

GW - 163

WORK PLANS

2002



10601 Lomas NE, Suite 106
Albuquerque, NM 87112
(505) 237-8440

May 1, 2002

RECEIVED
MAY 17 2002
Environmental Bureau
Oil Conservation Division

Mr. Wayne Price
NM Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

**RE: Apex Compressor Station
Phase II Groundwater Investigation
Hobbs, Lea County, New Mexico
Maxim Project No. 1690008**

Dear Mr. Price:

Accompanying this letter is a copy of a report detailing the subsurface investigation performed beginning the week of August 27, 2001, at the Apex Compressor Station, west of Hobbs, New Mexico.

In the report we provide details of additional actions that we propose to implement at the facility. We are prepared to initiate these actions as soon as we receive your approval to proceed. If you have any questions or comments regarding this report, please do not hesitate to contact Dan Erskine at 505-237-8440.

Sincerely,

MAXIM TECHNOLOGIES, INC.

Daniel W. Erskine, Ph.D.
Senior Geochemist

Attachment

Cc: Neil Goates, Conoco Remediation Technology/Houston, Texas
Mark Bishop, Conoco NG&GP/Maljamar, New Mexico
Paul R. Sheeley, OCD/Hobbs, New Mexico



Price, Wayne

From: Price, Wayne
Sent: Thursday, June 27, 2002 11:02 AM
To: 'r-neal.goates@conoco.com'
Cc: 'cyancey@maximusa.com'
Subject: Conoco Apex Compressor St. GW-163

Contacts: Neal Goates

OCD is in receipt of the proposed Phase II Groundwater Investigation Dated May 1, 2002 for the above subject facility. In order for OCD to process this request Conoco shall submit a request to modify the current discharge plan. OCD has determined this will be a major modification since it involves injection into the groundwater. Please send a \$100.00 filing fee upon submittal.

Sincerely:



Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

May 1, 2002

Mr. Wayne Price
Environmental Bureau
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

**RE: Apex Compressor Station
Phase II Groundwater Investigation
Hobbs, Lea County, New Mexico
Maxim Project No. 1690008**

Dear Mr. Price:

On behalf of Conoco Inc. (Conoco), Maxim Technologies, Inc. (Maxim) has prepared this letter report for your review and approval detailing the Phase II groundwater investigation performed beginning the week of August 27, 2001, at the Apex Compressor Station, west of Hobbs, New Mexico. The purpose of the Phase II investigation was to install additional monitor wells and sample the new and existing wells to collect additional information on the horizontal extent of groundwater impacts.

BACKGROUND

During the due diligence work (September 7 and 8, 2000), a total of six soil borings (B-1 through B-6) were advanced to depths ranging from 35 to 75 feet below ground surface (bgs). Groundwater was encountered between 60 and 61 feet bgs. Analysis of soil samples indicated there were no samples containing hydrocarbon concentrations above the current New Mexico Oil Conservation Division (OCD) action levels. Analysis of groundwater samples indicated that one sample (B-6) of the three groundwater samples collected exhibited hydrocarbon concentrations in excess of OCD action levels (benzene at 48.0 micrograms per liter [$\mu\text{g/L}$]). Groundwater impacts were identified near the condensate tanks. The OCD was notified of this impact by letter on December 2, 2000.

Subsequently, during a Phase I groundwater investigation, Maxim installed three 2-inch-diameter PVC monitor wells around the existing condensate tank farm at the Apex station with a truck-mounted drill rig. The wells were installed and developed per conditions specified by the January 11, 2001, project approval memo from the OCD. Results of this Phase I investigation indicated that the groundwater flow direction is south-southeast with a gradient of 0.0059 foot per foot and benzene, barium, and chromium exceeded New Mexico Groundwater Quality Standards (NMGQS) in groundwater (10 parts per billion [ppb], 1 parts per million [ppm], and

0.05 ppm, respectively). Benzene and barium standards were exceeded in the farthest downgradient well (78 ppb and 2.8 ppm, respectively) and chromium standards were exceeded in the upgradient well (0.22 ppm). The Phase I report was submitted to OCD March 2, 2001, and was approved May 22, 2001.

