	2.0	99	70	130	5.5	20	
Benzene	89.0	ug/L	1.0	118	70	130	1.3	20	
Toluene	53.5	ug/L	1.0	107	70	130	4.1	20	
Ethylbenzene	52.3	ug/L	1.0	105	70	130	4.3	20	
m+p-Xylenes	107	ug/L	1.0	107	70	130	4.2	20	
o-Xylene	52.9	ug/L	1.0	106	70	130	4.4	20	
Xylenes, Total	160	ug/L	1.0	107	70	130			
Surr: Trifluorotoluene			1.0	103	80	120	0.0	20	
Method: SW8021B									Analytical Run: PE2_071010A
Sample ID: CCV_1010PE204r-W	Continuing Calibration Verification Standard								10/10/07 13:46
Methyl tert-butyl ether (MTBE)	55.8	ug/L	1.0	93	85	115			
Benzene	18.5	ug/L	0.50	93	85	115			
Toluene	57.3	ug/L	0.50	96	85	115			
Ethylbenzene	18.7	ug/L	0.50	94	85	115			
m+p-Xylenes	75.2	ug/L	0.50	94	85	115			
o-Xylene	38.8	ug/L	0.50	97	85	115			
Xylenes, Total	114	ug/L	0.50	95	85	115			
Surr: Trifluorotoluene			0.50	98	85	115			
Method: SW8021B									Batch: R101024
Sample ID: LCS_1010PE203r	Laboratory Control Sample				Run: PE2_071010A				10/10/07 13:10
Methyl tert-butyl ether (MTBE)	19.6	ug/L	1.0	98	70	130			
Benzene	20.0	ug/L	0.50	100	70	130			
Toluene	20.2	ug/L	0.50	101	70	130			
Ethylbenzene	19.5	ug/L	0.50	98	70	130			
m+p-Xylenes	40.9	ug/L	0.50	102	70	130			
o-Xylene	20.5	ug/L	0.50	102	70	130			
Xylenes, Total	61.4	ug/L	0.50	102	70	130			
Surr: Trifluorotoluene			0.50	99	80	120			
Sample ID: MBLK_1010PE207r	Method Blank				Run: PE2_071010A				10/10/07 15:37
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	101	80	120			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE2_071011A	
Sample ID: CCV_1011PE204r-W	Continuing Calibration Verification Standard							10/11/07 13:08	
Methyl tert-butyl ether (MTBE)	55.1	ug/L	1.0	92	85	115			
Benzene	18.2	ug/L	0.50	91	85	115			
Toluene	56.0	ug/L	0.50	93	85	115			
Ethylbenzene	18.3	ug/L	0.50	91	85	115			
m+p-Xylenes	73.4	ug/L	0.50	92	85	115			
o-Xylene	37.8	ug/L	0.50	94	85	115			
Xylenes, Total	111	ug/L	0.50	93	85	115			
Surr: Trifluorotoluene			0.50	97	85	115			
Method: SW8021B								Batch: R101026	
Sample ID: LCS_1011PE203r	Laboratory Control Sample				Run: PE2_071011A			10/11/07 12:31	
Methyl tert-butyl ether (MTBE)	19.8	ug/L	1.0	99	70	130			
Benzene	19.0	ug/L	0.50	95	70	130			
Toluene	19.4	ug/L	0.50	97	70	130			
Ethylbenzene	18.5	ug/L	0.50	92	70	130			
m+p-Xylenes	38.6	ug/L	0.50	97	70	130			
o-Xylene	19.4	ug/L	0.50	97	70	130			
Xylenes, Total	58.0	ug/L	0.50	97	70	130			
Surr: Trifluorotoluene			0.50	98	80	120			
Sample ID: MBLK_1011PE207r	Method Blank				Run: PE2_071011A			10/11/07 14:58	
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	91	80	120			

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Blere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B								Analytical Run: PE2_071016A	
Sample ID: CCV_1016PE204r-W	Continuing Calibration Verification Standard							10/16/07 13:17	
Methyl tert-butyl ether (MTBE)	53.2	ug/L	1.0	89	85	115			
Benzene	17.3	ug/L	0.50	87	85	115			
Toluene	52.8	ug/L	0.50	88	85	115			
Ethylbenzene	17.1	ug/L	0.50	86	85	115			
m+p-Xylenes	68.5	ug/L	0.50	86	85	115			
o-Xylene	35.3	ug/L	0.50	88	85	115			
Xylenes, Total	104	ug/L	0.50	87	85	115			
Surr: Trifluorotoluene			0.50	86	85	115			
Method: SW8021B								Batch: R101075	
Sample ID: LCS_1016PE203r	Laboratory Control Sample				Run: PE2_071016A			10/16/07 12:41	
Methyl tert-butyl ether (MTBE)	16.5	ug/L	1.0	82	70	130			
Benzene	17.1	ug/L	0.50	86	70	130			
Toluene	17.7	ug/L	0.50	88	70	130			
Ethylbenzene	17.1	ug/L	0.50	85	70	130			
m+p-Xylenes	35.9	ug/L	0.50	90	70	130			
o-Xylene	18.1	ug/L	0.50	91	70	130			
Xylenes, Total	54.1	ug/L	0.50	90	70	130			
Surr: Trifluorotoluene			0.50	89	80	120			
Sample ID: MBLK_1016PE207r	Method Blank				Run: PE2_071016A			10/16/07 15:08	
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	84	80	120			
Sample ID: B07100632-030AMS	Sample Matrix Spike				Run: PE2_071016A			10/16/07 20:04	
Methyl tert-butyl ether (MTBE)	54.3	ug/L	2.0	109	70	130			
Benzene	53.0	ug/L	1.0	106	70	130			
Toluene	52.8	ug/L	1.0	106	70	130			
Ethylbenzene	49.4	ug/L	1.0	97	70	130			
m+p-Xylenes	102	ug/L	1.0	102	70	130			
o-Xylene	53.1	ug/L	1.0	106	70	130			
Xylenes, Total	155	ug/L	1.0	103	70	130			
Surr: Trifluorotoluene			1.0	104	80	120			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: HKM Engineering Inc
Project: Pioneer Natural Resources Biere I-22 14B805 101

Report Date: 10/17/07
Work Order: B07100632

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8021B									Batch: R101075
Sample ID: B07100632-030AMSD	Sample Matrix Spike Duplicate				Run: PE2_071016A				10/16/07 21:18
Methyl tert-butyl ether (MTBE)	52.6	ug/L	2.0	105	70	130	3.0	20	
Benzene	52.9	ug/L	1.0	106	70	130	0.2	20	
Toluene	52.8	ug/L	1.0	106	70	130	0.0	20	
Ethylbenzene	49.5	ug/L	1.0	98	70	130	0.1	20	
m+p-Xylenes	102	ug/L	1.0	102	70	130	0.5	20	
o-Xylene	51.6	ug/L	1.0	103	70	130	3.0	20	
Xylenes, Total	154	ug/L	1.0	103	70	130			
Surr: Trifluorotoluene			1.0	105	80	120	0.0	20	
Method: SW8021B									Analytical Run: PE2_071012A
Sample ID: CCV_1012PE204r-W	Continuing Calibration Verification Standard								10/12/07 12:17
Methyl tert-butyl ether (MTBE)	53.0	ug/L	1.0	88	85	115			
Benzene	17.2	ug/L	0.50	86	85	115			
Toluene	52.7	ug/L	0.50	88	85	115			
Ethylbenzene	17.2	ug/L	0.50	86	85	115			
m+p-Xylenes	69.1	ug/L	0.50	86	85	115			
o-Xylene	35.8	ug/L	0.50	90	85	115			
Xylenes, Total	105	ug/L	0.50	87	85	115			
Surr: Trifluorotoluene			0.50	92	85	115			
Method: SW8021B									Batch: R101079
Sample ID: LCS_1012PE203r	Laboratory Control Sample				Run: PE2_071012A				10/12/07 11:40
Methyl tert-butyl ether (MTBE)	19.2	ug/L	1.0	96	70	130			
Benzene	18.3	ug/L	0.50	91	70	130			
Toluene	19.2	ug/L	0.50	96	70	130			
Ethylbenzene	18.0	ug/L	0.50	90	70	130			
m+p-Xylenes	37.8	ug/L	0.50	94	70	130			
o-Xylene	18.9	ug/L	0.50	95	70	130			
Xylenes, Total	56.7	ug/L	0.50	94	70	130			
Surr: Trifluorotoluene			0.50	93	80	120			
Sample ID: MBLK_1012PE207r	Method Blank				Run: PE2_071012A				10/12/07 14:08
Methyl tert-butyl ether (MTBE)	ND	ug/L	1.0						
Benzene	ND	ug/L	0.50						
Toluene	ND	ug/L	0.50						
Ethylbenzene	ND	ug/L	0.50						
m+p-Xylenes	ND	ug/L	0.50						
o-Xylene	ND	ug/L	0.50						
Xylenes, Total	ND	ug/L	0.50						
Surr: Trifluorotoluene			0.50	88	80	120			

Qualifiers:

RL - Analyte reporting limit

ND - Not detected at the reporting limit.

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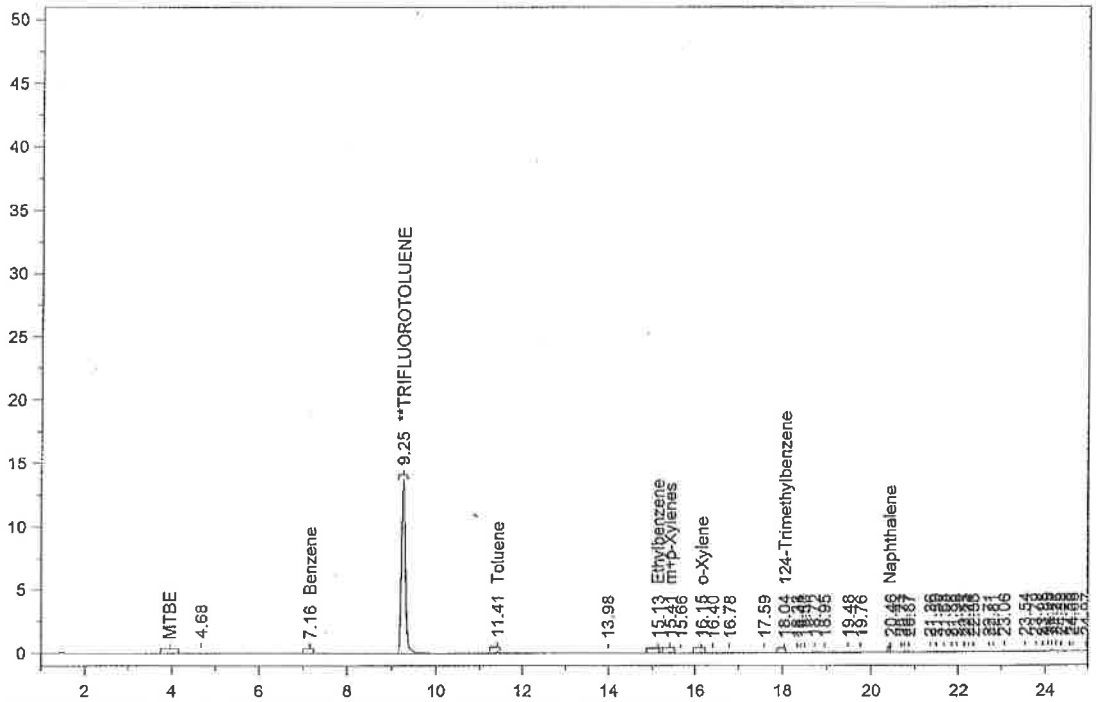
MOC-3

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0006.RAW B07100632-001F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-001F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0006.RAW
Date & Time Acquired: 10/9/2007 3:21:46 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.158	7.158	7.158	174	.5	U
Toluene	11.406	11.406	11.406	882	.5	U
Ethylbenzene	15.128	15.128	15.128	125	.5	U
m+p-Xylenes	15.409	15.409	15.409	340	.5	U
o-Xylene	16.147	16.147	16.147	162	.5	U
124-Trimethylbenzene	18.045	18.045	18.045	108	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.251	50.	50.458	100.92	80-120

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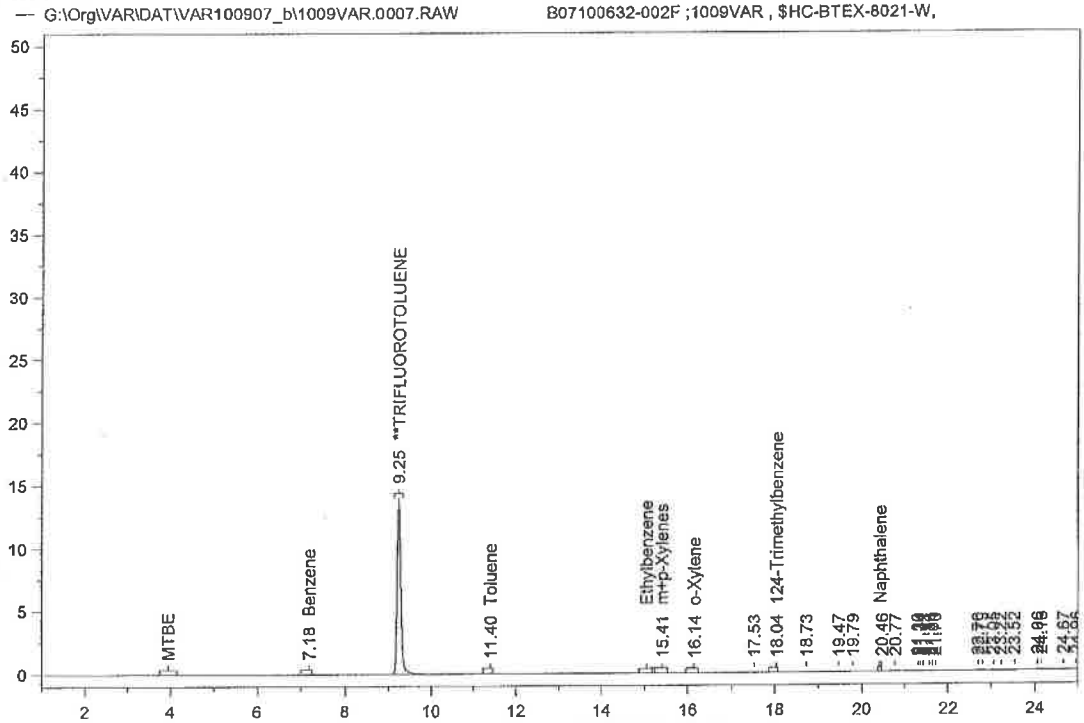
MOC-16

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0007.RAW B07100632-002F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-002F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0007.RAW
Date & Time Acquired: 10/9/2007 3:56:37 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.185	7.185	7.185	116	.5	U
Toluene	11.4	11.4	11.4	403	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.406	15.406	15.406	153	.5	U
o-Xylene	16.144	16.144	16.144	84	.5	U
124-Trimethylbenzene	18.041	18.041	18.041	66	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.246	50.	51.109	102.22	80-120

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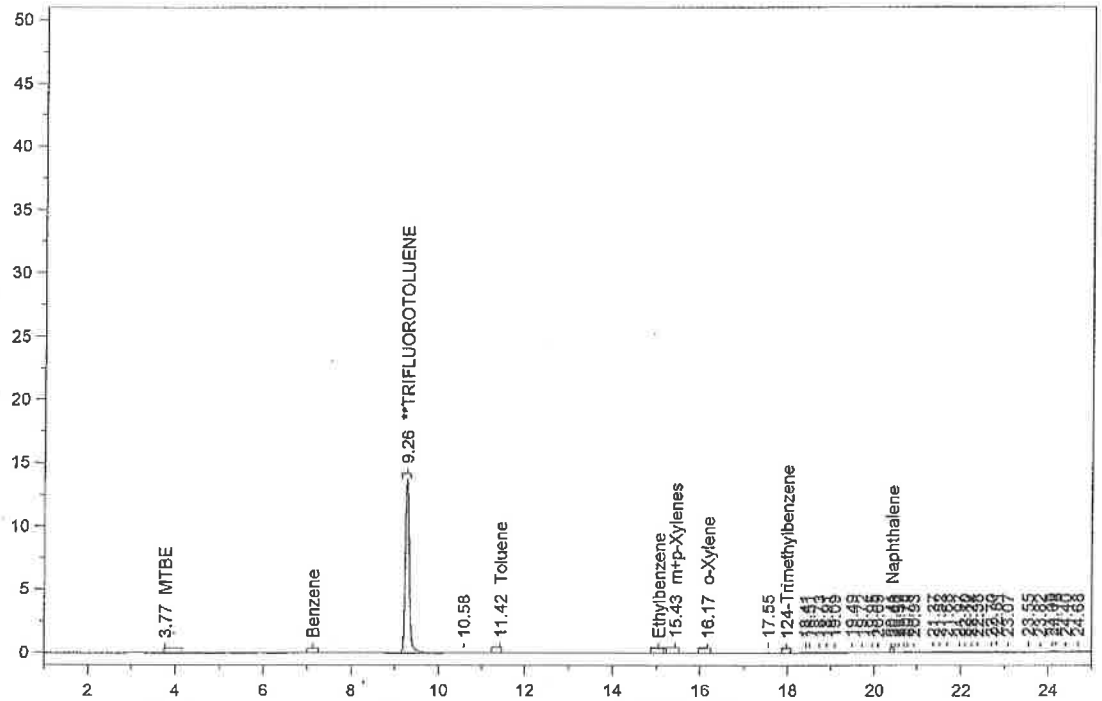
MOC-20b
— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0008.RAW B07100632-003F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-003F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0008.RAW
Date & Time Acquired: 10/9/2007 4:31:20 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.77	3.77	3.77	175	1.	U
Benzene	.	.	.		.5	U
Toluene	11.423	11.423	11.423	337	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.429	15.429	15.429	174	.5	U
o-Xylene	16.168	16.168	16.168	84	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.407	20.407	20.407	170	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.264	50.	50.619	101.24	80-120

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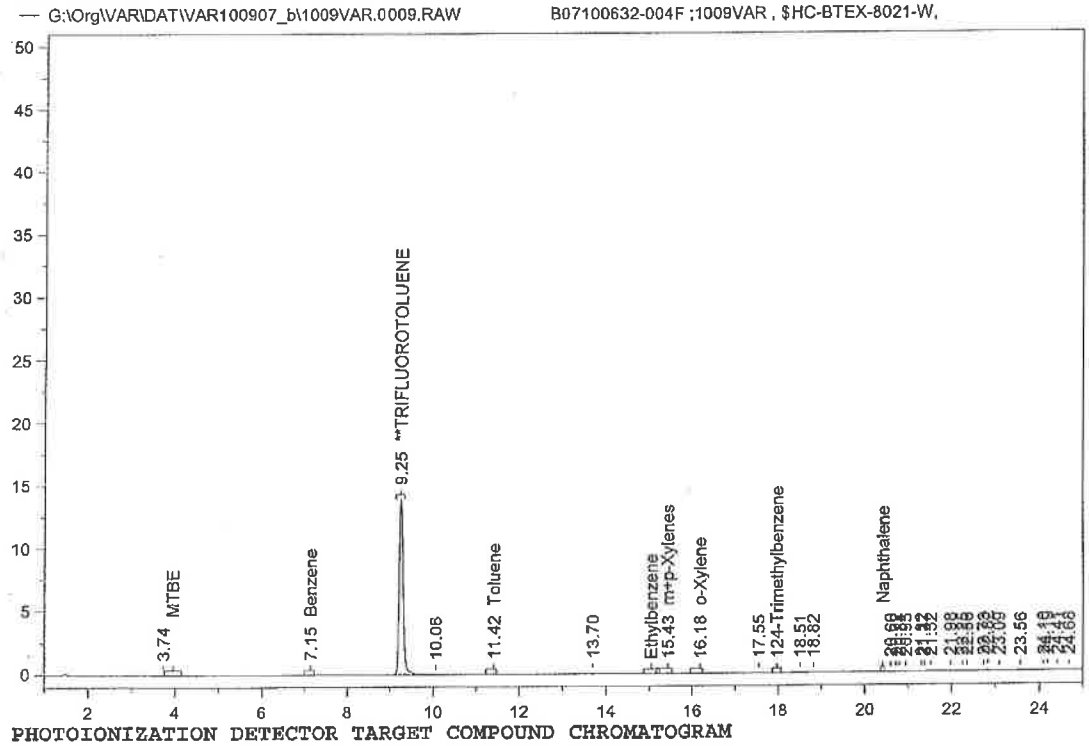
PNR-36-07

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0009.RAW B07100632-004F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-004F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0009.RAW
Date & Time Acquired: 10/9/2007 5:06:02 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.145	7.145	7.145	80	.5	U
Toluene	11.419	11.419	11.419	275	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.43	15.43	15.43	150	.5	U
o-Xylene	16.177	16.177	16.177	79	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.254	50.	50.82	101.64	80-120

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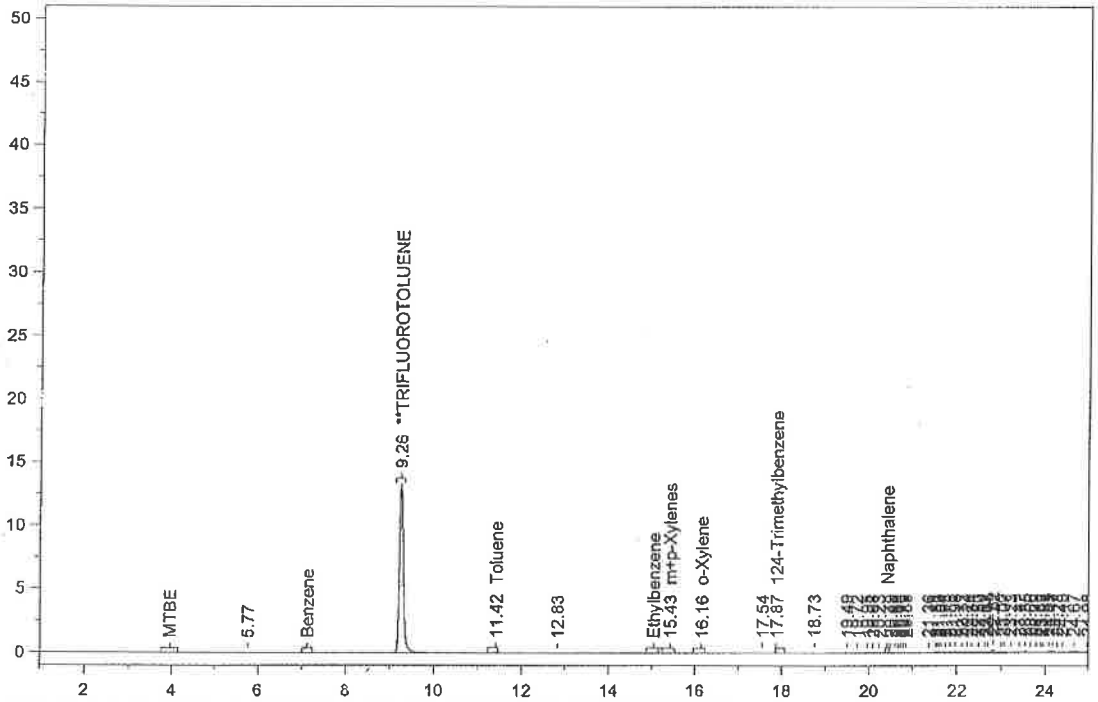
PNR-10
— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0010.RAW B07100632-005F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-005F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0010.RAW
Date & Time Acquired: 10/9/2007 5:40:51 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	11.418	11.418	11.418	367	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.427	15.427	15.427	199	.5	U
o-Xylene	16.158	16.158	16.158	122	.5	U
124-Trimethylbenzene	17.871	17.871	17.871	99	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.256	50.	49.501	99.	80-120