PHASE II INVESTIGATION

Maxim initially proposed the installation of four additional temporary monitor wells and collection of one round of chemical and water level data from all site wells. These actions were taken during the week of August 27, 2001. When results of chemical analyses were received, values for benzene, toluene, ethylbenzene and total xylenes (BTEX) constituents were substantially higher than Phase I sampling results. A round of confirmatory sampling was conducted during the week of November 12, 2001, for BTEX only. Results of confirmatory sampling indicated that BTEX concentrations were substantially higher than those found during the Phase I investigation and that the newly installed, farthest downgradient monitor well had BTEX concentrations in groundwater that were above NMGQS. Therefore, during the week of January 7, 2002, two additional temporary monitor wells were installed and a complete round of water level and chemical data was collected from all wells. The purposes of the above actions were as follows:

- Further define of levels of constituents in groundwater
- Further define of groundwater flow directions at the facility
- Provide an indication of upgradient or background concentrations of constituents

Specific monitor well locations are presented in Figure 1 and justifications for each location are as follows:

- Monitor well MW-4 was installed north of the water storage tank (Figure 1) to monitor background levels of constituents and help define groundwater flow directions.
- Monitor well MW-5 was installed approximately 60 feet northeast of MW-3 to help define the horizontal extent of site-related constituents.
- Monitor well MW-6 was installed approximately 60 feet southwest of MW-3 to help define the horizontal extent of site-related constituents.
- Monitor well MW-7 was installed approximately 100 feet southeast of MW-3 and directly downgradient to help define the horizontal extent of site-related constituents.
- Monitor well MW-8 was installed approximately 200 feet southeast and downgradient of MW-7 to help define the horizontal extent of site-related constituents.
- Monitor well MW-9 was installed approximately 100 feet southwest of MW-6 to help define the horizontal extent of site-related constituents.

Soils were sampled continuously and logged according to the Unified Soil Classification System protocol. Soil boring logs are presented with previous soil boring logs from the site as Attachment 1 of this report. Soil samples were scanned with a photo-ionization detector (PID) to assess any possible presence of impacts by organic constituents. Table 1 shows PID results from each of the six new soil borings.

At least 15 feet of well screen was placed across the water table interface with 5 feet of the well screen above the water table and 10 feet of the well screen below the water table. All wastes generated during the investigation were disposed of at CRI's Hobbs Disposal Facility. All of the new monitor wells were installed as temporary rather than permanent, based on the phone conversation of July 19, 2001, between Wayne Price and Bill Olson of the OCD and Clyde Yancey of Maxim. The definition of a temporary monitor well agreed upon during the call is as follows:

- The well will be set, a gravel pack placed at least five feet above the screen, followed by a minimum two-foot bentonite seal. The remainder of the annulus will not be grouted. A suitable surface seal will be placed to prohibit foreign material from falling into the annulus.
- The well will be developed and sampled following standard protocols.
- The top of casing will be surveyed so that accurate water table elevations can be determined.
- Once laboratory analyses are received, a determination will be made in consultation with the OCD as to whether or not the well should be removed or grouted in place. It is the intent of this methodology to ensure that only monitoring wells that *make sense* (i.e. define the leading edge of the plume, establish background, establish inner plume transport mechanisms, etc.) remain at the site. Wells that duplicate or provide no new data will be removed.

No less than 48 hours after the wells were developed, groundwater from all monitor wells was purged, sampled and analyzed for volatile organic compounds (VOCs) using EPA Method 8260. General chemistry, total dissolved solids, pH and New Mexico Water Quality Control Commission (NMWQCC) metals were analyzed using EPA-approved methods and quality assurance/quality control (QA/QC) procedures. Laboratory results are presented in Tables 2 and 3. The laboratory report is included as Attachment 2 of this report.

RESULTS OF INVESTIGATIONS

The soil borings typically encountered poorly graded sand and silt with caliche interbeds. Levels of organic vapors indicated by PID readings in soil samples from locations MW-4, MW-5, and MW-6 range from 9 to 1430 ppm (Table 1) and from 0.7 to 3.4 ppm in MW-7, MW-8, and MW-9.

Groundwater was encountered at approximately 60 feet bgs. Figure 2 is a water table potentiometric map showing the location of monitor wells and other site features. Figure 2 indicates that the groundwater flow direction is south-southeast with a gradient of 0.0059 foot per foot.

Analytical data (Tables 2 and 3) indicate that barium, chromium, benzene, toluene, and total xylenes either currently, or have in the past, exceeded NMGQS. Figures 3, 4, and 5 are groundwater isopleth maps of most recent groundwater quality data for benzene, barium, and chromium, respectively. The distribution of toluene and total xylenes closely mimic the distribution of benzene.