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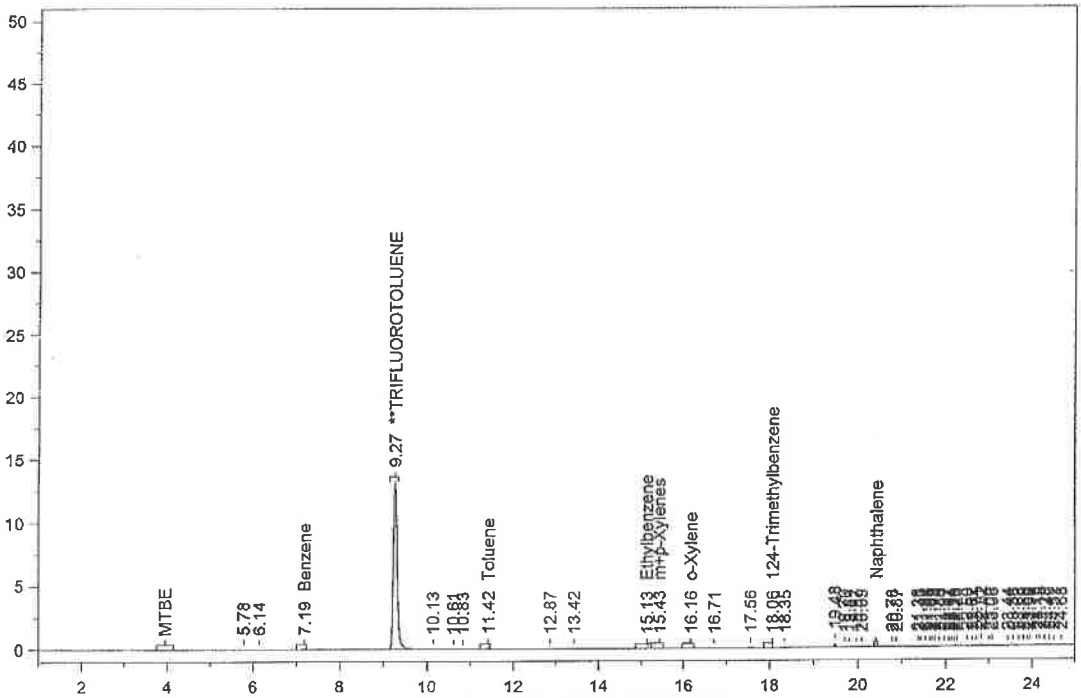
MOC-20A

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0011.RAW B07100632-006F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-006F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0011.RAW
Date & Time Acquired: 10/9/2007 6:16:10 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.193	7.193	7.193	245	.5	U
Toluene	11.419	11.419	11.419	596	.5	U
Ethylbenzene	15.132	15.132	15.132	94	.5	U
m+p-Xylenes	15.426	15.426	15.426	291	.5	U
o-Xylene	16.165	16.165	16.165	145	.5	U
124-Trimethylbenzene	18.061	18.061	18.061	77	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.269	50.	49.025	98.05	80-120

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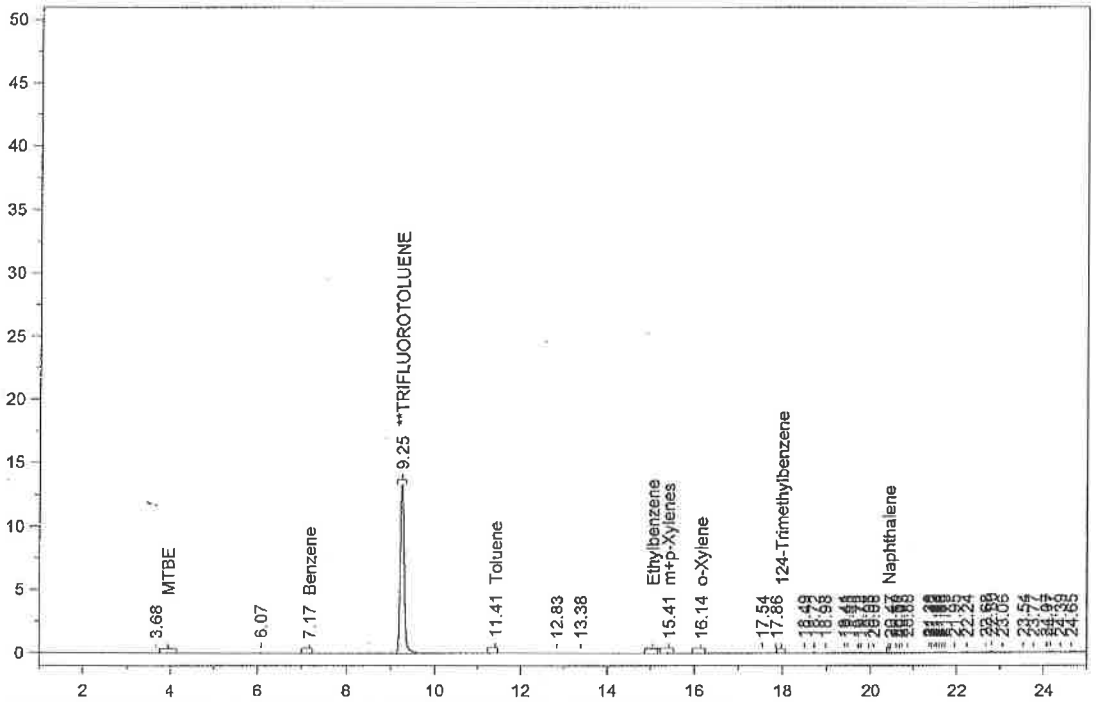
MOC-4

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0012.RAW B07100632-007F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-007F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0012.RAW
Date & Time Acquired: 10/9/2007 6:50:49 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.171	7.171	7.171	67	.5	U
Toluene	11.41	11.41	11.41	429	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.411	15.411	15.411	142	.5	U
o-Xylene	16.143	16.143	16.143	74	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.248	50.	48.621	97.24	80-120

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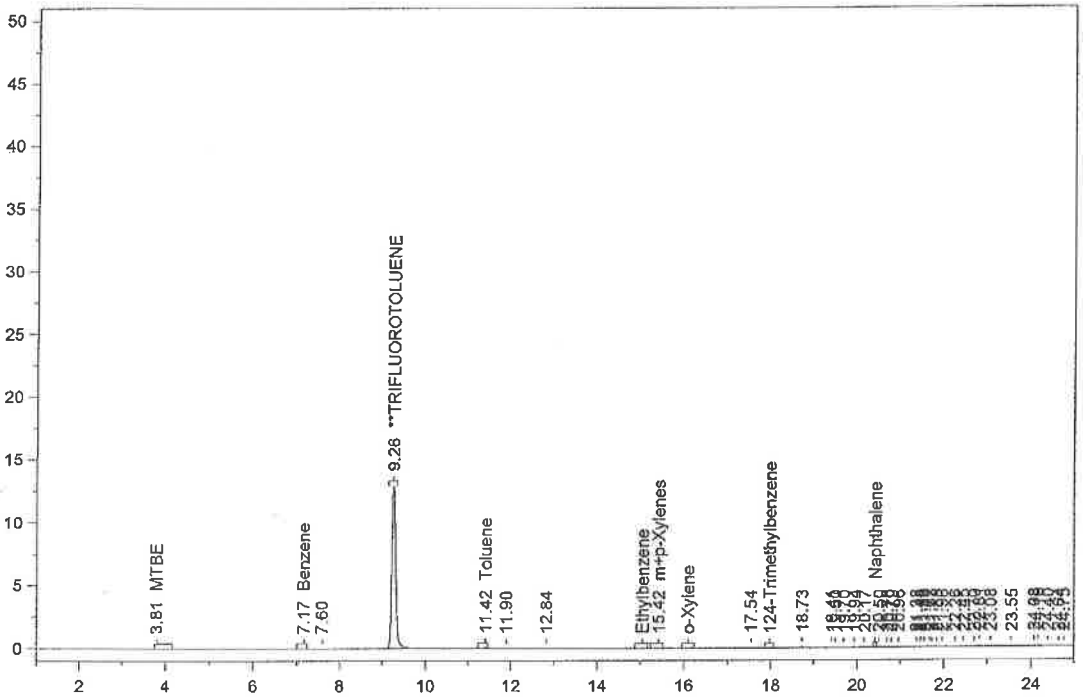
PNR-28

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0013.RAW B07100632-008F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-008F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0013.RAW
Date & Time Acquired: 10/9/2007 7:25:48 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.807	3.807	3.807	87	1.	U
Benzene	7.167	7.167	7.167	71	.5	U
Toluene	11.417	11.417	11.417	496	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.42	15.42	15.42	158	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.259	50.	47.414	94.83	80-120

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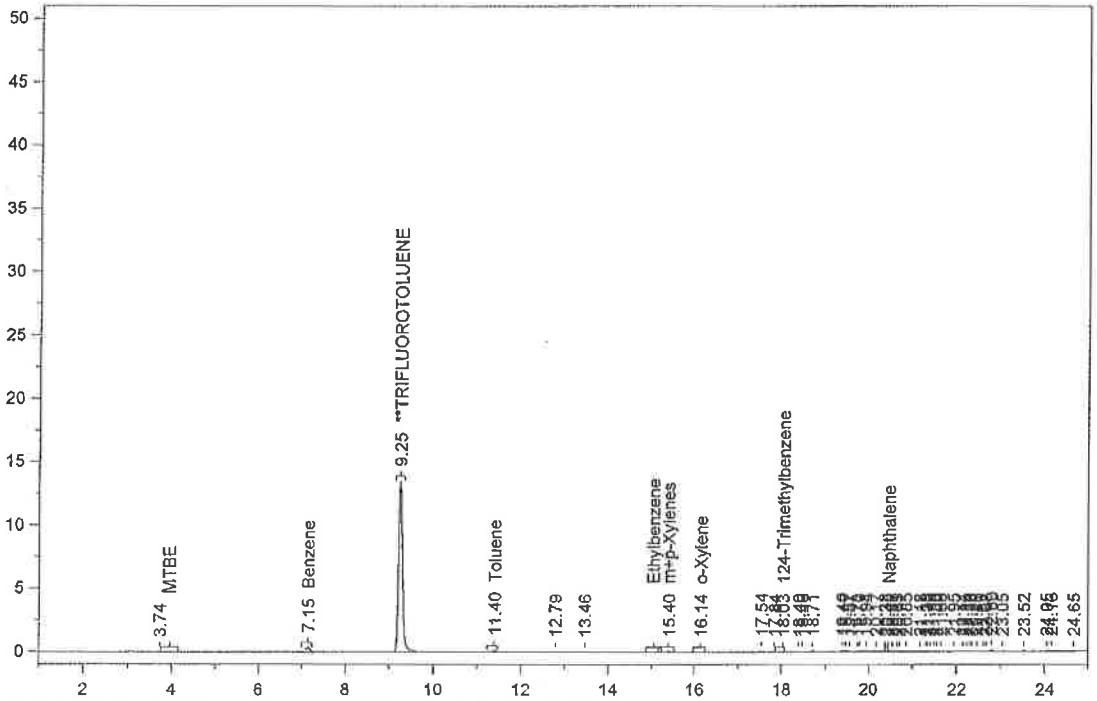
PNR-13

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0014.RAW B07100632-009F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-009F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0014.RAW
Date & Time Acquired: 10/9/2007 8:01:06 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.15	2.12	2.097	2523	.434	J
Toluene	11.4	11.4	11.4	935	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.396	15.396	15.396	256	.5	U
o-Xylene	16.137	16.137	16.137	111	.5	U
124-Trimethylbenzene	18.034	18.034	18.034	84	2.	U
Naphthalene	20.449	20.449	20.449	112	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.247	50.	49.415	98.83	80-120

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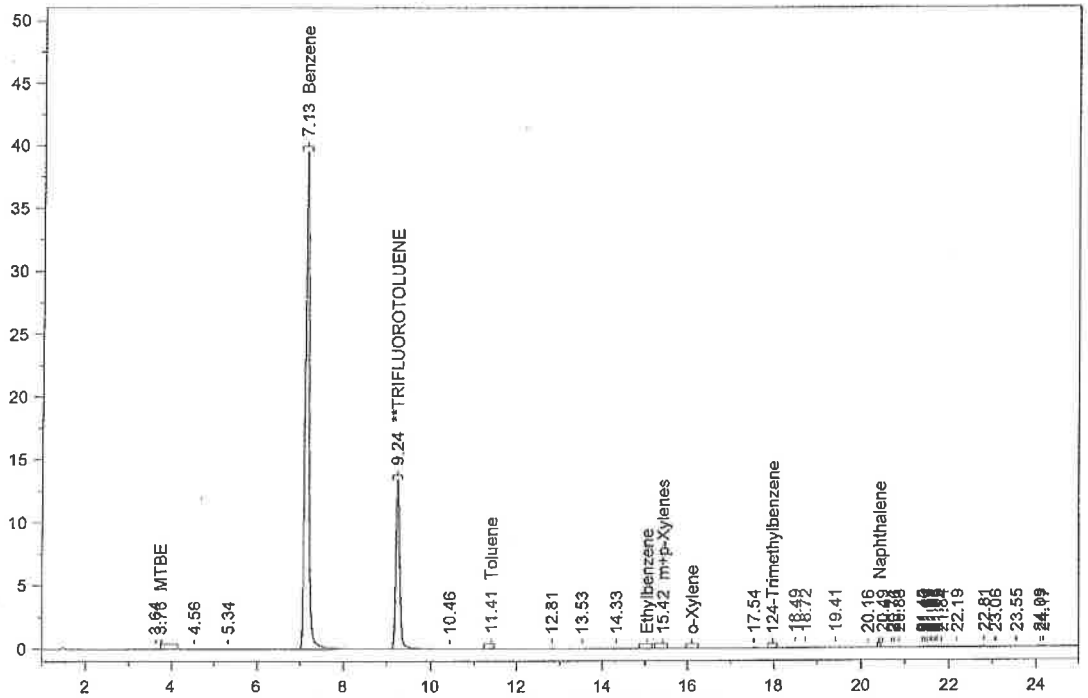
PNR-7

--- G:\Org\VAR\DAT\VAR100907_b\1009VAR.0015.RAW B07100632-010F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-010F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0015.RAW
Date & Time Acquired: 10/9/2007 8:36:02 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.76	3.76	3.76	257	1.	U
Benzene	7.135	2.12	2.11	250924	43.193	
Toluene	11.408	11.408	11.408	402	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.416	15.416	15.416	117	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.244	50.	49.179	98.36	80-120

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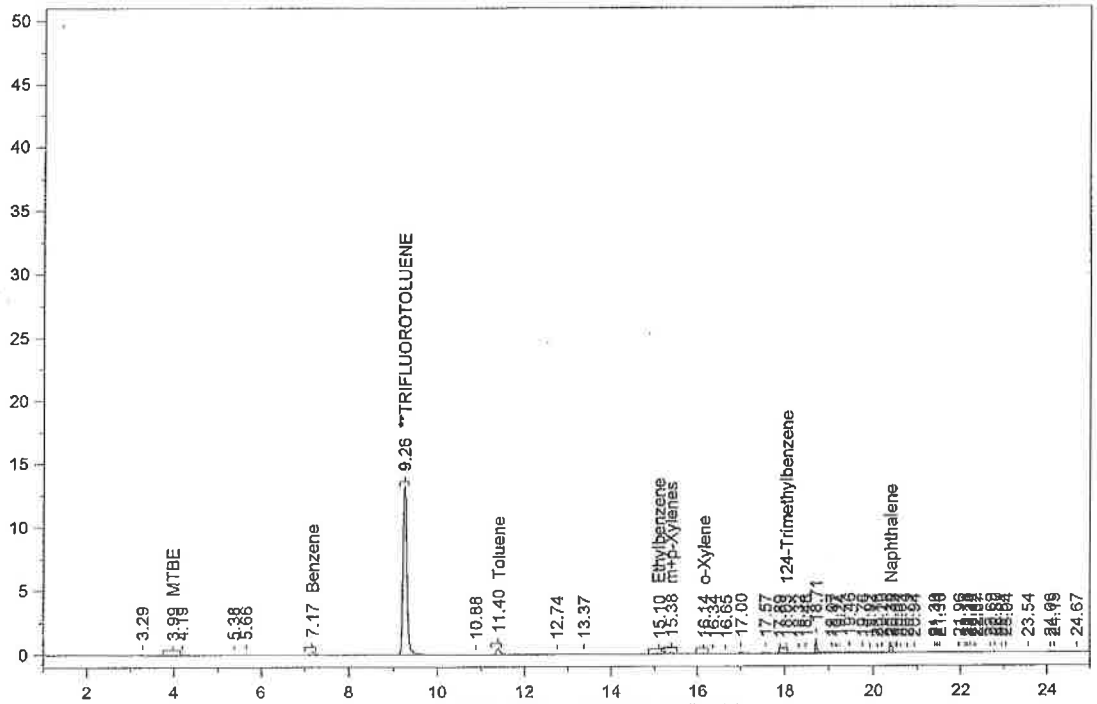
PNR-35
— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0017.RAW B07100632-011F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-011F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0017.RAW
Date & Time Acquired: 10/9/2007 9:44:59 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.986	3.986	3.986	73	1.	U
Benzene	7.172	7.172	7.172	1698	.5	U
Toluene	11.397	-2.11	-2.138	3267	.632	
Ethylbenzene	15.101	15.101	15.101	181	.5	U
m+p-Xylenes	15.383	15.383	15.383	767	.5	U
o-Xylene	16.135	16.135	16.135	281	.5	U
124-Trimethylbenzene	18.035	18.035	18.035	261	2.	U
Naphthalene	20.395	20.395	20.395	246	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.259	50.	47.744	95.49	80-120

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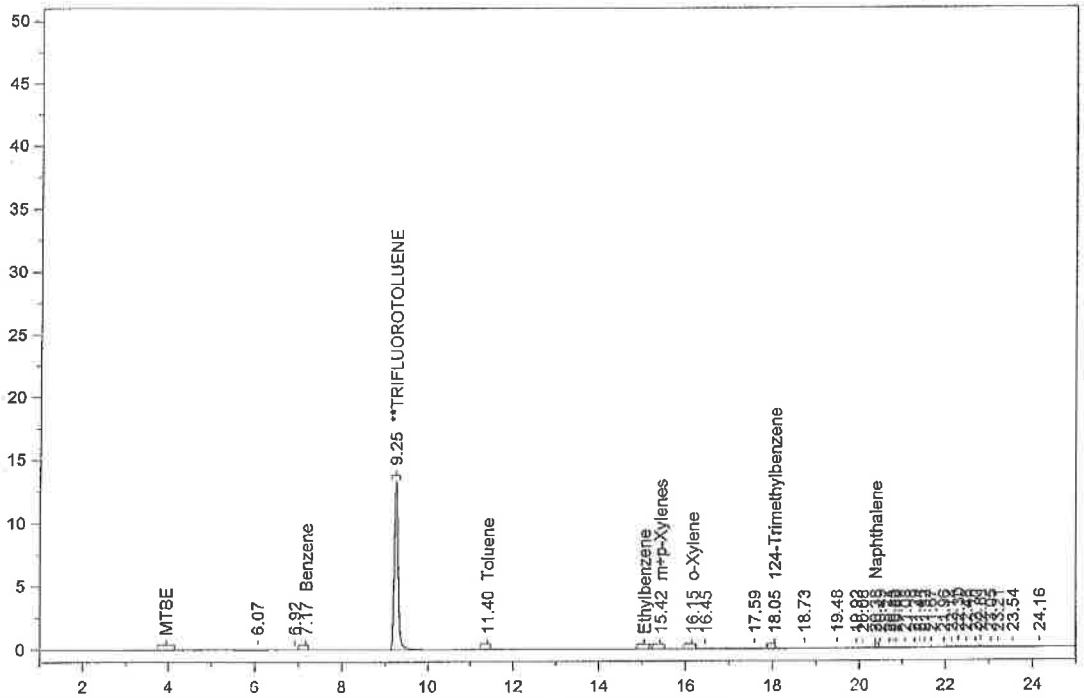
PNR-18
— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0018.RAW B07100632-012F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-012F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0018.RAW
Date & Time Acquired: 10/9/2007 10:19:49 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.173	7.173	7.173	103	.5	U
Toluene	11.401	11.401	11.401	527	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.418	15.418	15.418	201	.5	U
o-Xylene	16.15	16.15	16.15	69	.5	U
124-Trimethylbenzene	18.052	18.052	18.052	66	2.	U
Naphthalene	20.383	20.383	20.383	114	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.251	50.	49.368	98.74	80-120

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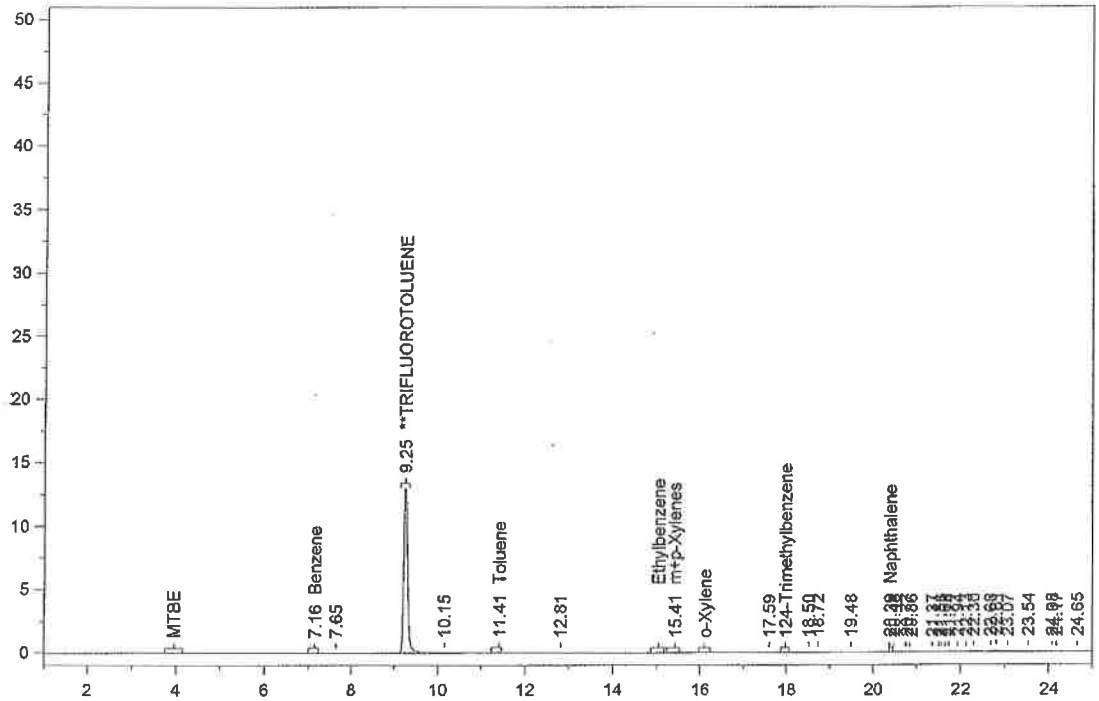
PNR-29