Examination of inorganic constituents in Table 2 allows several generalizations concerning constituent distribution. Chloride is an indicator of impact to groundwater. Background chloride concentrations are in the range of 20 to 40 milligrams per liter (mg/L) and plume concentrations are in the range of 200 to 400 mg/L. Nitrate is an indicator of biodegradation. Nitrate is used as an electron acceptor by microorganisms feeding on the organic constituents, consuming both nitrate and organic constituents in the process. Background nitrate concentrations are in the 2 to 3 mg/L range while nitrate is mostly gone in the plume area as defined by chloride (Figure 6). Alkalinity is also an indicator of biodegradation. Background alkalinity concentrations range from 100 to 300 mg/L while plume concentrations are in the 500 to 700 mg/L range. The reason that alkalinity is higher in the plume is that organic constituents degrade to CO_2 and at pH conditions present in Apex groundwater, CO_2 is mostly present as HCO_3^- (bicarbonate alkalinity).

Sulfate is also an indicator of biodegradation. Sulfate is used as an electron acceptor after microorganisms have exhausted the nitrate supply. Background sulfate concentrations are in the 50 to 90 mg/L range but are mostly gone in the main plume area. Note that unstable oxidation-reduction potentials at the leading edge of the plume cause sulfate mineral dissolution and sulfate concentrations rise to 200 to 300 mg/L.

Barium concentrations in Apex groundwater are largely controlled by the presence or absence of sulfate in the system and its effect on the stability of the barium sulfate mineral barite. Removal of sulfate by biodegradation causes barite dissolution and barium concentrations in solution rise to 2.5 to 4.5 mg/L (Figure 4). If there is a small amount of sulfate in solution, barium is removed from solution by precipitation of barite. Because barium is a minor or trace element in Apex groundwater, as in most groundwater, and sulfate is a major element, it is likely that there will always be enough sulfate in areas surrounding the plume to prevent migration of barium.

The distribution of chromium is reversed, with highest concentrations observed in the far downgradient, unimpacted monitor well MW-8 and the lowest concentrations (non-detect) observed in highly impacted monitor well MW-3. This configuration is likely due to redox conditions. Reduced conditions promoted by biodegradation of hydrocarbons near the source favor the removal of chromium from groundwater by adsorption and precipitation. The current

highest observed chromium concentration of 0.04 mg/L in MW-8 is below the NMGQS of 0.05 mg/L. Previous concentrations of 0.11 mg/L chromium in monitor wells MW-6 and MW-7 may be data anomalies or they may be due to unstable redox conditions at the leading edge of the plume. If they are due to unstable redox conditions, these conditions have evidently begun to stabilize.

The source of hydrocarbon constituents in groundwater remains uncertain. Initial investigations found no impact to soil near the condensate storage tanks (Figure 1); however, the presence of BTEX components in groundwater suggests that condensate may be responsible. Soil investigations did find moderate amounts of organic vapors in soils near the water storage tank (Figure 1) and unconfirmed reports suggest that there may have been an unlined pond for produced water in that same area in the years prior to Conoco's purchase of Apex Compressor Station. Chloride concentration in groundwater (Figure 6) are generally coincident with benzene concentrations, lending credence to the idea that produced water may have played a part in BTEX sources.

CONCLUSIONS

- Site soils show moderate levels of organic vapors at locations MW-4, MW-5, and MW-6.
- Groundwater contains concentrations of barium, benzene, toluene, and total xylenes that are above NMGQS. Chromium concentrations are not currently above NMGQS.
- The horizontal extent of site-related groundwater concentrations has been defined.

RECOMMENDATIONS

An opportunity exists to use calcium nitrate amendment technology for groundwater remediation at the Conoco Apex Compressor Station near Hobbs, New Mexico. This innovative technology has the potential to be more effective and faster than mainstream technology. What follows is a bulleted summary of key constraints at the site, implications for remediation, and remediation options at Apex. Next is a discussion of the theory of calcium nitrate technology and a discussion of a specific application to the Apex site.

Key Constraints

- Caliche layers at 25 to 28 feet, 48 to 50 feet, and 62 to 65 feet.
- Water first encountered below caliche at 62 to 65 feet. Groundwater potentiometric surface at 60 feet.
- Highest groundwater BTEX concentrations on the order of 16 ppm.
- Area of the plume with benzene greater than 10 ppb = 80,000 sq. feet.
- No use of groundwater in the vicinity.