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0019.RAW B07100632-013F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-013F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0019.RAW
Date & Time Acquired: 10/9/2007 10:55:20 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.158	7.158	7.158	78	.5	U
Toluene	11.409	11.409	11.409	451	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.411	15.411	15.411	142	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.387	20.387	20.387	87	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.252	50.	47.545	95.09	80-120

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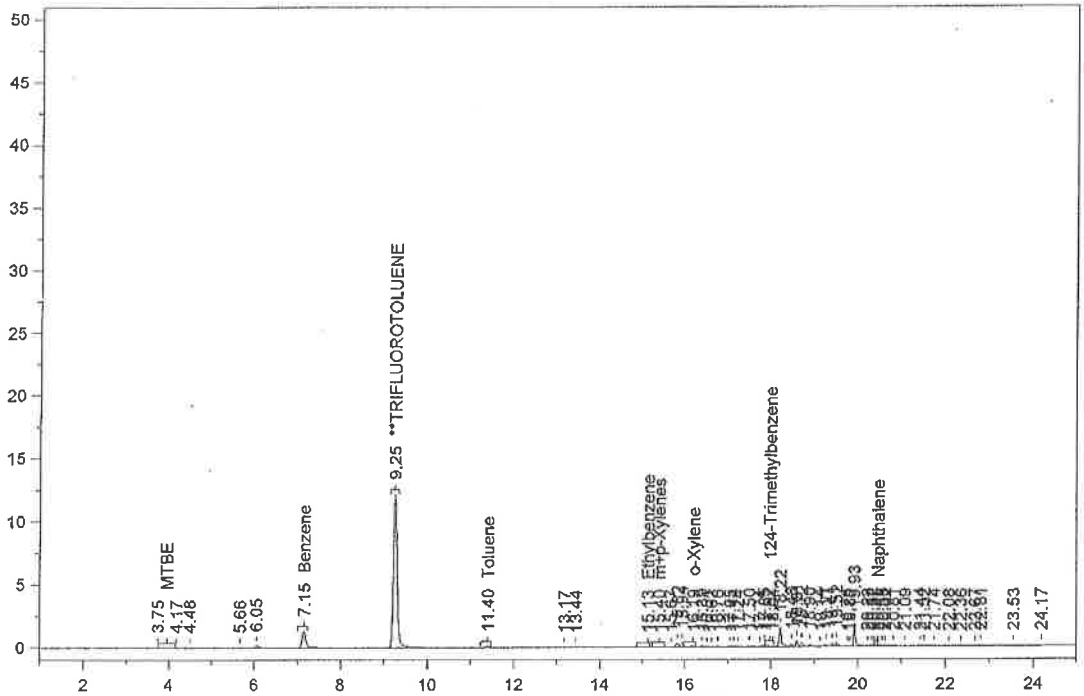
USGS-93-3
— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0020.RAW B07100632-014F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-014F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0020.RAW
Date & Time Acquired: 10/9/2007 11:29:59 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.153	2.12	2.098	7876	1.356	
Toluene	11.4	11.4	11.4	855	.5	U
Ethylbenzene	15.13	15.13	15.13	116	.5	U
m+p-Xylenes	15.398	15.398	15.398	227	.5	U
o-Xylene	16.19	16.19	16.19	351	.5	U
124-Trimethylbenzene	17.969	17.969	17.969	432	2.	U
Naphthalene	20.455	20.455	20.455	309	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.251	50.	44.176	88.35	80-120

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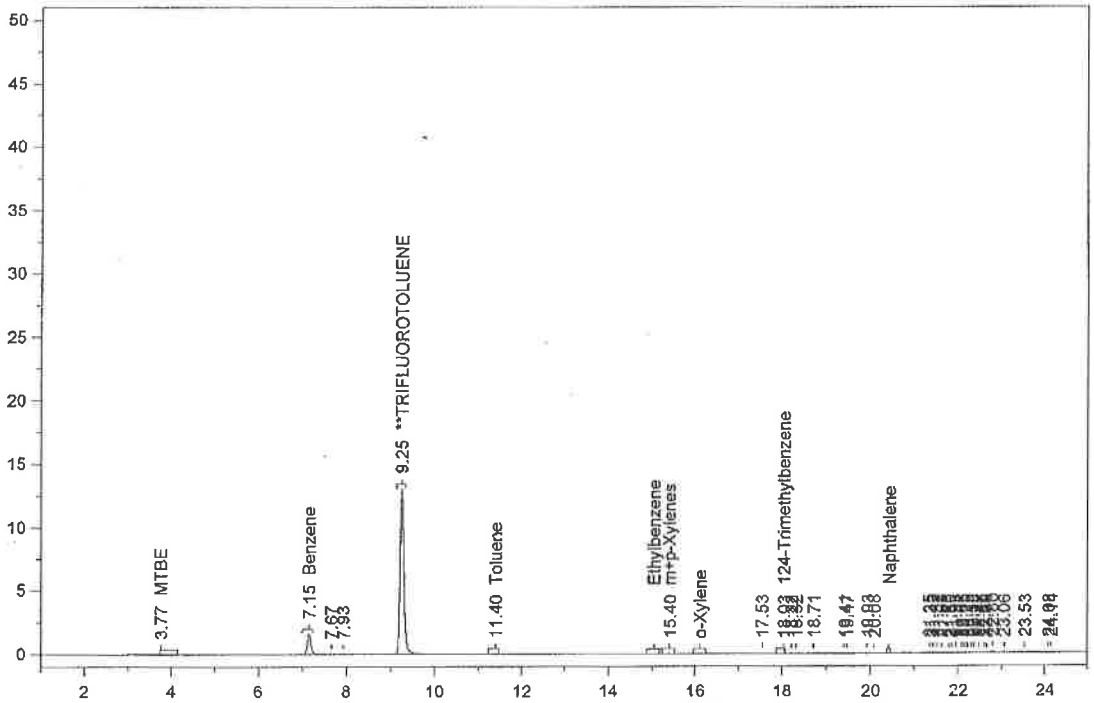
PNR-27
— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0021.RAW B07100632-015F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-015F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0021.RAW
Date & Time Acquired: 10/10/2007 12:04:47 AM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.773	3.773	3.773	116	1.	U
Benzene	7.155	2.12	2.097	9865	1.698	
Toluene	11.401	11.401	11.401	509	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.405	15.405	15.405	190	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.033	18.033	18.033	66	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.252	50.	47.249	94.5	80-120

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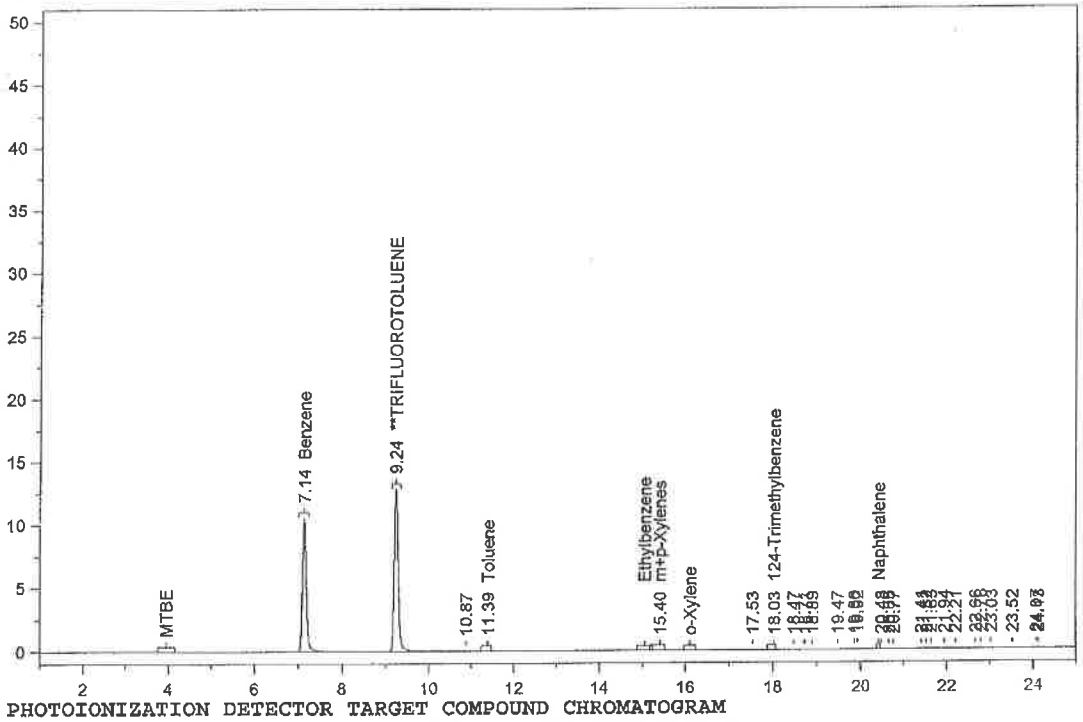
PNR-19

— G:\Org\VAR\DAT\VAR100907_b\1009VAR.0022.RAW B07100632-016F ;1009VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-016F ;1009VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR100907_b\1009VAR.0022.RAW
Date & Time Acquired: 10/10/2007 12:39:41 AM
Method File: G:\Org\VAR\Methods\2307VA1.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.135	2.12	2.101	65304	11.241	
Toluene	11.39	11.39	11.39	417	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.403	15.403	15.403	130	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.03	18.03	18.03	79	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.236	50.	46.984	93.97	80-120

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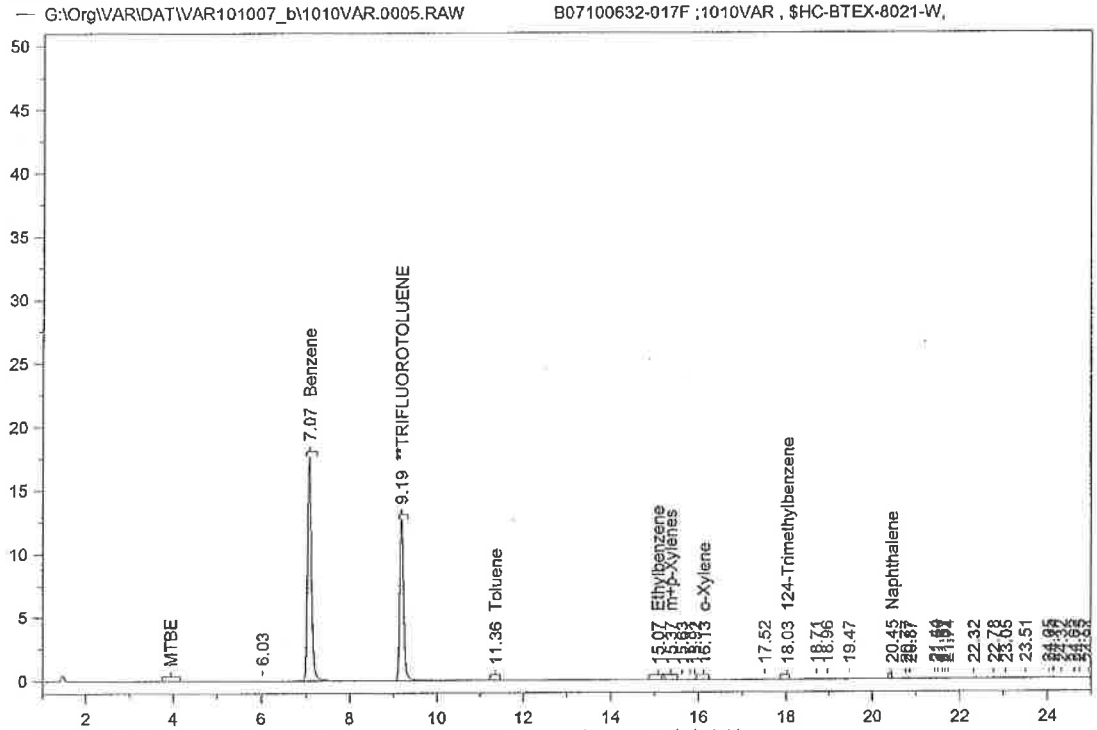
M-28
— G:\Org\VAR\DAT\VAR101007_b\1010VAR.0005.RAW B07100632-017F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-017F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0005.RAW
Date & Time Acquired: 10/10/2007 11:38:28 AM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.071	2.11	2.119	112888	19.432	
Toluene	11.359	11.359	11.359	408	.5	U
Ethylbenzene	15.073	15.073	15.073	81	.5	U
m+p-Xylenes	15.369	15.369	15.369	256	.5	U
o-Xylene	16.13	16.13	16.13	120	.5	U
124-Trimethylbenzene	18.026	18.026	18.026	76	2.	U
Naphthalene	20.452	20.452	20.452	146	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.19	50.	47.177	94.35	80-120

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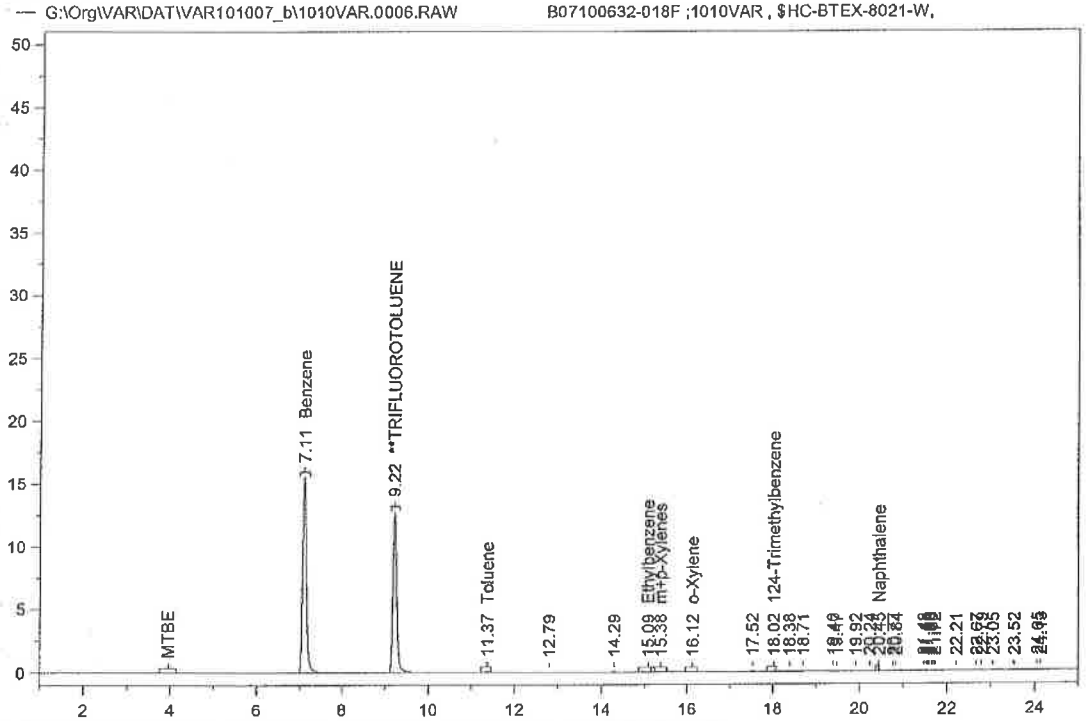
PNR-20

— G:\Org\VAR\DAT\VAR101007_b\1010VAR.0006.RAW B07100632-018F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-018F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0006.RAW
Date & Time Acquired: 10/10/2007 12:13:13 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.106	2.11	2.11	96551	16.62	
Toluene	11.371	11.371	11.371	564	.5	U
Ethylbenzene	15.085	15.085	15.085	70	.5	U
m+p-Xylenes	15.377	15.377	15.377	214	.5	U
o-Xylene	16.124	16.124	16.124	91	.5	U
124-Trimethylbenzene	18.02	18.02	18.02	66	2.	U
Naphthalene	20.448	20.448	20.448	110	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.216	50.	47.067	94.13	80-120

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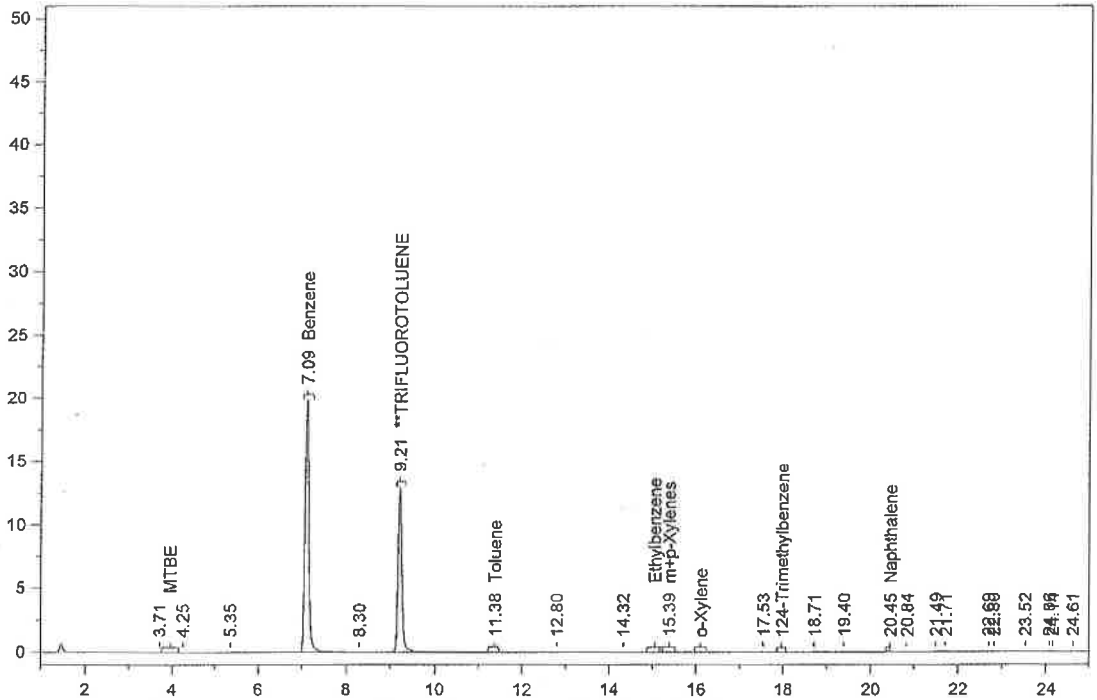
PNR-21

— G:\Org\VAR\DAT\VAR101007_b\1010VAR.0007.RAW B07100632-019F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-019F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0007.RAW
Date & Time Acquired: 10/10/2007 12:48:00 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.093	2.11	2.114	124863	21.493	
Toluene	11.376	11.376	11.376	362	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.386	15.386	15.386	250	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.452	20.452	20.452	101	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.207	50.	47.679	95.36	80-120

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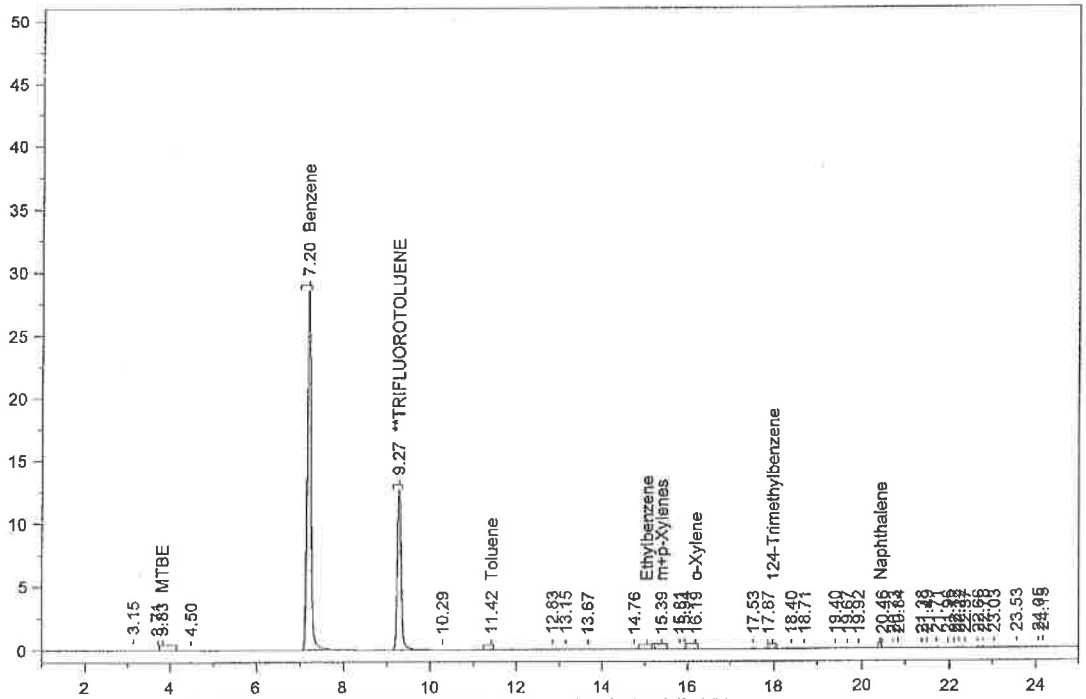
M-31
— G:\Org\VAR\DAT\VAR101007_b\1010VAR.0008.RAW B07100632-020F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-020F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0008.RAW
Date & Time Acquired: 10/10/2007 1:22:58 PM
Method File: G:\Org\VAR\Methods\2307VA3.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.829	3.829	3.829	520	1.	U
Benzene	7.195	2.11	2.076	175347	30.183	
Toluene	11.419	11.419	11.419	227	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.391	15.391	15.391	235	.5	U
o-Xylene	16.186	16.186	16.186	141	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.271	50.	45.89	91.78	80-120

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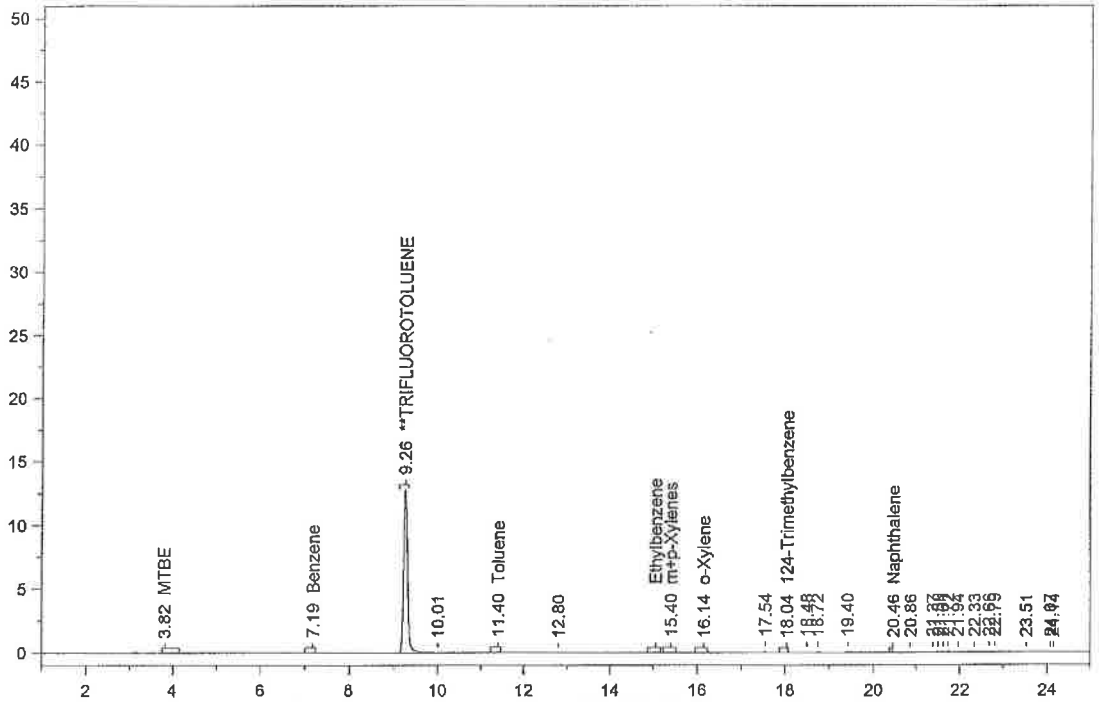
USGS 92-12