- Hydrocarbon source is uncertain (condensate tank? produced water pond?) but not active.
- Original investigation found little hydrocarbon in soil.
- Subsequent investigations found moderate levels of organic constituents in soils at upgradient locations. Organic constituents were not detected in groundwater at these locations.

Implications

- Caliche layers may be aquitards/aquicludes and also may complicate movement of hydrocarbons to groundwater thereby complicating remediation.
- Vadose zone source may not be characterized, so there is a possibility that organic material could bleed into groundwater for an unknown amount of time causing continued contaminant release and remediation efforts to fail.
- Due to complicating effect of caliche layers, it may be difficult or impossible to completely characterize the vadose zone.
- Vadose zone source remediation is difficult or impossible by traditional dig and haul due to caliche layers and depths of up to 60 feet.
- Pump and treat technology for groundwater requires a long timeframe.
- SVE/Air Sparge may be problematic due to caliche layers.

Remediation Options

- Monitored natural attenuation
 - ♦ Risk assessment
 - ♦ Long term (15 to 20 years)
 - ♦ Analytical/labor costs high
- In-situ bioremediation
 - ♦ Regenis™ magnesium peroxide socks
 - Won't work for vadose zone
 - Remediation 2 to 3 years
 - Seven to twelve 4- to 6-inch-diameter wells
 - ♦ Calcium nitrate bioremediation
 - Remediation in 1 to 2 years
 - Might work for vadose zone
 - Seven to twelve 2-inch-diameter wells
 - Use Regenis™ HRC barrier to ensure nitrate does not migrate

Calcium Nitrate Amendment Technology

Bioremediation occurs naturally in groundwater with access to oxygen. However, organic contaminants in deeper groundwater will quickly use up all the available oxygen and the system will become anaerobic (oxygen depleted) causing bioremediation to slow down or stop. While oxygen is the electron acceptor with the most powerful affinity for electrons in the oxidation of organic material, nitrate is also an electron acceptor. Nitrate's affinity for electrons is only slightly less than that of oxygen, and it serves as a substitute for oxygen in the bioremediation process. The advantage of nitrate is that, unlike oxygen, it has a high solubility in water, making it possible to get large concentrations of electron acceptors in contact with deeper organic material.

The high solubility of nitrate and its low cost make it an attractive alternative to oxygen-based bioremediation techniques. Regenix, a company that sells chemicals for an oxygen-based bioremediation method, sells its amendment for \$20 per pound. A&K Petro-Chem Ind. Ltd., a company that sells hydroponic nutrients/trace elements for commercial produce growers, advertises calcium nitrate ($\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$) for \$1.04 per pound. The solubility of calcium nitrate is more than 8 pounds per gallon of cold water. This is equivalent to approximately 2,100 mg/L nitrate in solution. This compares to approximately 7 mg/L of oxygen that is soluble in the same water. This comparison shows that using nitrate can be cheaper and more effective than oxygen amendments in the treatment of organic contamination.

The primary reason that nitrate is not routinely used to remediate organic contamination, even though the nitrate is used up in the remediation process, is that nitrate is itself an EPA listed contaminant. Regulators have been reluctant to approve a remediation process that involves the introduction of an additional contaminant. This is understandable, given that organic contamination sites are generally in populated areas and involve the possibility of direct pathways to an exposed population. Regulators have been reluctant to take the risk reasoning that if the remediation technique fails, they will have introduced another contaminant to groundwater, increasing potential exposure and making ultimate clean up more difficult.

Circumstances of most Conoco sites in southeast New Mexico are very different from circumstances that most regulators face. Using the Apex Compressor Station as an example, the site is located several miles from any residence and there are no known groundwater users in the area. Since there are no immediate receptors, the primary risk driver is the possibility that the area could become more populated at some future time. Given that the Apex Compressor Station is located in an area that has historically been given over to oilfield/industrial uses, future population expansion seems unlikely.

Special circumstances at sites like Apex have made regulators (i.e., OCD) more willing to consider innovative approaches to remediation. The OCD Guidelines for Remediation of Leaks, Spills and Releases (OCD, 1993) states: "*The OCD encourages other methods of groundwater*

remediation including, but not limited to, air sparging and bioremediation. Use of alternate methods must be approved by OCD prior to implementation."

Due to these special circumstances, it appears that there is an opportunity to use nitrate in a groundwater remediation strategy at Apex. The OCD recently approved the use of an innovative use of nitrate in soil remediation at the Conoco Cedar Lake site, less than 30 miles east of Apex, demonstrating considerable flexibility in their approach to remediation solutions.