-- G:\Org\VAR\DAT\VAR101007_b\1010VAR.0009.RAW B07100632-021F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-021F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0009.RAW
Date & Time Acquired: 10/10/2007 1:57:44 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.817	3.817	3.817	80	1.	U
Benzene	7.186	7.186	7.186	177	.5	U
Toluene	11.4	11.4	11.4	590	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.396	15.396	15.396	166	.5	U
o-Xylene	16.144	16.144	16.144	113	.5	U
124-Trimethylbenzene	18.036	18.036	18.036	66	2.	U
Naphthalene	20.46	20.46	20.46	74	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.262	50.	46.449	92.9	80-120

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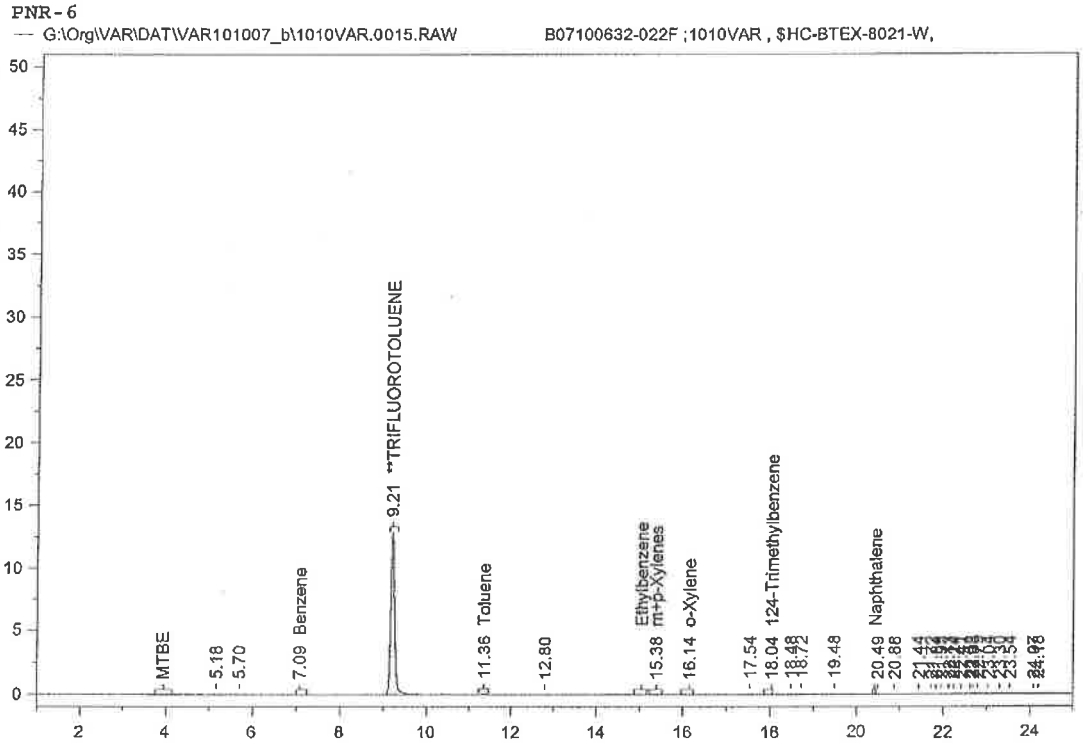
PNR-6



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-022F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0015.RAW
Date & Time Acquired: 10/10/2007 5:27:29 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.086	7.086	7.086	75	.5	U
Toluene	11.363	11.363	11.363	636	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.382	15.382	15.382	259	.5	U
o-Xylene	16.142	16.142	16.142	117	.5	U
124-Trimethylbenzene	18.037	18.037	18.037	99	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.205	50.	47.184	94.37	80-120

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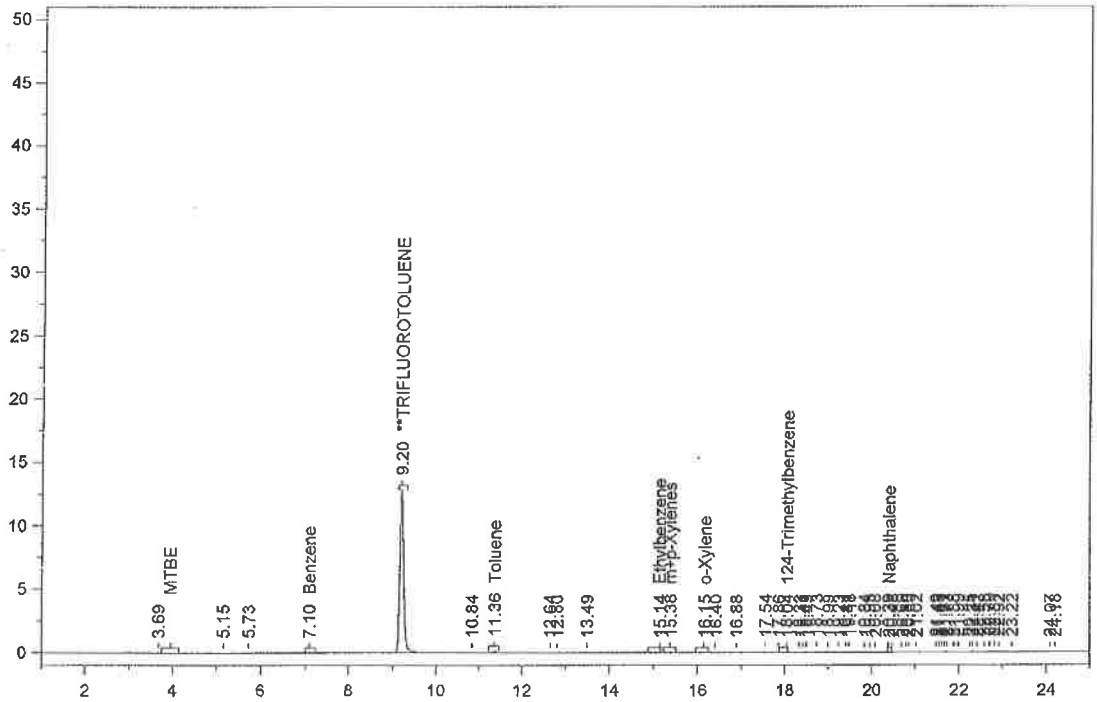
PNR-16
— G:\Org\VAR\DAT\VAR101007_b\1010VAR.0016.RAW B07100632-023F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-023F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0016.RAW
Date & Time Acquired: 10/10/2007 6:02:10 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.095	7.095	7.095	132	.5	U
Toluene	11.363	11.363	11.363	876	.5	U
Ethylbenzene	15.136	15.136	15.136	96	.5	U
m+p-Xylenes	15.378	15.378	15.378	231	.5	U
o-Xylene	16.153	16.153	16.153	121	.5	U
124-Trimethylbenzene	18.041	18.041	18.041	104	2.	U
Naphthalene	20.386	20.386	20.386	120	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.204	50.	46.812	93.62	80-120

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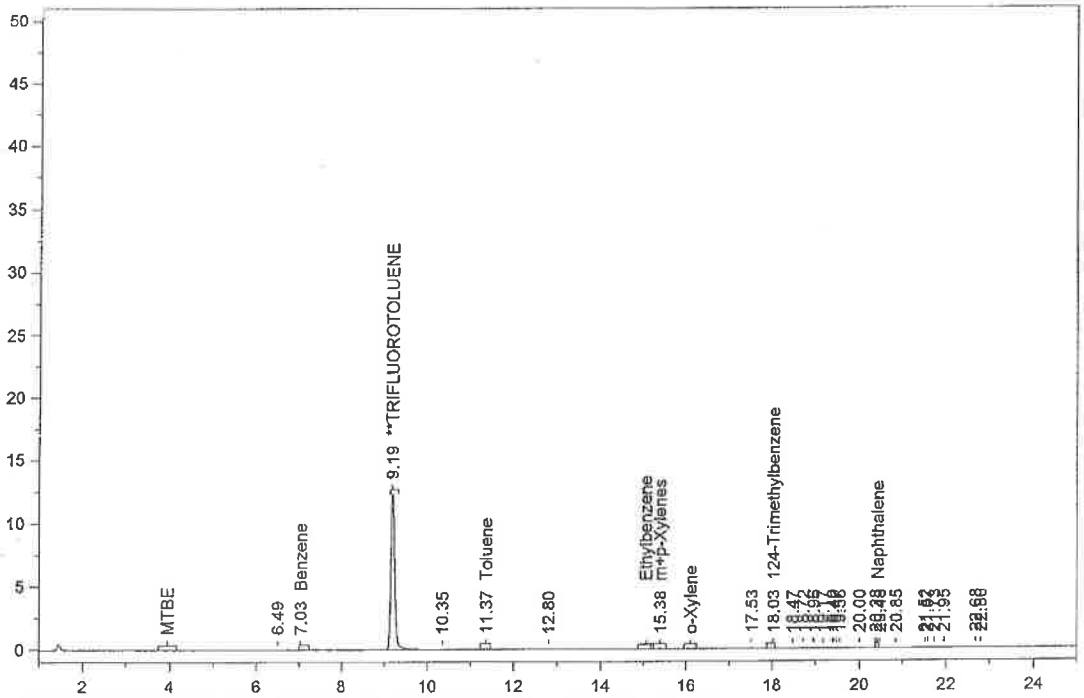
PNR-12

— G:\Org\VAR\DAT\VAR101007_b\1010VAR.0017.RAW B07100632-024F ;1010VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-024F ;1010VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0017.RAW
Date & Time Acquired: 10/10/2007 6:36:55 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.035	7.035	7.035	75	.5	U
Toluene	11.365	11.365	11.365	499	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.38	15.38	15.38	200	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.029	18.029	18.029	70	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.189	50.	45.296	90.59	80-120

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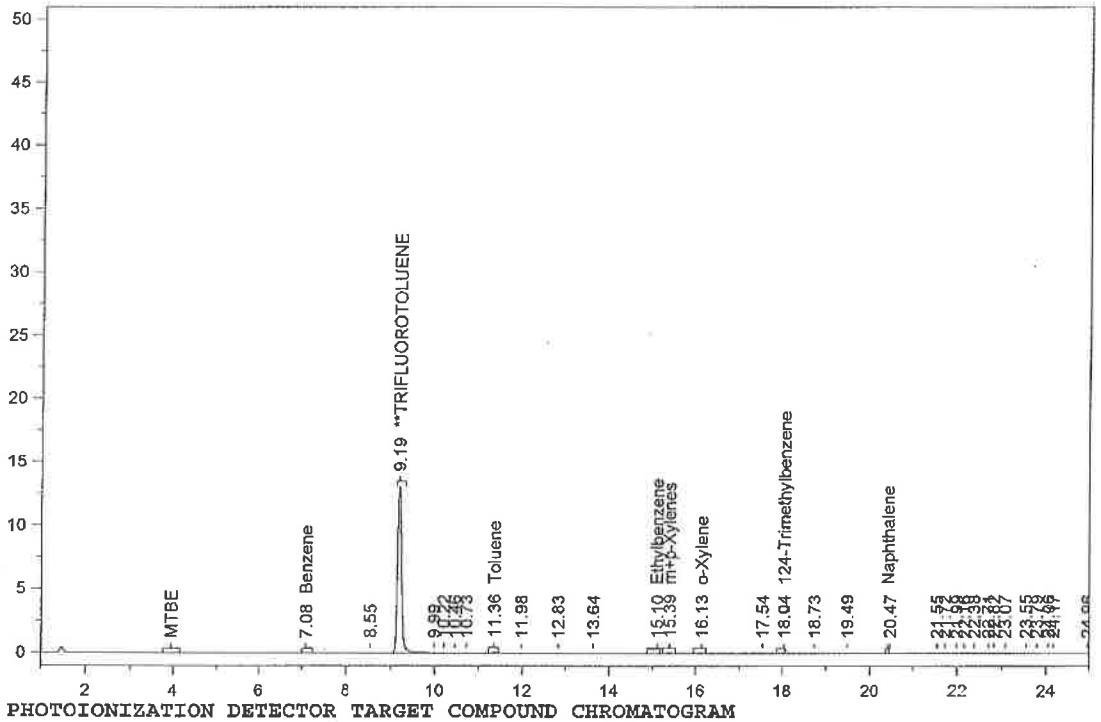
PNR-33-06

— G:\Org\VAR\DAT\VAR101107_b\1011VAR.0008.RAW B07100632-025F ;1011VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-025F ;1011VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0008.RAW
Date & Time Acquired: 10/11/2007 2:00:59 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.082	7.082	7.082	83	.5	U
Toluene	11.365	11.365	11.365	616	.5	U
Ethylbenzene	15.103	15.103	15.103	140	.5	U
m+p-Xylenes	15.39	15.39	15.39	377	.5	U
o-Xylene	16.135	16.135	16.135	170	.5	U
124-Trimethylbenzene	18.04	18.04	18.04	81	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.192	50.	48.469	96.94	80-120

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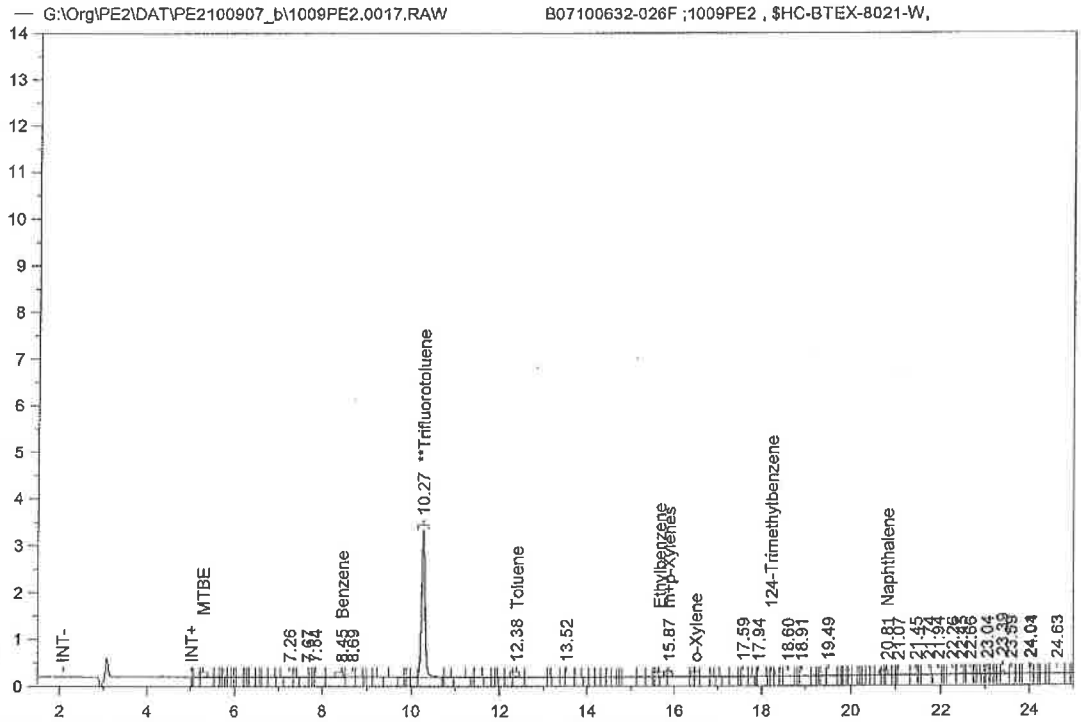
PNR-22



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-026F ;1009PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2100907_b\1009PE2.0017.RAW
Date & Time Acquired: 10/9/2007 10:06:28 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.446	8.446	8.446	188	.5	U
Toluene	12.384	12.384	12.384	146	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.873	15.873	15.873	156	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.806	20.806	20.806	102	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.27	50.	45.075	90.15	80-120

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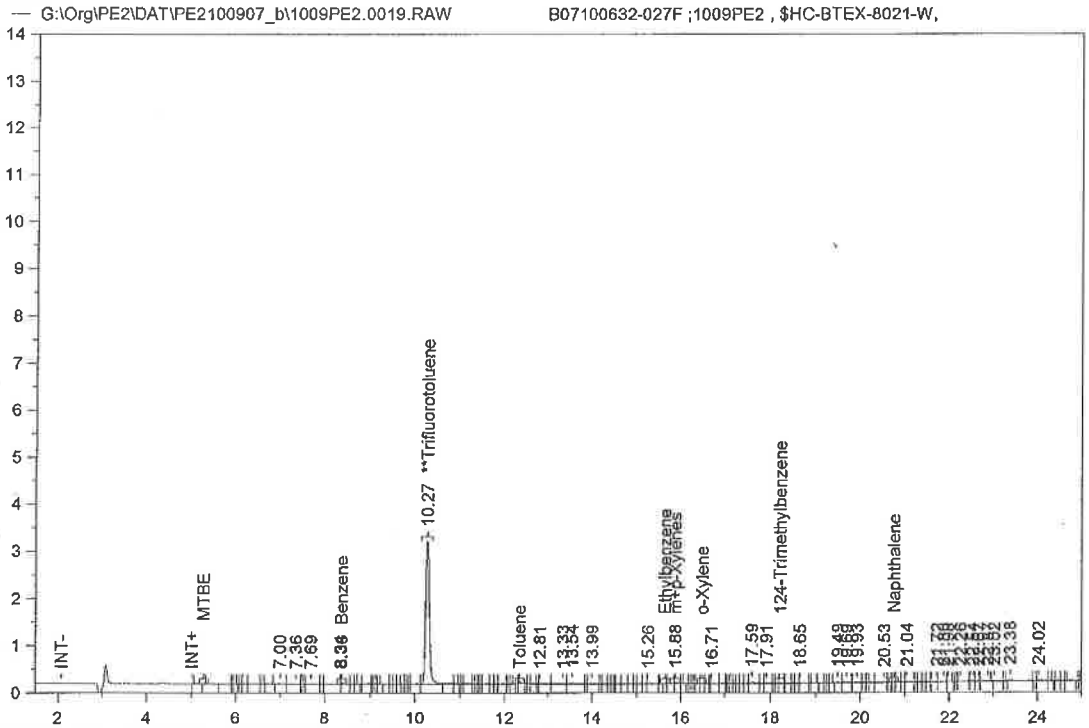
PNR-9



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-027F ;1009PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2100907_b\1009PE2.0019.RAW
Date & Time Acquired: 10/9/2007 11:19:54 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.376	8.376	8.376	86	.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.876	15.876	15.876	86	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.267	50.	42.84	85.68	80-120

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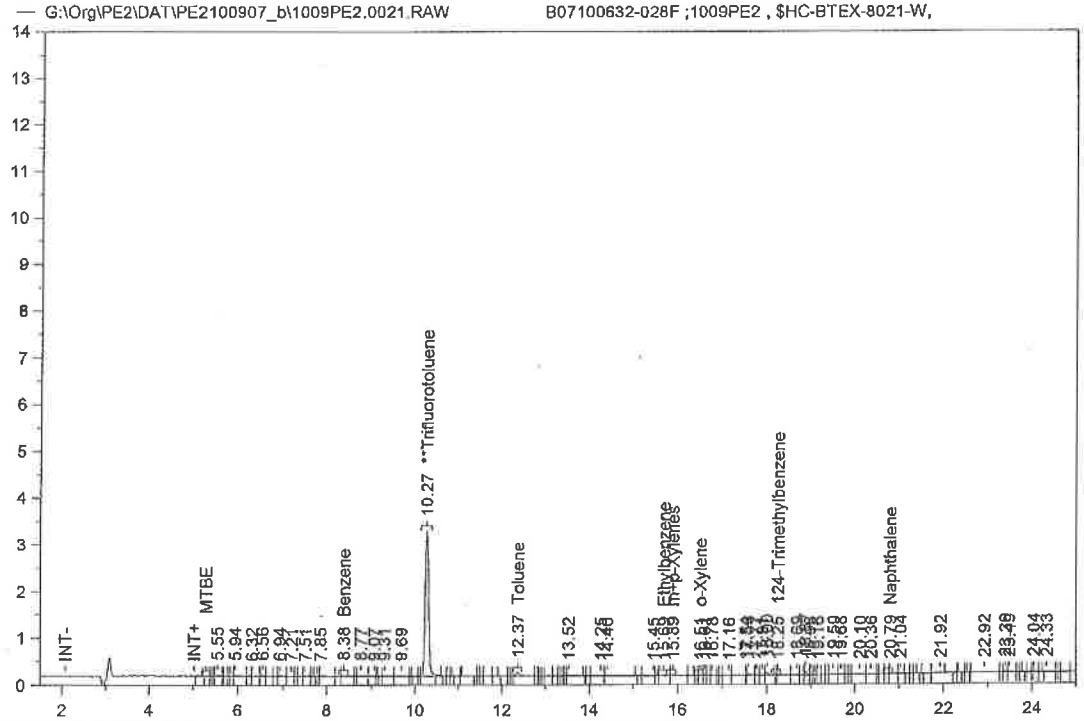
M-27

— G:\Org\PE2\DAT\PE2100907_b\1009PE2.0021.RAW B07100632-028F ;1009PE2 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-028F ;1009PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2100907_b\1009PE2.0021.RAW
Date & Time Acquired: 10/10/2007 12:33:25 AM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.384	8.384	8.384	260	.5	U
Toluene	12.37	-2.089	-2.101	529	.464	J
Ethylbenzene	15.687	15.687	15.687	173	.5	U
m+p-Xylenes	15.887	15.887	15.887	324	.5	U
o-Xylene	16.506	16.506	16.506	98	.5	U
124-Trimethylbenzene	18.252	18.252	18.252	324	2.	U
Naphthalene	20.788	20.788	20.788	114	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.269	50.	45.093	90.19	80-120

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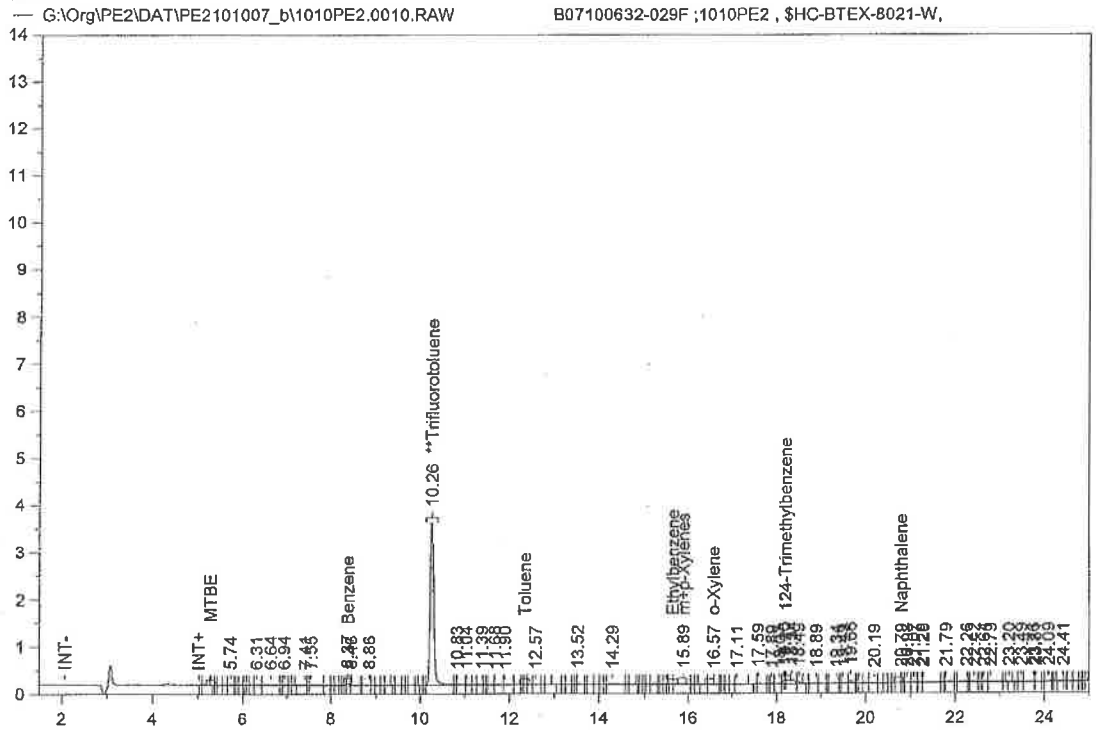
PNR-8



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-029F ;1010PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101007_b\1010PE2.0010.RAW
Date & Time Acquired: 10/10/2007 5:28:06 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.372	8.372	8.372	163	.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.893	15.893	15.893	166	.5	U
o-Xylene	16.572	16.572	16.572	105	.5	U
124-Trimethylbenzene	18.199	18.199	18.199	163	2.	U
Naphthalene	20.79	20.79	20.79	84	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.26	50.	47.805	95.61	80-120

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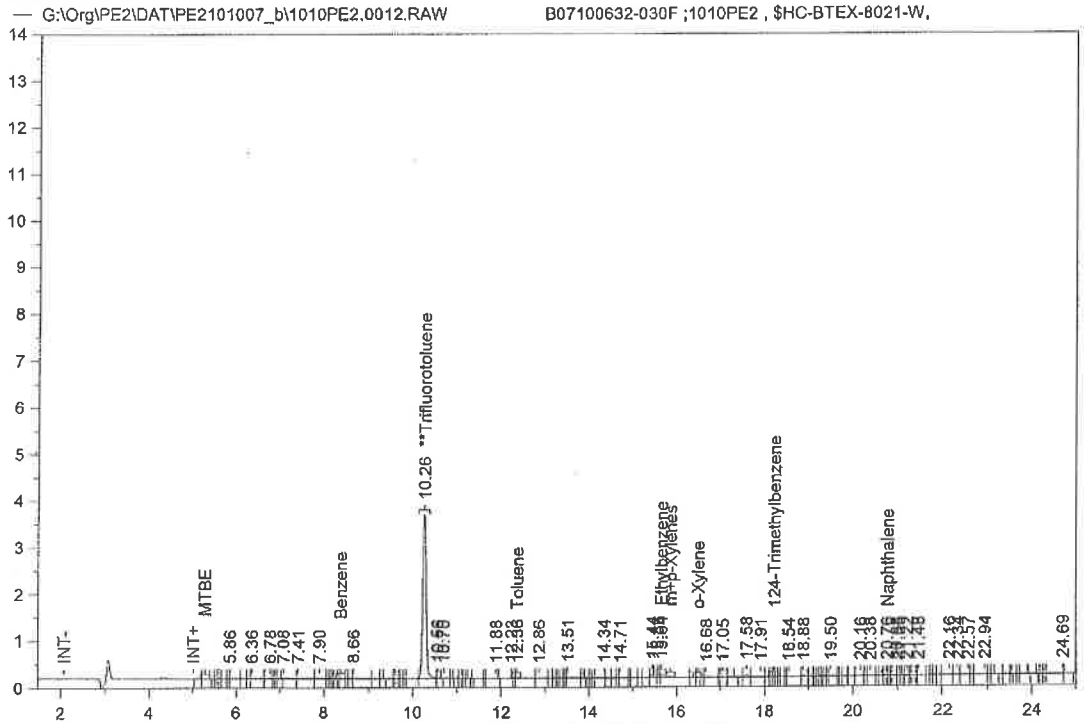
USGS-06-7

— G:\Org\PE2\DAT\PE2101007_b\1010PE2.0012.RAW B07100632-030F ;1010PE2 , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-030F ;1010PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101007_b\1010PE2.0012.RAW
Date & Time Acquired: 10/10/2007 6:41:47 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.365	12.365	12.365	249	.5	U
Ethylbenzene	15.643	-5.396	-5.386	771	.752	
m+p-Xylenes	.	.	.		.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	20.762	20.762	20.762	82	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.258	50.	47.232	94.46	80-120

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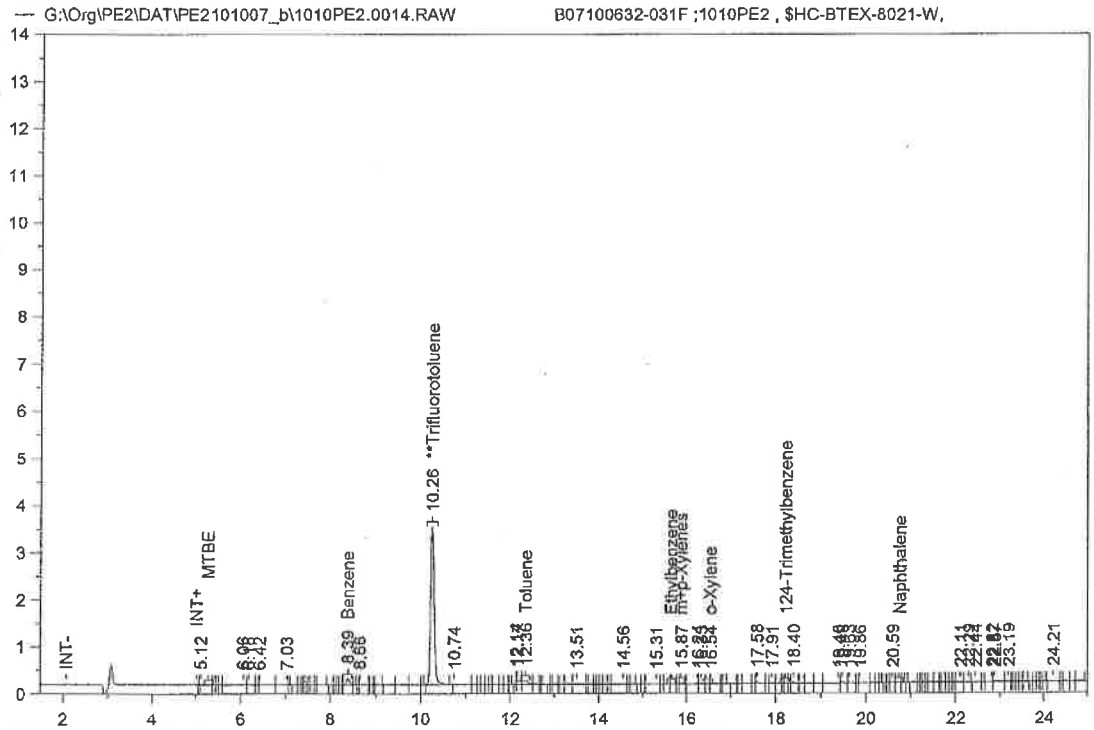
PNR-14



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-031F ;1010PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101007_b\1010PE2.0014.RAW
Date & Time Acquired: 10/10/2007 7:55:08 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.388	1.884	1.874	681	.535	
Toluene	12.359	-2.089	-2.097	734	.642	
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.875	15.875	15.875	135	.5	U
o-Xylene	16.541	16.541	16.541	109	.5	U
124-Trimethylbenzene	.	.	.		2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.262	50.	46.687	93.37	80-120

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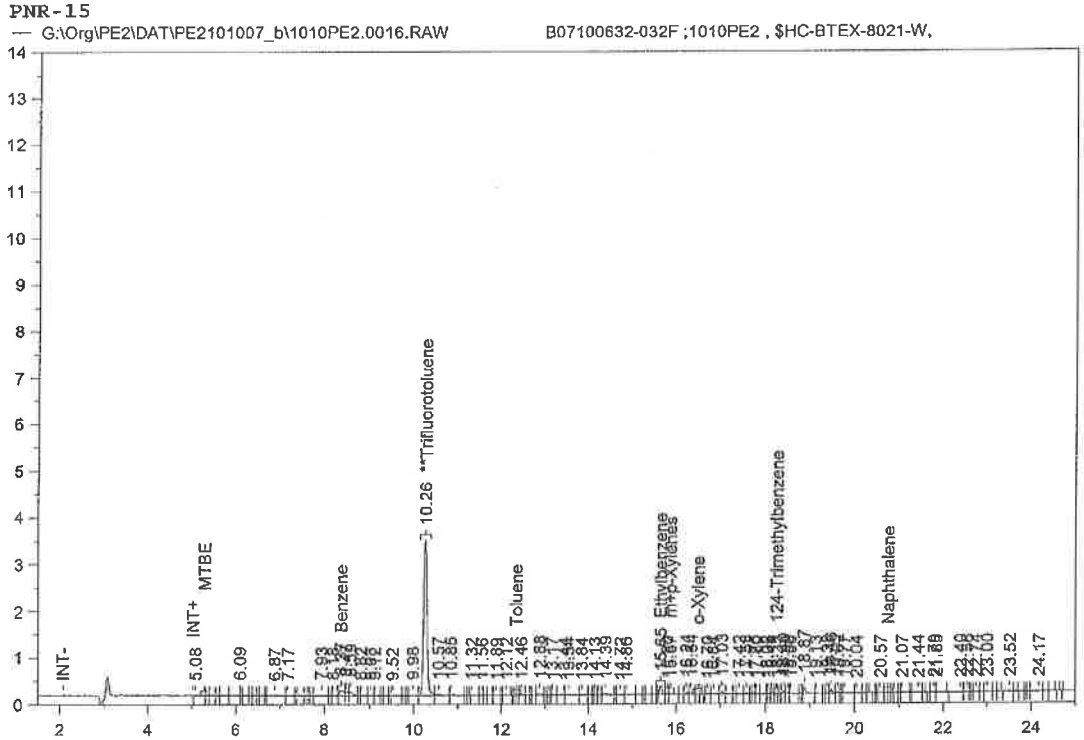
PNR-15



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-032F ;1010PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101007_b\1010PE2.0016.RAW
Date & Time Acquired: 10/10/2007 9:08:43 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.368	1.884	1.889	807	.634	
Toluene	.	.	.		.5	U
Ethylbenzene	15.653	-5.396	-5.396	783	.764	
m+p-Xylenes	15.871	15.871	15.871	233	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.248	18.248	18.248	77	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.257	50.	45.671	91.34	80-120

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Trip Blank 1, Client

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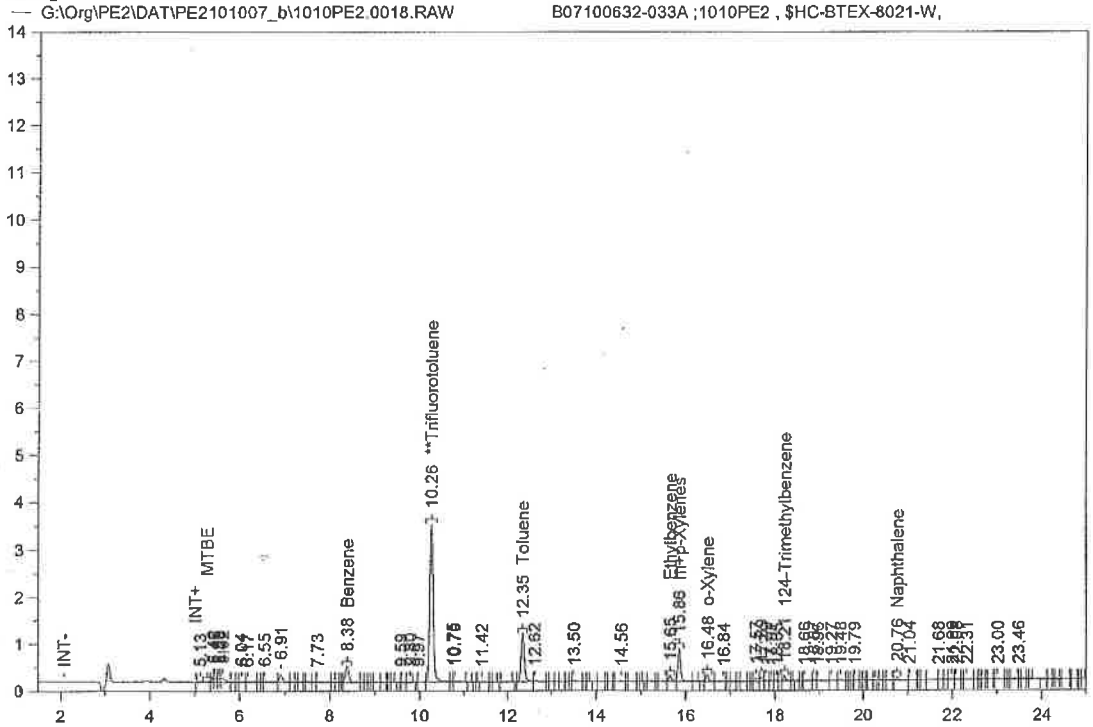

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-033A ;1010PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101007_b\1010PE2.0018.RAW
Date & Time Acquired: 10/10/2007 10:21:58 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.379	1.884	1.881	1841	1.447	
Toluene	12.347	-2.089	-2.087	5452	4.773	
Ethylbenzene	15.651	-5.396	-5.391	569	.555	
m+p-Xylenes	15.855	-5.604	-5.595	2919	2.585	
o-Xylene	16.483	-6.228	-6.223	623	.643	
124-Trimethylbenzene	18.211	18.211	18.211	403	2.	U
Naphthalene	20.758	-10.488	-10.497	396	1.341	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.26	50.	46.386	92.77	80-120

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Trip Blank 2, Client

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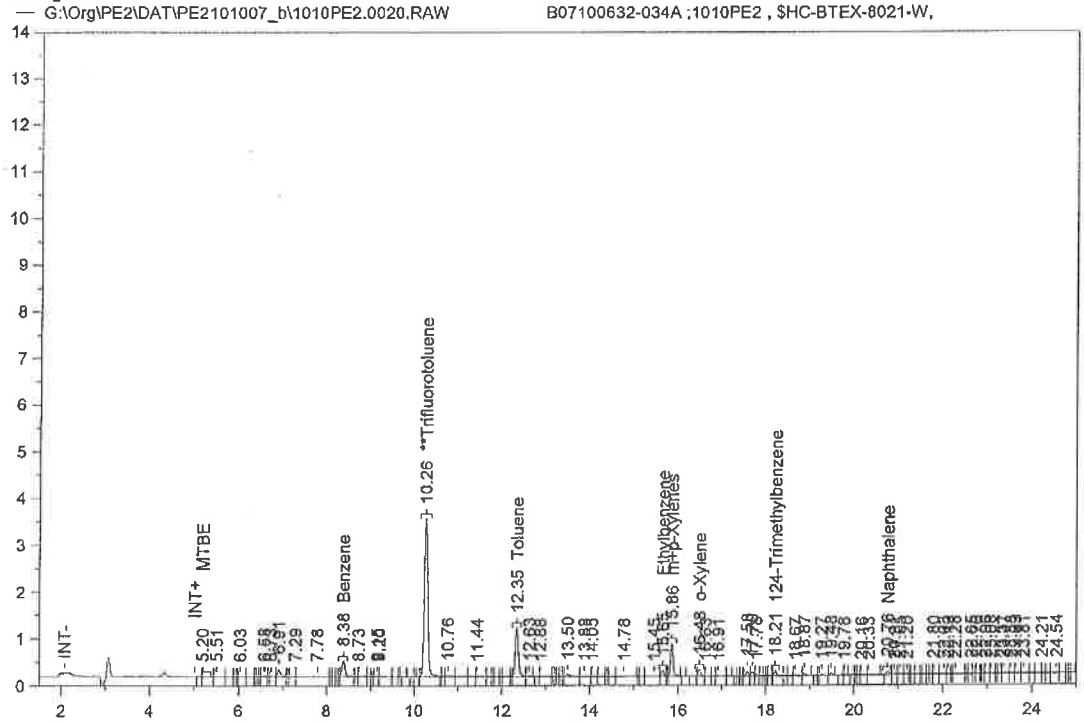

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-034A ;1010PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101007_b\1010PE2.0020.RAW
Date & Time Acquired: 10/10/2007 11:35:30 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	5.199	5.199	5.199	78	1.	U
Benzene	8.384	1.884	1.878	1862	1.464	
Toluene	12.349	-2.089	-2.087	5489	4.806	
Ethylbenzene	15.652	-5.396	-5.39	528	.515	
m+p-Xylenes	15.856	-5.604	-5.594	2874	2.545	
o-Xylene	16.483	-6.228	-6.22	625	.645	
124-Trimethylbenzene	18.211	18.211	18.211	447	2.	U
Naphthalene	20.757	-10.488	-10.495	306	1.036	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.262	50.	46.985	93.97	80-120

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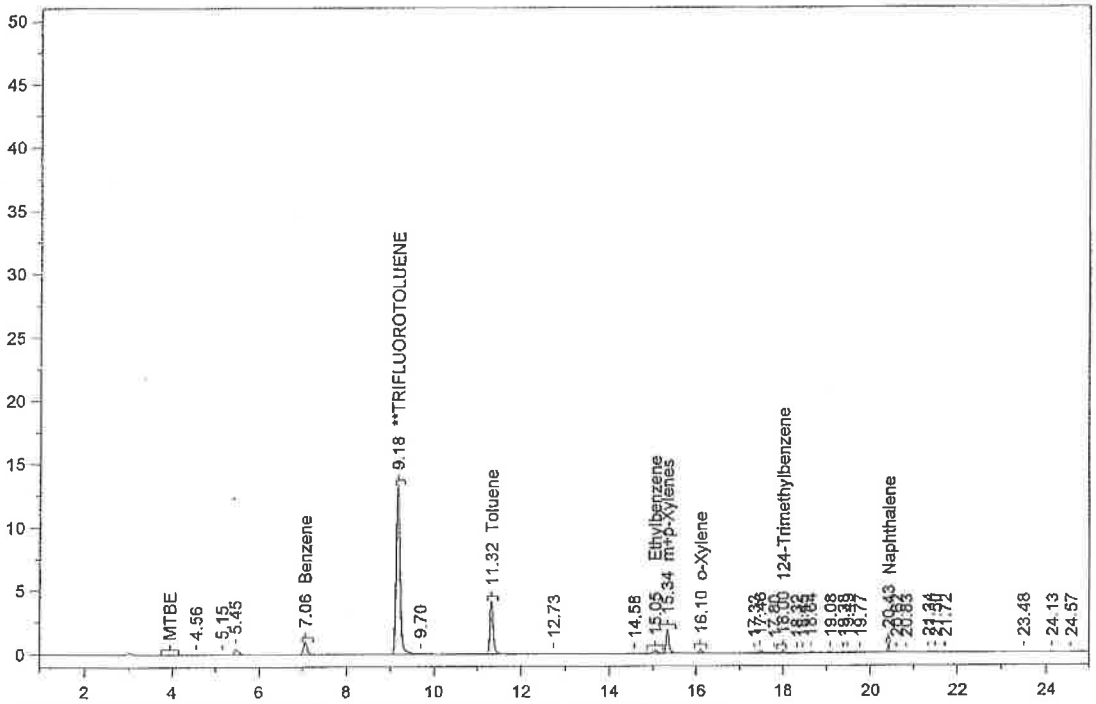
Trip Blank 3, Client

— G:\Org\VAR\DAT\VAR101107_b\1011VAR.0012.RAW B07100632-035A ;1011VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-035A ;1011VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0012.RAW
Date & Time Acquired: 10/11/2007 4:30:18 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.059	2.11	2.117	5829	1.003	
Toluene	11.323	-2.12	-2.147	22132	4.28	
Ethylbenzene	15.052	-5.82	-5.875	1297	.32	J
m+p-Xylenes	15.337	-6.11	-6.161	8996	1.879	
o-Xylene	16.096	-6.87	-6.92	1477	.353	J
124-Trimethylbenzene	18.002	18.002	18.002	829	2.	U
Naphthalene	20.429	20.429	20.429	1937	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.176	50.	48.975	97.95	80-120

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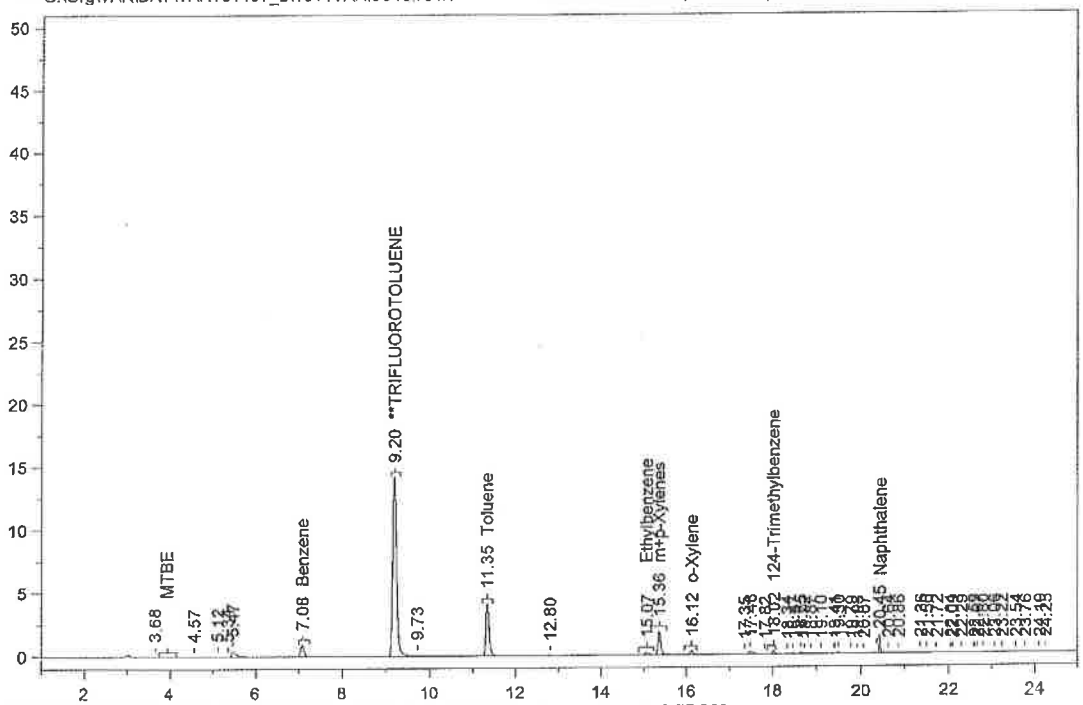
Trip Blank 4, Client
— G:\Org\VAR\DAT\VAR101107_b\1011VAR.0013.RAW B07100632-036A ;1011VAR , $HC-BTEX-8021-W,



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-036A ;1011VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0013.RAW
Date & Time Acquired: 10/11/2007 5:08:19 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.078	2.11	2.119	5866	1.01	
Toluene	11.345	-2.12	-2.148	21998	4.254	
Ethylbenzene	15.071	15.071	15.071	1240	.5	U
m+p-Xylenes	15.357	-6.11	-6.16	8873	1.853	
o-Xylene	16.116	-6.87	-6.919	1389	.331	J
124-Trimethylbenzene	18.02	18.02	18.02	881	2.	U
Naphthalene	20.446	20.446	20.446	2001	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.197	50.	51.48	102.96	80-120

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Trip Blank 5, Client
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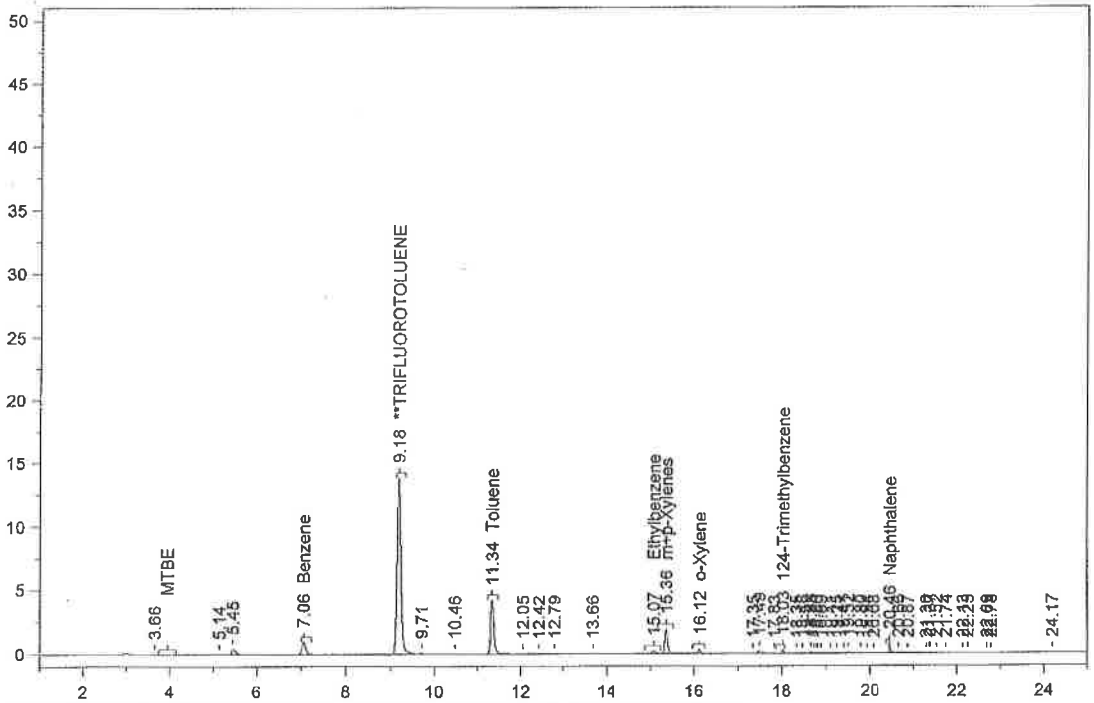

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-037A ;1011VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0014.RAW
Date & Time Acquired: 10/11/2007 5:43:09 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.059	2.11	2.125	6084	1.047	
Toluene	11.339	-2.12	-2.154	22886	4.426	
Ethylbenzene	15.074	-5.82	-5.89	1298	.32	J
m+p-Xylenes	15.36	-6.11	-6.176	9197	1.921	
o-Xylene	16.12	-6.87	-6.936	1516	.362	J
124-Trimethylbenzene	18.029	18.029	18.029	1068	2.	U
Naphthalene	20.457	20.457	20.457	1929	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.184	50.	50.423	100.85	80-120

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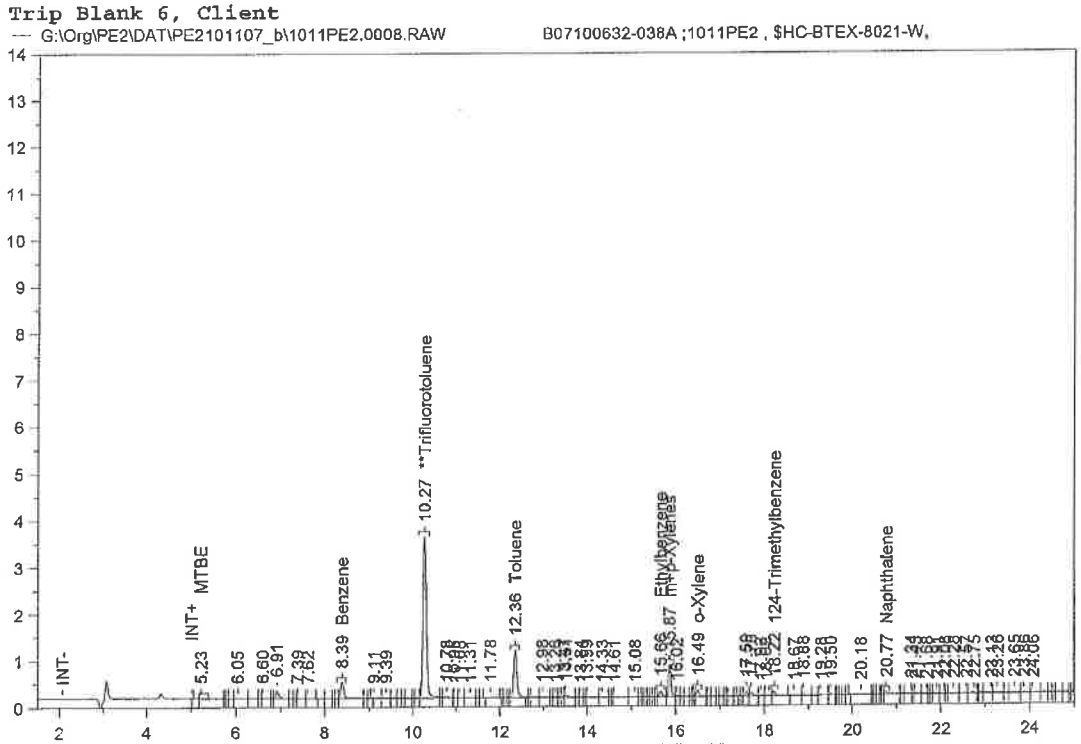
Trip Blank 6, Client



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-038A ;1011PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101107_b\1011PE2.0008.RAW
Date & Time Acquired: 10/11/2007 3:36:00 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	5.231	5.231	5.231	137	1.	U
Benzene	8.386	1.884	1.884	1906	1.499	
Toluene	12.359	-2.089	-2.09	5595	4.899	
Ethylbenzene	15.663	-5.396	-5.394	553	.539	
m+p-Xylenes	15.866	-5.604	-5.597	2747	2.433	
o-Xylene	16.493	-6.228	-6.224	650	.671	
124-Trimethylbenzene	18.218	18.218	18.218	528	2.	U
Naphthalene	20.767	-10.488	-10.497	484	1.64	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.269	50.	48.027	96.05	80-120

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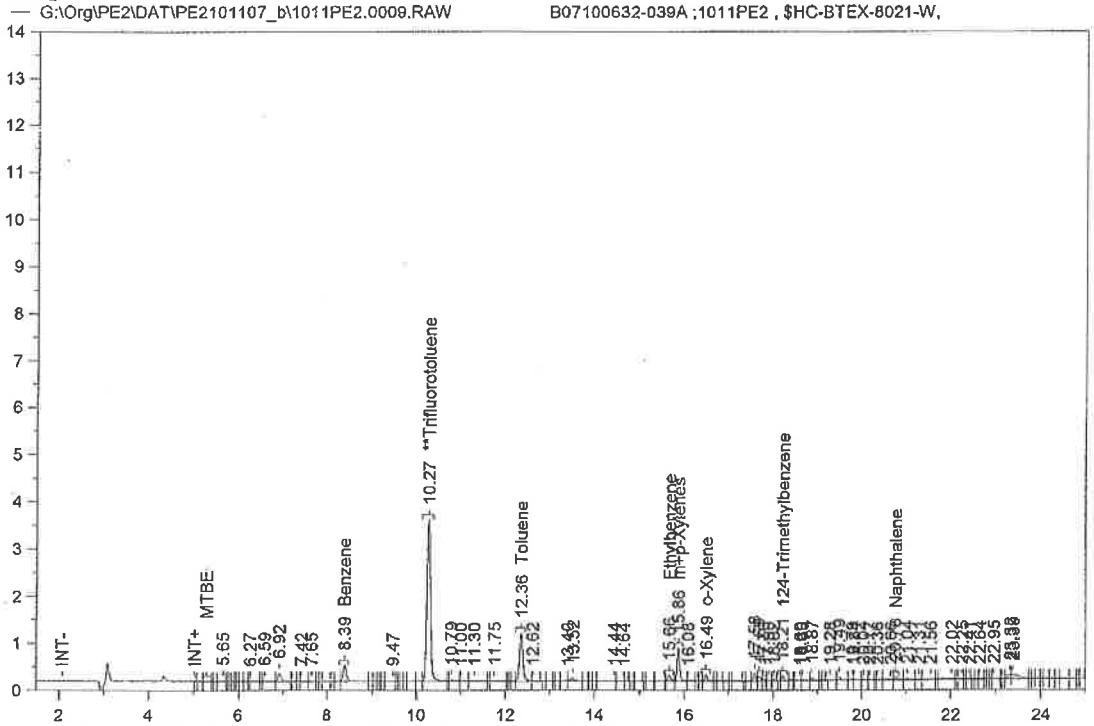

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-039A ;1011PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101107_b\1011PE2.0009.RAW
Date & Time Acquired: 10/11/2007 4:12:47 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.391	1.884	1.881	1970	1.549	
Toluene	12.358	-2.089	-2.086	5463	4.783	
Ethylbenzene	15.656	-5.396	-5.384	557	.543	
m+p-Xylenes	15.861	-5.604	-5.589	2828	2.504	
o-Xylene	16.488	-6.228	-6.216	635	.656	
124-Trimethylbenzene	18.214	18.214	18.214	428	2.	U
Naphthalene	20.759	-10.488	-10.487	415	1.407	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.272	50.	47.264	94.53	80-120

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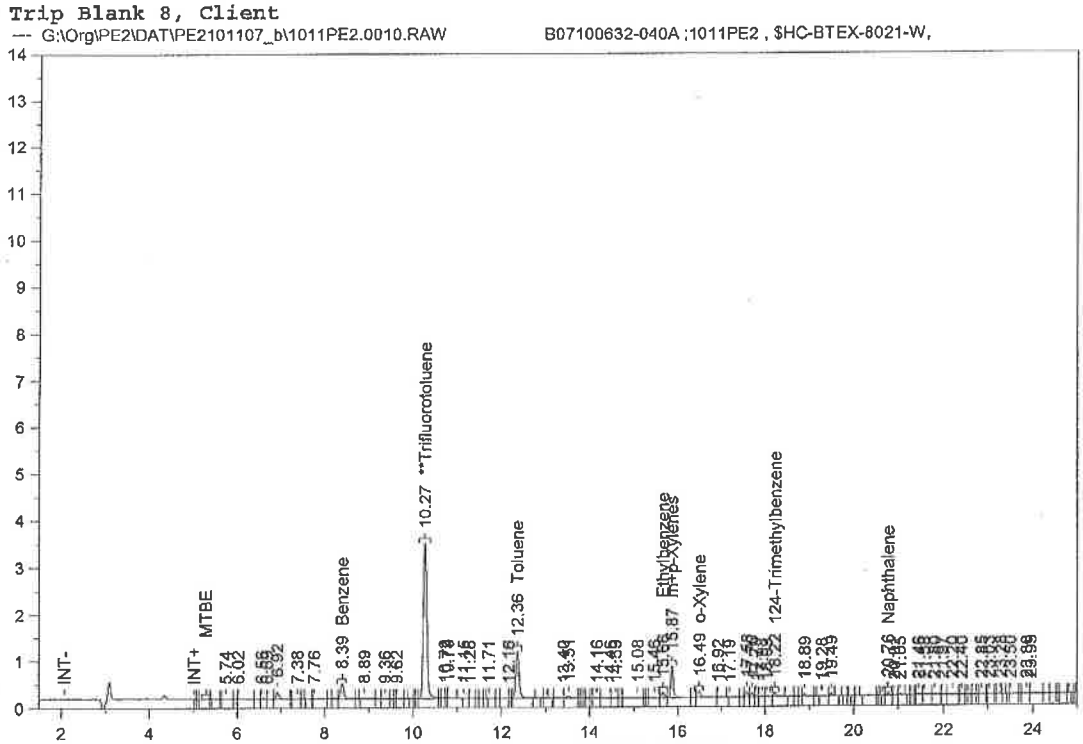
Trip Blank 8, Client



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-040A ;1011PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101107_b\1011PE2.0010.RAW
Date & Time Acquired: 10/11/2007 4:49:49 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.389	1.884	1.881	1790	1.408	
Toluene	12.36	-2.089	-2.09	5819	5.095	
Ethylbenzene	15.662	-5.396	-5.392	564	.55	
m+p-Xylenes	15.866	-5.604	-5.597	3031	2.684	
o-Xylene	16.494	-6.228	-6.224	771	.796	
124-Trimethylbenzene	18.22	18.22	18.22	457	2.	U
Naphthalene	20.765	-10.488	-10.495	268	.909	J

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.27	50.	46.014	92.03	80-120

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Trip Blank 9, Client
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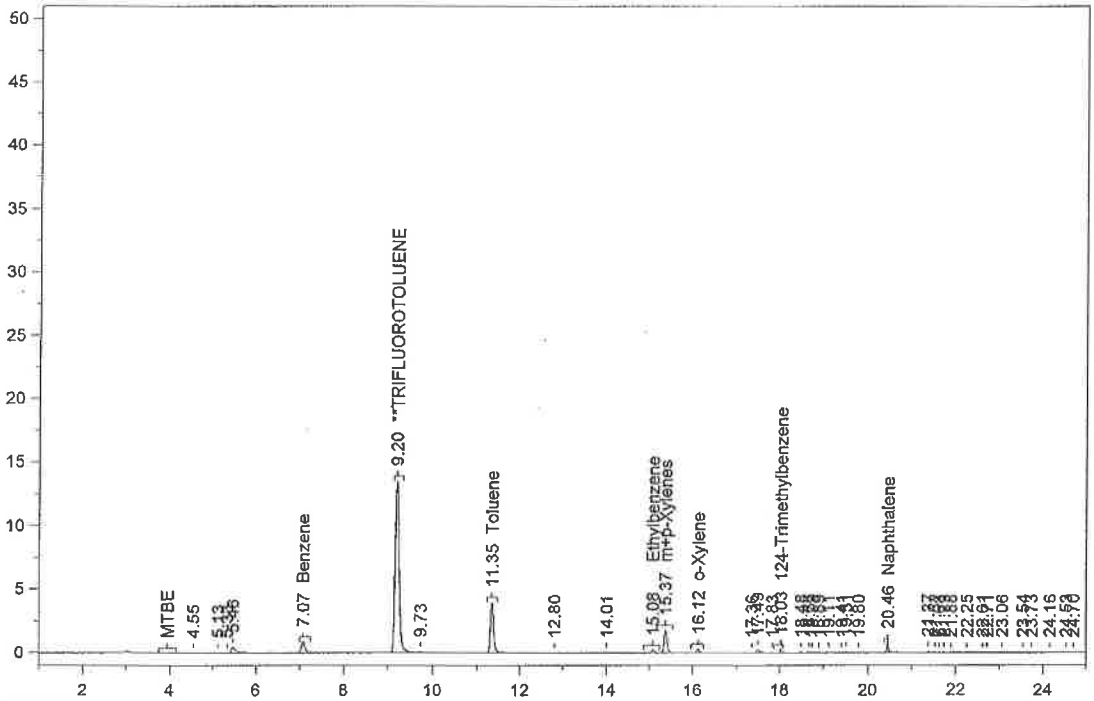

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Sample Name: B07100632-041A ;1011VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0015.RAW
Date & Time Acquired: 10/11/2007 6:17:53 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.073	2.11	2.124	5784	.996	
Toluene	11.349	-2.12	-2.152	21832	4.222	
Ethylbenzene	15.079	15.079	15.079	1237	.5	U
m+p-Xylenes	15.366	-6.11	-6.169	8616	1.799	
o-Xylene	16.124	-6.87	-6.927	1451	.346	J
124-Trimethylbenzene	18.03	18.03	18.03	819	2.	U
Naphthalene	20.458	20.458	20.458	2431	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.197	50.	49.629	99.26	80-120

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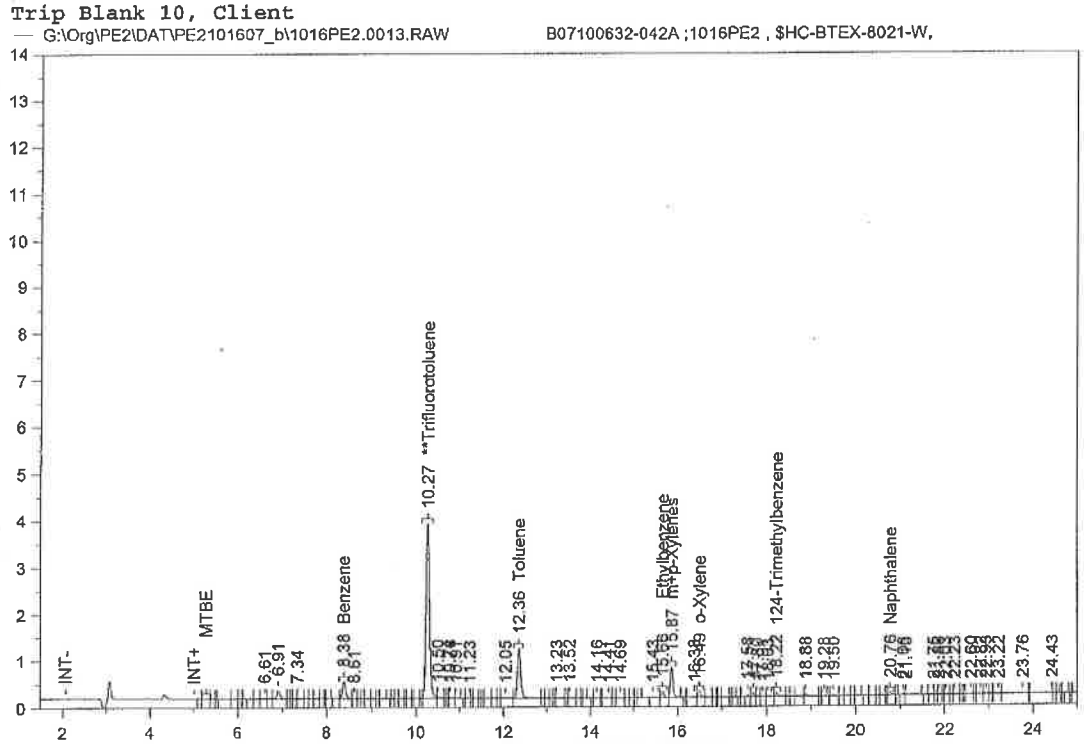
Trip Blank 10, Client



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-042A ;1016PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101607_b\1016PE2.0013.RAW
Date & Time Acquired: 10/16/2007 6:50:19 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.384	1.884	1.882	1895	1.49	
Toluene	12.358	-2.089	-2.092	6004	5.257	
Ethylbenzene	15.662	-5.396	-5.396	580	.565	
m+p-Xylenes	15.867	-5.604	-5.602	2759	2.444	
o-Xylene	16.494	-6.228	-6.228	579	.598	
124-Trimethylbenzene	18.218	18.218	18.218	347	2.	U
Naphthalene	20.764	-10.488	-10.498	266	.903	J

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.266	50.	52.157	104.31	80-120

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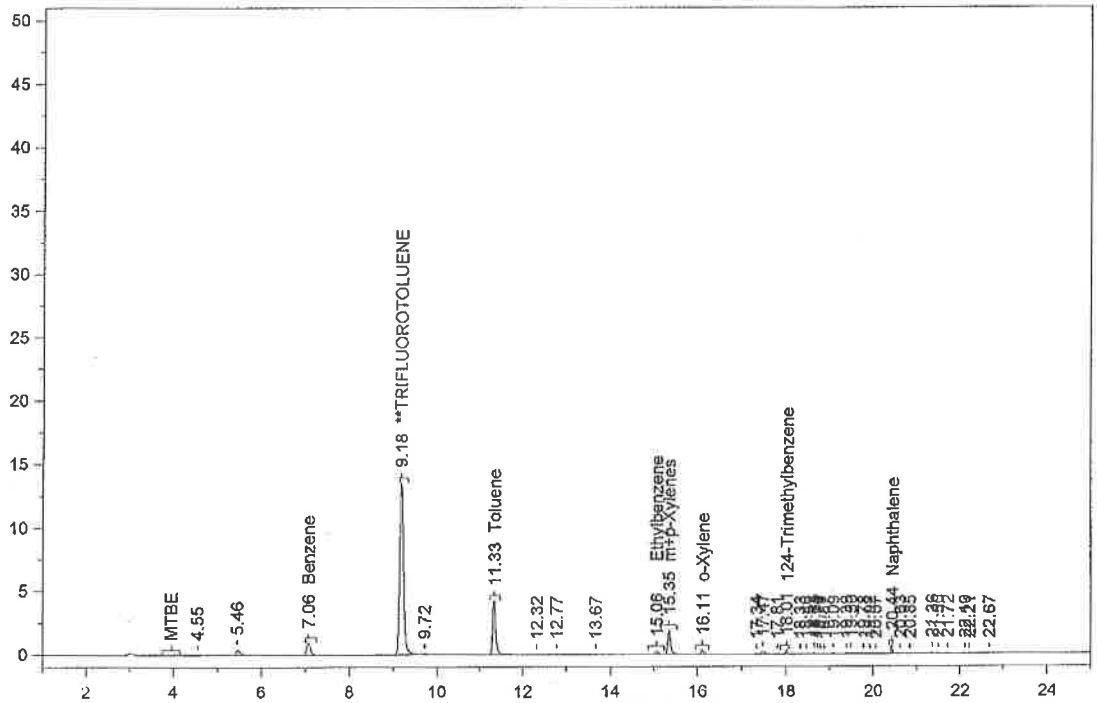

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM
Sample Name: B07100632-043A ;1011VAR , $HC-BTEX-8021-W,
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0016.RAW
Date & Time Acquired: 10/11/2007 6:53:08 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	7.06	2.11	2.122	5953	1.025	
Toluene	11.334	-2.12	-2.152	22699	4.39	
Ethylbenzene	15.065	-5.82	-5.883	1298	.32	J
m+p-Xylenes	15.35	-6.11	-6.168	9131	1.907	
o-Xylene	16.109	-6.87	-6.927	1568	.374	J
124-Trimethylbenzene	18.013	18.013	18.013	968	2.	U
Naphthalene	20.44	20.44	20.44	1796	1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.182	50.	49.819	99.64	80-120

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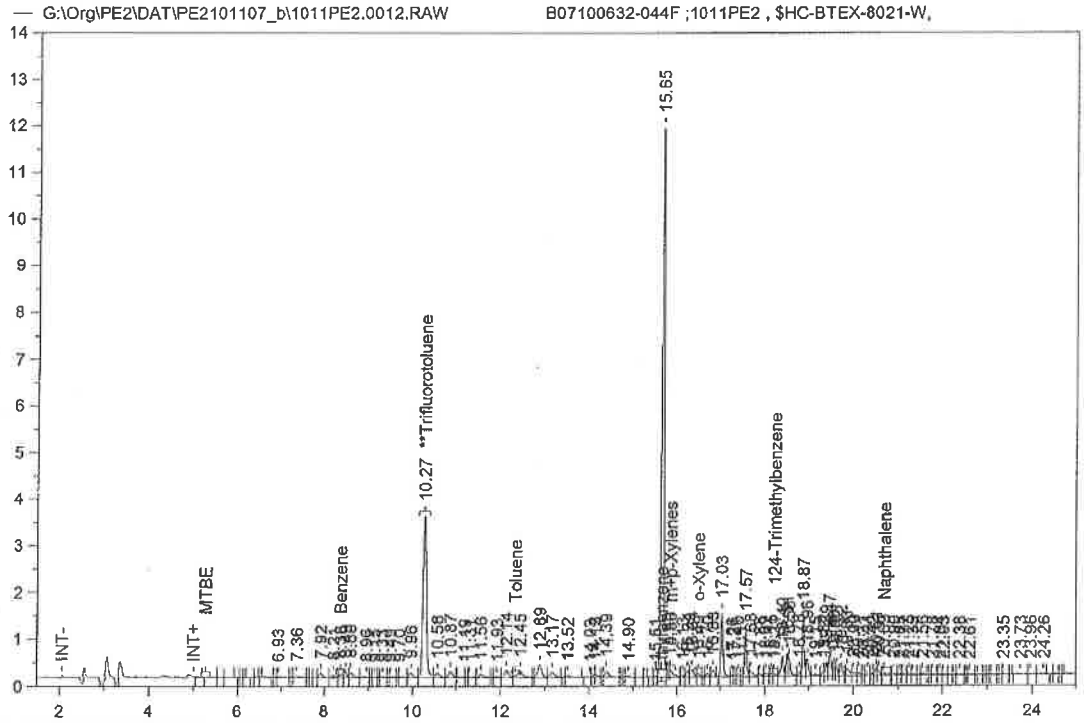
PNR-5



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-044F ;1011PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101107_b\1011PE2.0012.RAW
Date & Time Acquired: 10/11/2007 6:03:32 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.377	8.377	8.377	300	.5	U
Toluene	.	.	.		.5	U
Ethylbenzene	15.654	-5.396	-5.386	44035	42.946	
m+p-Xylenes	15.858	-5.604	-5.59	859	.761	
o-Xylene	16.494	16.494	16.494	324	.5	U
124-Trimethylbenzene	18.212	18.212	18.212	212	2.	U
Naphthalene	20.69	-10.488	-10.422	334	1.134	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.268	50.	46.955	93.91	80-120

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PNR-23
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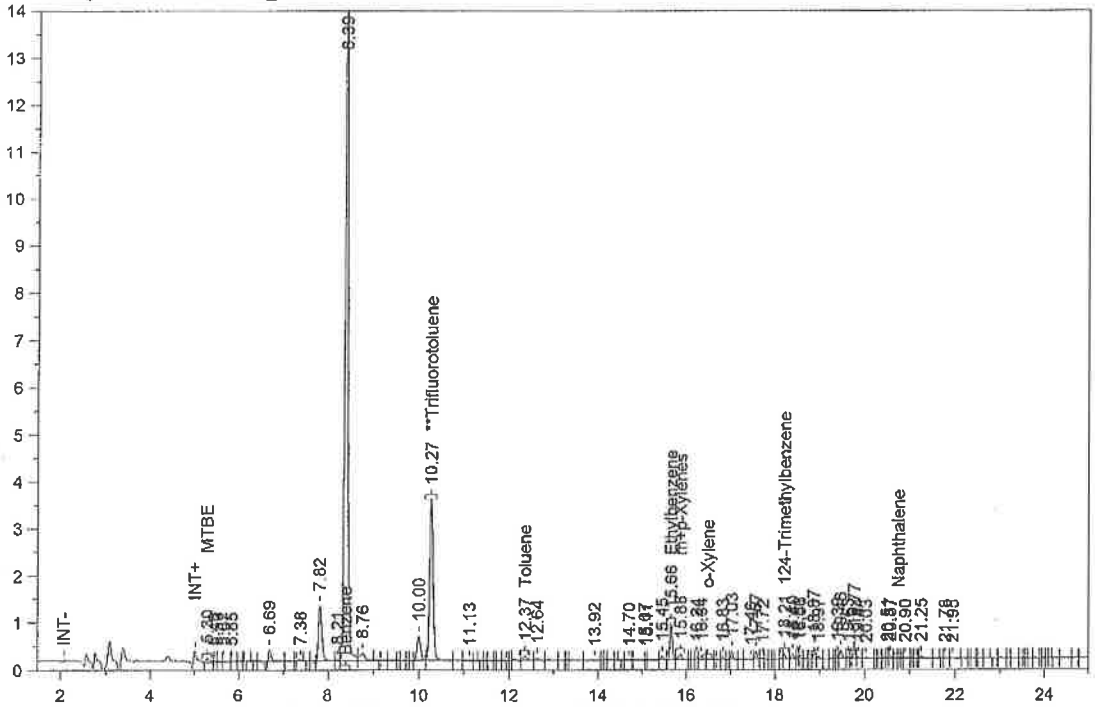

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-045F ;1011PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101107_b\1011PE2.0014.RAW
Date & Time Acquired: 10/11/2007 7:17:17 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	5.297	4.968	4.973	559	~~1.069~~ <2.0	
Benzene	8.385	1.884	1.884	67752	53.277	
Toluene	12.365	12.365	12.365	476	.5	U
Ethylbenzene	15.657	-5.396	-5.387	2800	2.731	
m+p-Xylenes	15.877	15.877	15.877	493	.5	U
o-Xylene	.	.	.		.5	U
124-Trimethylbenzene	18.212	18.212	18.212	313	2.	U
Naphthalene	.	.	.		1.	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.27	50.	45.605	91.21	80-120

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Whitmer
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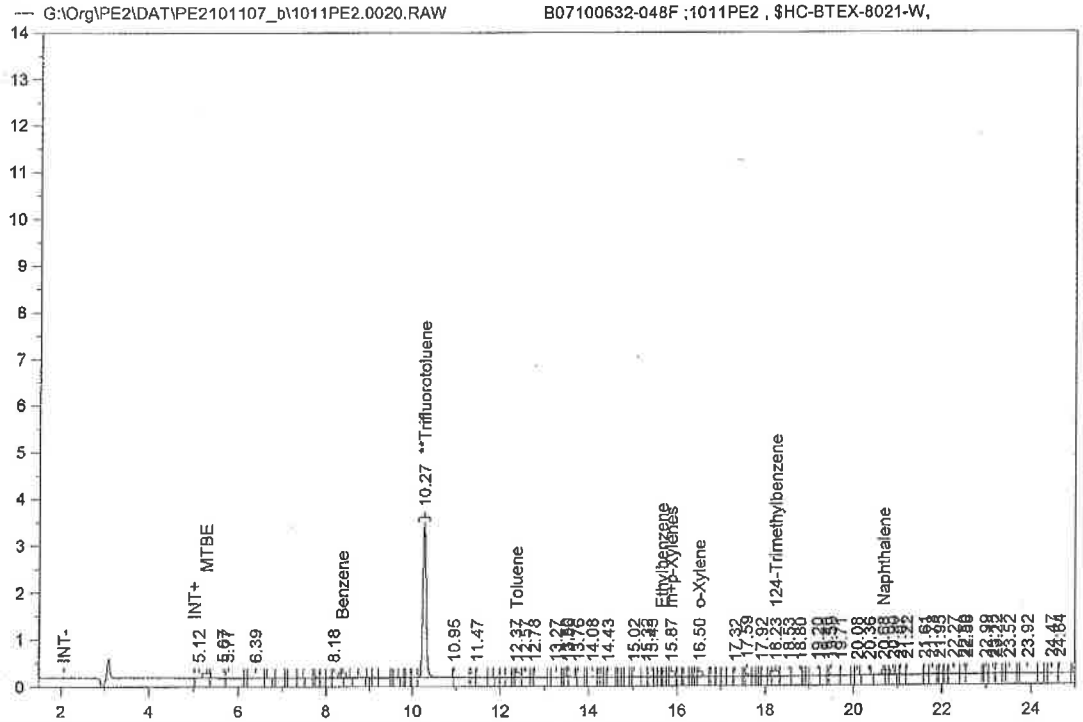

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-048F ;1011PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101107_b\1011PE2.0020.RAW
Date & Time Acquired: 10/11/2007 10:58:03 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	.	.	.		.5	U
Toluene	12.369	12.369	12.369	87	.5	U
Ethylbenzene	.	.	.		.5	U
m+p-Xylenes	15.865	15.865	15.865	120	.5	U
o-Xylene	16.503	16.503	16.503	140	.5	U
124-Trimethylbenzene	18.232	18.232	18.232	117	2.	U
Naphthalene	20.684	-10.488	-10.418	200	.68	J

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.266	50.	45.48	90.96	80-120

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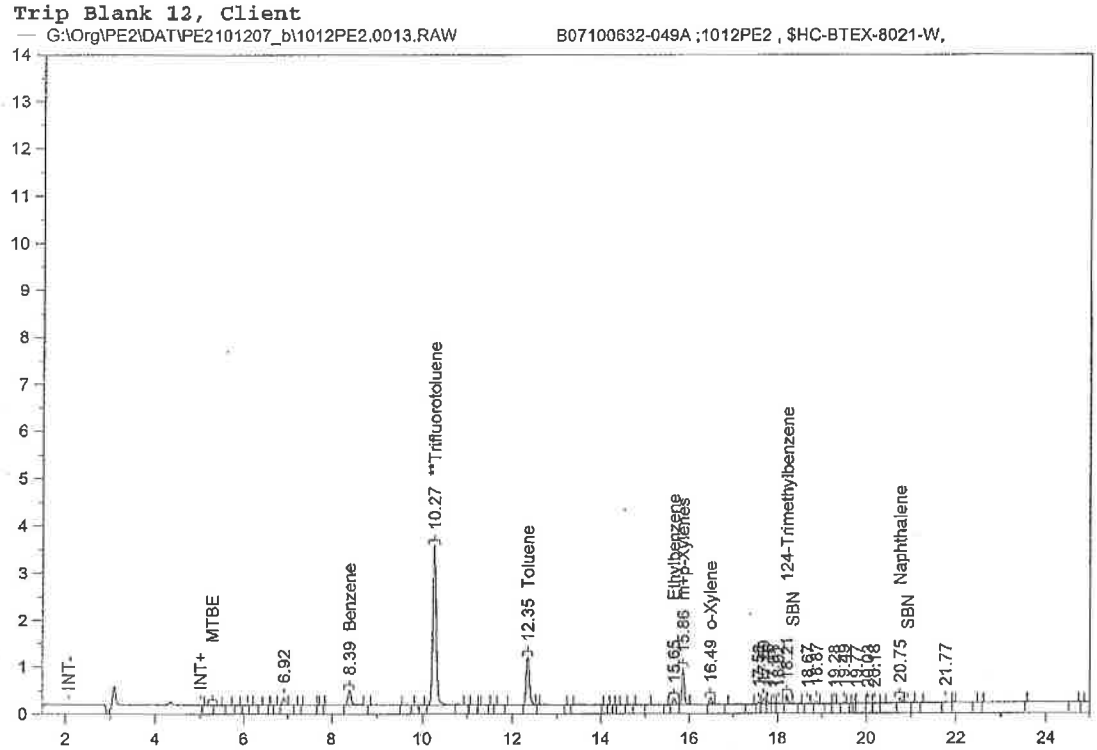
Trip Blank 12, Client



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-049A ;1012PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101207_b\1012PE2.0013.RAW
Date & Time Acquired: 10/12/2007 5:49:39 PM
Method File: G:\Org\PE2\Methods\101707p3.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.387	1.884	1.88	1684	1.325	
Toluene	12.355	-2.089	-2.088	5299	4.639	
Ethylbenzene	15.655	-5.396	-5.388	572	.558	
m+p-Xylenes	15.861	-5.604	-5.594	2978	2.638	
o-Xylene	16.487	-6.228	-6.221	514	.53	
124-Trimethylbenzene	18.212	18.212	18.212	594	2.	U
Naphthalene	20.751	-10.488	-10.485	302	1.023	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.266	50.	46.889	93.78	80-120

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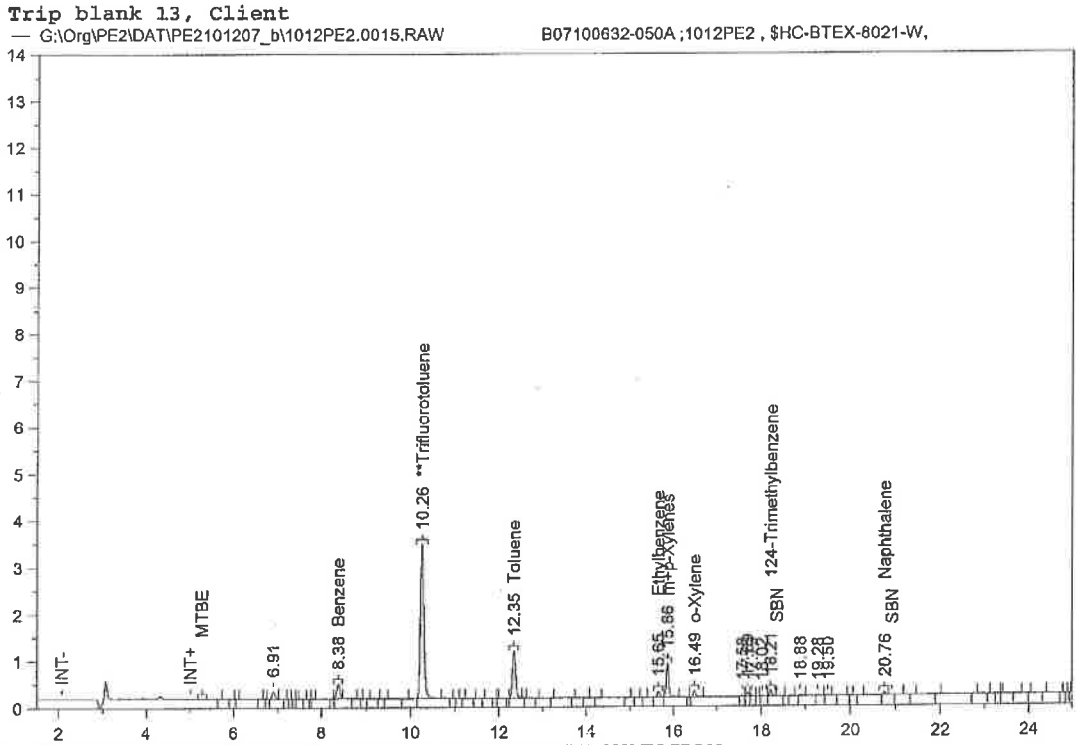
Trip blank 13, Client



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-050A ;1012PE2 , $HC-BTEX-8021-W,
Raw File: G:\Org\PE2\DAT\PE2101207_b\1012PE2.0015.RAW
Date & Time Acquired: 10/12/2007 7:03:18 PM
Method File: G:\Org\PE2\Methods\101707p3.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 1 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		1.	U
Benzene	8.38	1.884	1.882	1414	1.112	
Toluene	12.353	-2.089	-2.09	5297	4.638	
Ethylbenzene	15.654	-5.396	-5.392	555	.541	
m+p-Xylenes	15.861	-5.604	-5.598	2917	2.584	
o-Xylene	16.488	-6.228	-6.226	567	.586	
124-Trimethylbenzene	18.213	18.213	18.213	436	2.	U
Naphthalene	20.758	-10.488	-10.495	223	.756	J

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.262	50.	45.295	90.59	80-120

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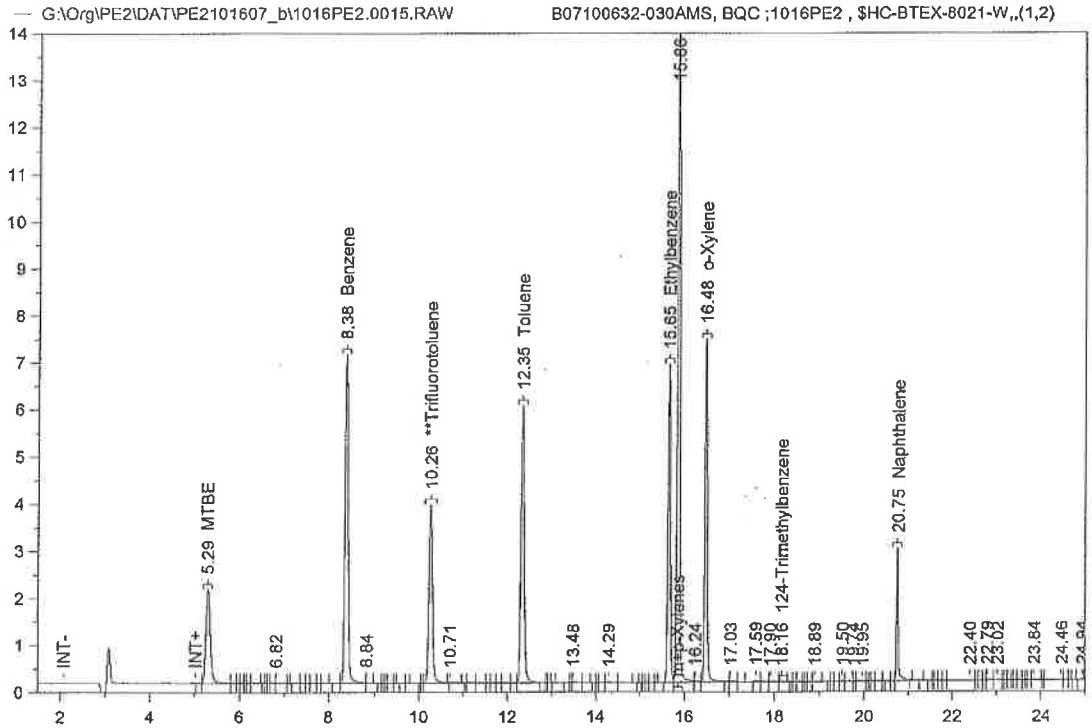
800-735-4489 • 406-252-6325 • 406-252-6069 fax • eli@energylab.com



PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-030AMS, BQC ;1016PE2 , $HC-BTEX-8021-W,,(1,2)
Raw File: G:\Org\PE2\DAT\PE2101607_b\1016PE2.0015.RAW
Date & Time Acquired: 10/16/2007 8:04:12 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	5.294	4.968	4.966	14184	54.261	
Benzene	8.379	1.884	1.881	33691	52.985	
Toluene	12.345	-2.089	-2.086	30176	52.84	
Ethylbenzene	15.649	-5.396	-5.389	25347	49.44	
m+p-Xylenes	15.857	-5.604	-5.597	57603	102.033	
o-Xylene	16.48	-6.228	-6.22	25732	53.121	
124-Trimethylbenzene	18.157	18.157	18.157	125	4.	U
Naphthalene	20.748	-10.488	-10.489	9126	61.891	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.26	100.	104.489	104.49	80-120

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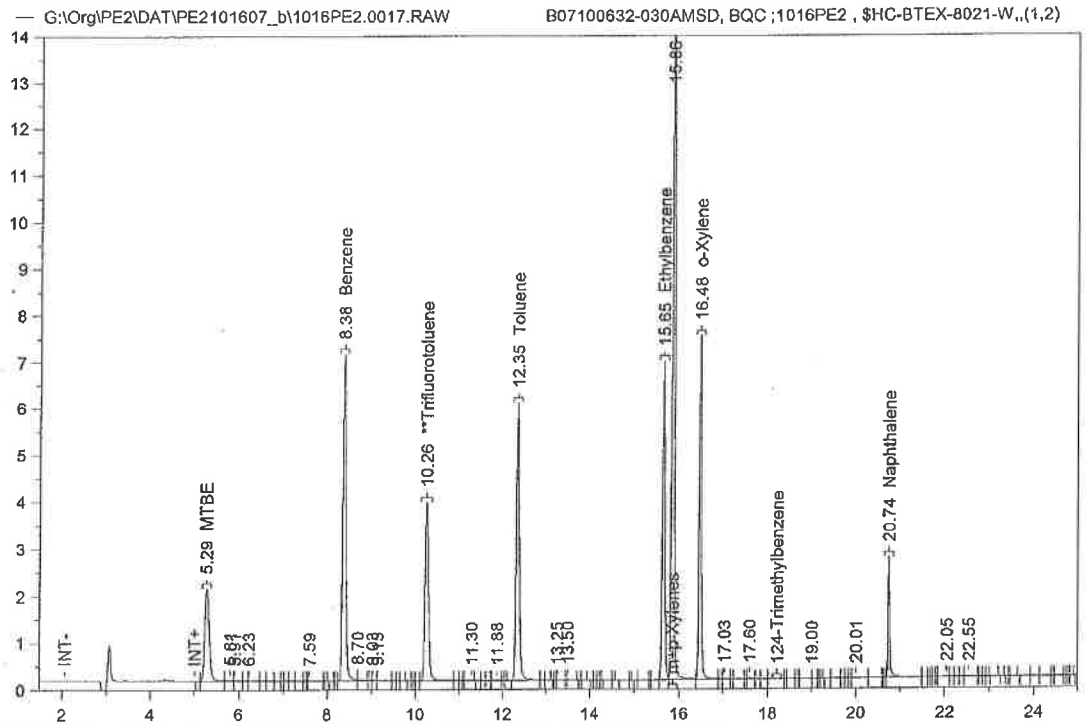

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-030AMSD, BQC ;1016PE2 , $HC-BTEX-8021-W,,(1,2)
Raw File: G:\Org\PE2\DAT\PE2101607_b\1016PE2.0017.RAW
Date & Time Acquired: 10/16/2007 9:18:14 PM
Method File: G:\Org\PE2\Methods\08P207.MET
Calibration File: G:\Org\PE2\Cals\08MAQ07.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	5.288	4.968	4.975	13761	52.642	
Benzene	8.377	1.884	1.885	33613	52.863	
Toluene	12.351	-2.089	-2.088	30166	52.824	
Ethylbenzene	15.652	-5.396	-5.389	25382	49.508	
m+p-Xylenes	15.859	-5.604	-5.597	57864	102.495	
o-Xylene	16.482	-6.228	-6.219	24976	51.56	
124-Trimethylbenzene	.	.	.		4.	U
Naphthalene	20.744	-10.488	-10.482	7065	47.91	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	10.263	100.	105.396	105.4	80-120

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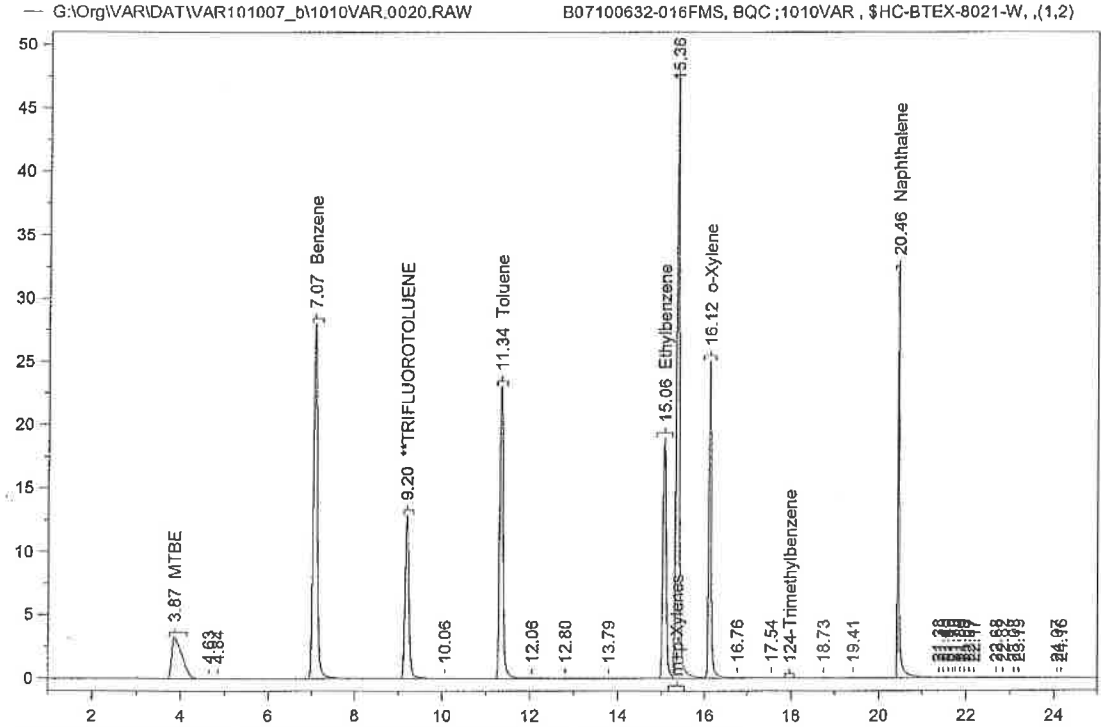

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-016FMS, BQC ;1010VAR , $HC-BTEX-8021-W, ,(1,2)
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0020.RAW
Date & Time Acquired: 10/10/2007 8:21:18 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.867	5.28	5.329	52463	43.881	
Benzene	7.065	2.11	2.13	180015	61.974	
Toluene	11.344	-2.12	-2.148	126586	48.961	
Ethylbenzene	15.064	-5.82	-5.868	96797	47.746	
m+p-Xylenes	15.357	-6.11	-6.161	234173	97.803	
o-Xylene	16.117	-6.87	-6.921	100404	47.918	
124-Trimethylbenzene	.	.	.		4.	U
Naphthalene	20.457	-11.19	-11.261	82577	42.192	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.196	100.	95.241	95.24	80-120

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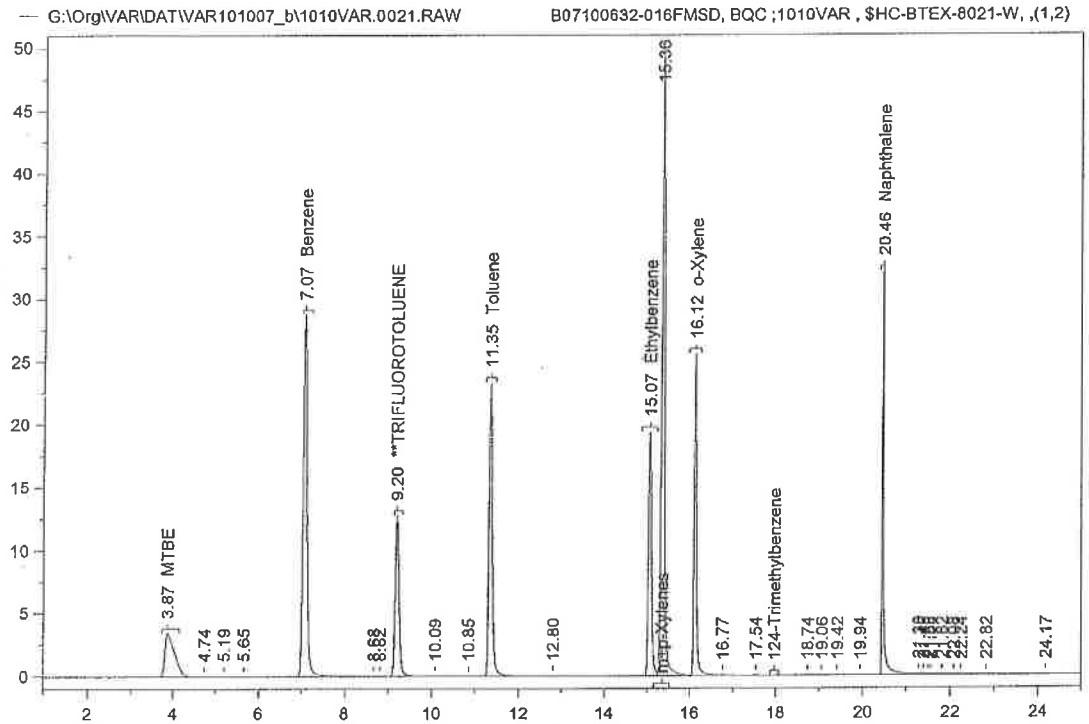

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-016FMSD, BQC ;1010VAR , $HC-BTEX-8021-W, ,(1,2)
Raw File: G:\Org\VAR\DAT\VAR101007_b\1010VAR.0021.RAW
Date & Time Acquired: 10/10/2007 8:56:28 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.868	5.28	5.332	54132	45.277	
Benzene	7.071	2.11	2.129	183700	63.242	
Toluene	11.352	-2.12	-2.151	128779	49.809	
Ethylbenzene	15.07	-5.82	-5.87	98044	48.361	
m+p-Xylenes	15.364	-6.11	-6.163	236867	98.928	
o-Xylene	16.122	-6.87	-6.921	101879	48.622	
124-Trimethylbenzene	.	.	.		4.	U
Naphthalene	20.458	-11.19	-11.257	82041	41.918	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.201	100.	94.437	94.44	80-120

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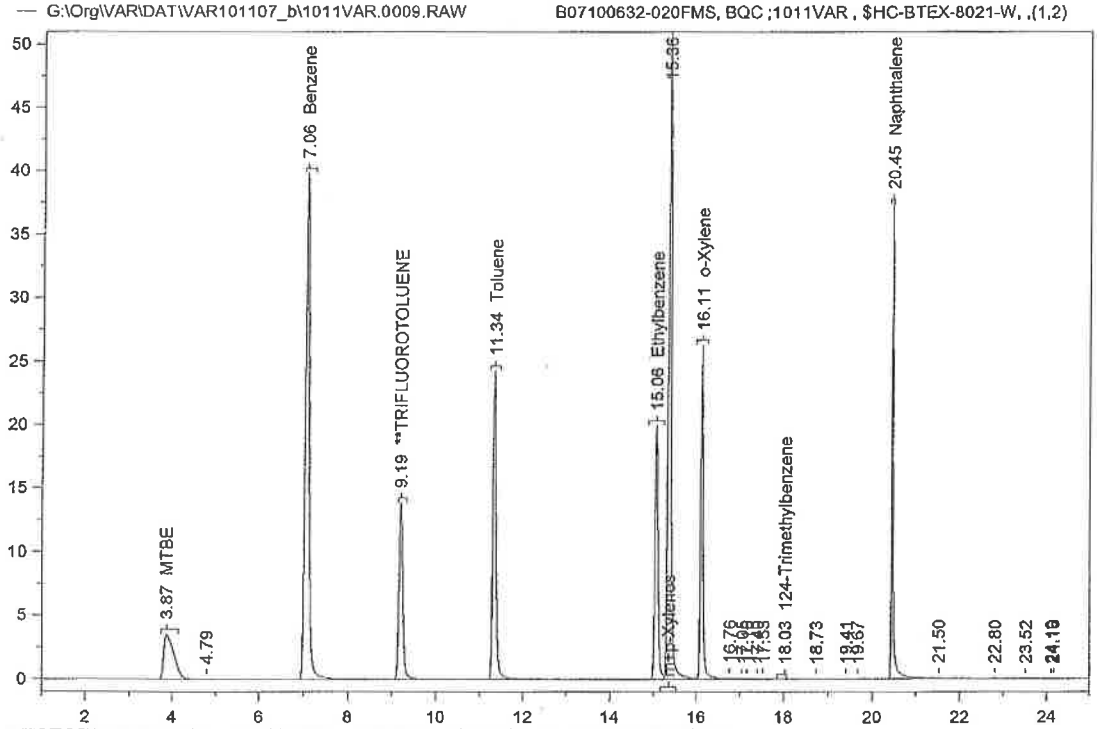

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-020FMS, BQC ;1011VAR , $HC-BTEX-8021-W, ,(1,2)
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0009.RAW
Date & Time Acquired: 10/11/2007 2:40:39 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.868	5.28	5.323	56205	47.011	
Benzene	7.062	2.11	2.129	255062	87.81	
Toluene	11.34	-2.12	-2.149	132877	51.394	
Ethylbenzene	15.062	-5.82	-5.87	101584	50.107	
m+p-Xylenes	15.356	-6.11	-6.165	246135	102.799	
o-Xylene	16.115	-6.87	-6.924	106131	50.651	
124-Trimethylbenzene	18.033	18.033	18.033	85	4.	U
Naphthalene	20.451	-11.19	-11.26	95783	48.94	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.191	100.	101.438	101.44	80-120

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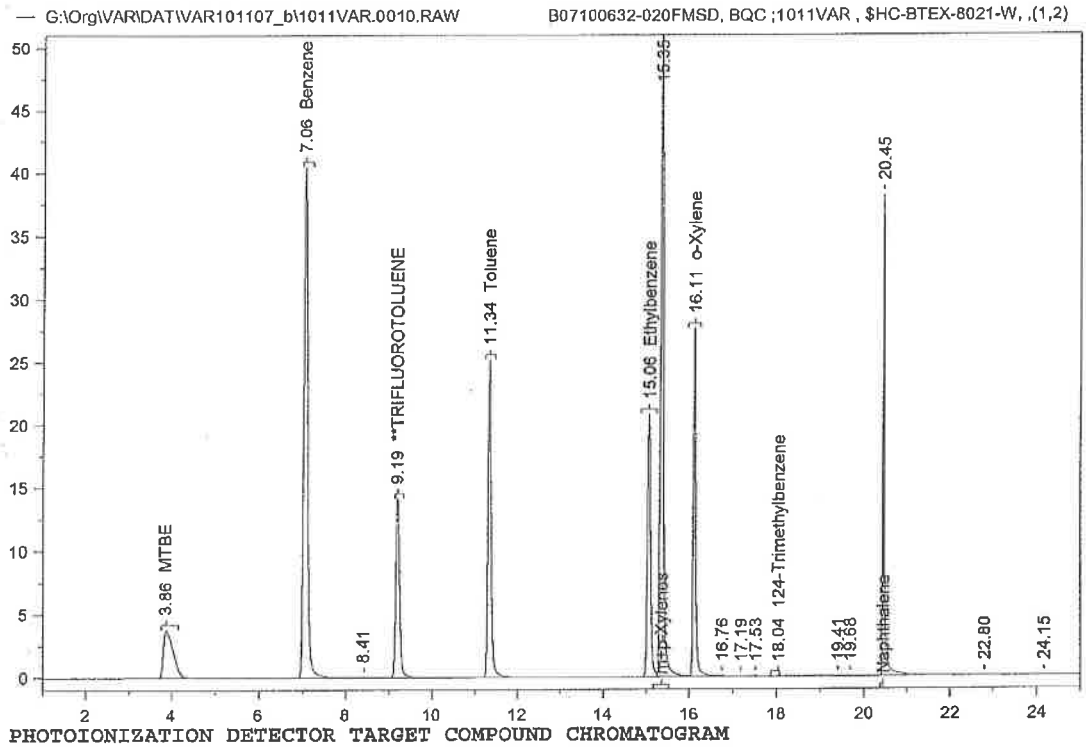

PHOTOIONIZATION DETECTOR TARGET COMPOUND CHROMATOGRAM

Sample Name: B07100632-020FMSD, BQC ;1011VAR , $HC-BTEX-8021-W, ,(1,2)
Raw File: G:\Org\VAR\DAT\VAR101107_b\1011VAR.0010.RAW
Date & Time Acquired: 10/11/2007 3:15:28 PM
Method File: G:\Org\VAR\Methods\2307VAR.MET
Calibration File: G:\Org\VAR\Cals\2307MAS.CAL
Sample Weight: 5 Dilution: 2 S.A.: 2

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	3.865	5.28	5.327	59354	49.645	
Benzene	7.059	2.11	2.132	258427	88.969	
Toluene	11.338	-2.12	-2.147	138433	53.543	
Ethylbenzene	15.06	-5.82	-5.869	106005	52.288	
m+p-Xylenes	15.355	-6.11	-6.164	256623	107.179	
o-Xylene	16.114	-6.87	-6.923	110893	52.923	
124-Trimethylbenzene	18.04	18.04	18.04	125	4.	U
Naphthalene	20.452	-11.19	-11.261	97152	49.639	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**TRIFLUOROTOLUENE	9.191	100.	103.498	103.5	80-120

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Energy Laboratories Inc
Workorder Receipt Checklist

B07100632

HKM Engineering Inc

Login completed by: Gina M. McCartney
Reviewed by: Denise Ruby
Reviewed Date: 10/8/2007 10:16:43 AM

Date and Time Received: 10/5/2007 5:00 PM
Received by: jjs
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	4°C On Ice
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: HKM Engineering

Project Name, PWS #, Permit #, Etc.: Pioneer Natural Resources USA, Inc Biere Well Site

Report Mail Address: PO Box 31318 Billings MT 59107

Contact Name, Phone, Fax, E-mail: Nate Peterson 586-8834

Sampler Name if other than Contact:

Invoice Address: Same

Invoice Contact & Phone #: Charlie Peterson 869-6372

Purchase Order #: 14B805.101

ELI Quote #: 78

Report Required For: POTW/WWTP ☐ DW ☐ Other _____

Special Report Formats - ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other _____
EDD/EDT ☐ Format _____

ANALYSIS REQUESTED

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Shipped by: Hand

Cooler ID(s)

Receipt Temp: 4 °C

Custody Seal Y N
Intact Y N
Signature Y N
Match

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	See Quote #78	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID (LABORATORY USE ONLY)
9	1 USGS 92-12	10/2/07	17:10	8 W	✓		X		0710063 2-021
9	2 PNR-6	"	18:55		✓		✓		-022
9	3 PNR-16	10/3/07	10:55		✓		✓		-023
10	4 PNR-12	"	13:00		✓		✓		-024
10	5 PNR-33-06	"	15:35		✓		✓		-025
10	6 PNR-22	"	16:45		✓		✓		-026
11	7 PNR-9	10/4/07	10:40		✓		✓		-027
11	8 M-27	"	12:30		✓		✓		-028
11	9 PNR-8	"	14:35		✓		✓		-029
5	10 USGS-06-7	"	17:50	—	✓		✓		-030

Custody Record MUST be Signed

Relinquished by (print): David T. Gates Date/Time: 10/5/07 17:00 Signature: [signature]

Received by (print): Date/Time: Signature:

Relinquished by (print): Date/Time: Signature:

Received by (print): Jennifer Smith Date/Time: 10/5/07 1700 Signature: Jennifer Smith

Sample Disposal: Return to client: _____ Lab Disposal: _____

LABORATORY USE ONLY
Sample Type: _____ # of fractions _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: HKM Engineering

Project Name, PWS #, Permit #, Etc.: Pioneer Nat. Resources Bice I-22 Well Site 14B0051101

Report Mail Address: Billings

Contact Name, Phone, Fax, E-mail: See Sheets 1-3

Sampler Name if other than Contact:

Invoice Address:

Invoice Contact & Phone #:

Purchase Order #:

ELI Quote #:

Report Required For: POTW/WWTP ☐ DW ☐ Other _____

Special Report Formats - ELI must be notified prior to sample submittal for the following:
NELAC ☐ AZLA ☐ Level IV ☐
Other _____
EDD/EDT ☐ Format _____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Shipped by: Hand

Cooler ID(s)

Receipt Temp 4 °C

Custody Seal Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Solids/Solids Vegetation Bioassay Other)	Quote 78	Run VOCs									SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Lab ID
8	1 PNR-14 10/4/07	~~10/5/07~~	16:50	BW	X											X		B0710063 2-031
5	2 PNR-15 10/4/07	~~10/5/07~~	18:00	BW														-032
	3 TB1 TB2																	-033 -034
	4 TB3 TB4																	-035 -036
	5 TB5 TB6																	-037 -038
	6 TB7 TB8																	-039 -040
	7 TRIP BLANKS 9					X												-041 -042 -043
	8 TB 10 TB 11																	
	9																	
	10																	

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
David T. Gates	10/5/07 17:00	David T. Gates			
Relinquished by (print):	Date/Time:	Signature:	Received by (print): Jennifer Smith	Date/Time: 10/5/07 1700	Signature: Jennifer Smith

Sample Disposal: Return to client: _____ Lab Disposal: _____

LABORATORY USE ONLY
Sample Type: _____ # of fractions _____

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ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: HKM Engineering	Project Name, PWS, Permit, Etc.: Pioneer – Biere Well Site	Sample Origin State: MT	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: PO Box 31318 Billings MT 59107	Contact Name: Nate Peterson Phone/Fax: 586-8834	Email:	Sampler: (Please Print) Nate Peterson
Invoice Address: Same	Invoice Contact & Phone: Charlie Peterson 864-6372	Purchase Order: 148805.101	Quote/Bottle Order: 78

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: Hand

Cooler ID(s):

Receipt Temp 4 °C

On Ice: (Yes) No

Custody Seal Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	See Quote 78	VOC							SEE ATTACHED	Normal Turnaround (TAT)	RUSH		LABORATORY USE ONLY
TB 12	1 PNR-5	10/5/07	11:40	8W	X												B7100632-044
12	2 PNR-23		12:30														-045
13	3 MOC-2		14:30														-046
13	4 PNR-34-07		15:40														-047
13	5 Whitmer		18:00														-048
	6																
	7 2 Trip Blanks (1 per cooler) Number 12 And 13					X											-049 -050
	8																
	9																
	10																

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Nate Peterson	10/5/07 11:00		Charles L. Peterson	10/8/07 10:00	
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Debbie Fosigal	Date/Time: 10-8-07 1000	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: X

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: HKM Engineering per client invoice to BLM

Project Name, PWS #, Permit #, Etc.: Bloom Natural Resources Bloom I-22 well site 14B805.101

Report Mail Address: Bozeman

Contact Name, Phone, Fax, E-mail: Chris Leibli per client contact 406-586-8834 cleibli@hkminc.com Nate Petersen

Sampler Name if other than Contact: Chris Leibli Nate Petersen Dave Gates

Invoice Address: Same

Invoice Contact & Phone #: Same per client Charlie Petersen

Purchase Order #: 14B805.101

ELI Quote #: 78

Report Required For: POTW/WWTP ☐ DW ☐ Other _____

Special Report Formats - ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other _____
EDD/EDT ☐ Format _____

ANALYSIS REQUESTED

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Shipped by: Hand

Cooler ID(s)

Receipt Temp 4 °C

Custody Seal Y N
Intact Y N
Signature Y N
Match

		SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Quote 78									SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments:	Lab ID
1	1	MOC-3	10/2/07	19:00	SW	X										X			B710063001
1	2	MOC-1b	10/3/07	10:35															-002
1	3	MOC-20b		13:30															-003
2	4	PNR-36-07		14:30															-004
2	5	PNR-10		16:30															-005
2	6	MOC-20A		17:00															-006
3	7	MOC-4	10/4/07	11:00															-007
3	8	PNR-28		16:30															-008
3	9	PNR-13		17:30															-009
5	10	PNR-7		19:00															-010

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
David T. Gates	10/5/07 17:00	David T. Gates			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Jennifer Smith	10/5/07 1700	Jennifer Smith

Sample Disposal: Return to client: _____ Lab Disposal: _____

LABORATORY USE ONLY
Sample Type: _____ # of fractions _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

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ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT, provide as much information as possible. Refer to corresponding notes on reverse side.

Company Name: HKM Engineering Client, Invoices to Bpp	Project Name, PWS #, Permit #, Etc.: Pioneer Natural Resources Biere I-22 Well Site 143805.101
Report Mail Address: Bozeman	Contact Name, Phone, Fax, E-mail: Chris Leibi Nate Peterson (cm) 406-586-8834 cleibi@hkminc.com
	Sampler Name if other than Contact: Chris Leibi; Nate Peterson; Dave Gates
Invoice Address: Same	Invoice Contact & Phone #: Same Charlie Peterson (cm)
Purchase Order #: 143805.101	ELI Quote #: 78

Report Required For: POTW/WWTP ☐ DW ☐ Other _____

Special Report Formats - ELI must be notified prior to sample submittal for the following:

NELAC ☐ A2LA ☐ Level IV ☐

Other _____

EDD/EDT ☐ Format _____

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Shipped by: Hand

Cooler ID(s)

Receipt Temp 4 °C

Custody Seal Y N

Intact Y N

Signature Y N

Match

Lab ID

ANALYSIS REQUESTED

Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Quote 78	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)	Comments	LABORATORY USE ONLY
4	1 PNR-35	10/2/07	16:05	BW	X		X			B071000432-011
4	2 PNR-18	10/2/07	17:20	BW						-012
4	3 PNR-29	10/2/07	18:40	BW						-013
6	4 USGS-93-3	10/3/07	11:50	BW						-014
6	5 PNR-27	10/3/07	12:50	BW						-015
6	6 PNR-19	10/3/07	14:50	BW						-016
7	7 M-28	10/3/07	16:40	BW						-017
7	8 PNR-20	10/4/07	10:25	BW						-018
7	9 PNR-21	10/4/07	11:40	BW						-019
8	10 M-31	10/4/07	14:30	BW						-020

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
David E. Gates	10/5/07 17:00	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print): Jennifer Smith	Date/Time: 10/5/07 1700	Signature: Jennifer Smith

Sample Disposal: Return to client: _____ Lab Disposal: _____

LABORATORY USE ONLY

Sample Type: _____ # of fractions _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at *www.energylab.com* for additional information, downloadable fee schedule, forms, & links.