Application to Apex Groundwater

The highly soluble nature of calcium nitrate allows preparation of solutions that can be directly injected into wells at the site. Two-inch wells can be effectively used for injection, in contrast to four- or six-inch wells required by Regenix socks (in order to bring treatment times down to a 2- to 3-year time frame). If more treatment is required, the same wells can be used. This method also avoids the labor intensive stringing and changing out of treatment socks.

We know that the addition of a nitrate source has the potential to be successful at Apex because there are indications that necessary bacteria are already present in Apex groundwater. Ambient nitrate concentrations in unaffected groundwater at Apex are on the order of 3 mg/L. However, nitrate concentrations in affected groundwater are reported as non-detect. This indicates consumption of both nitrate and organic constituents by microbial activity.

Maxim proposes the installation of 8 two-inch injection wells in the highest concentrations of the plume (Figure 7). Injection of 4 to 10 gallons of calcium nitrate solution in each well, depending on location within the plume, should attain the goal of bringing groundwater concentrations of BTEX below regulatory limits. Existing monitor wells would be used to monitor progress of the remediation and target areas of the plume for repeat applications if necessary.

In order to address concerns that excess nitrate (nitrate that is not consumed in reactions with organic constituents) may pose a hazard to future groundwater users, Maxim proposes to install 4 two-inch wells at the downgradient edge of the plume (Figure 7) and inject them with Regenix Hydrogen Release Compound[®] (HRC). HRC is a sticky gel that will bleed off lactic acid (food-grade carbon source) over time, forming a reactive barrier to excess nitrate, effectively isolating the treatment area from other groundwater and limiting further downgradient migration of nitrate.

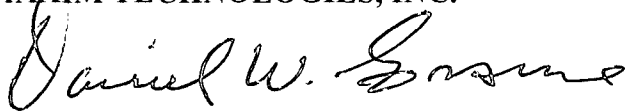
We anticipate that the time to bring BTEX concentrations down to regulatory standards will be less than two years. If it takes longer, it may indicate that there is a continuing organic source in the vadose zone. If this is true, it may be possible to apply calcium nitrate to the vadose zone. Amendment solutions would likely follow the same pathways to groundwater that the original release did, if injected into the subsurface in the area of the original release. In addition to direct soil remediation, this could have the effect of driving any saturated organic to the water table where it could be remediated.

Mr. Wayne Price
New Mexico Oil Conservation Division
May 1, 2002
Page 9 of 9

We are prepared to initiate these actions as soon as we receive your approval to proceed. If you have any questions or comments regarding this report, please do not hesitate to contact Dan Erskine (Maxim) at 505-237-8440 or Neal Goates (Conoco) at 281-293-3822. We would appreciate your review and approval of the plan we have presented at your earliest convenience.

Sincerely,

MAXIM TECHNOLOGIES, INC.

A handwritten signature in cursive script, reading "Daniel W. Erskine".

Daniel W. Erskine, Ph.D.
Senior Geochemist

Attachments

Cc: Neil Goates, Conoco Remediation Technology/Houston, Texas
Mark Bishop, Conoco NG&GP/Maljamar, New Mexico
Paul R. Sheeley, OCD/Hobbs, New Mexico

TABLES

**Table 1. PID Readings from Soil Boring Samples from
Phase II Groundwater Investigation, August 27 - November 12, 2001
Apex Compressor Station, west of Hobbs, New Mexico**

Interval Below Ground Surface (feet)	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9
0-5	NS	122	1171	1.5	1.2	1.1
5-10	1430	40	23	2.1	1.1	1.5
10-15	115	70	462	3.2	2.2	1.1
15-20	78	11	151	1.9	2.1	0.9
20-25	88	9	193	1.9	1.2	1.5
25-30	98	276	441	1.8	1.8	1.2
30-35	98	NS	184	1.7	0.7	1.2
35-40	309	370	265	2.8	3.1	1.5
40-45	123	586	121	1.6	3.4	1.1
45-50	165	1340	114	3.1	1.3	0.9
50-55	213	84	189	2.3	2.5	0.8
55-60	171	82	219	2.4	1.1	1.1
60-65	248	NS	312	1.0	1.3	1.3
65-70	166	NS	259	2.4	1.2	1.5

Concentrations reported in parts per million (ppm)

NS = Not Sampled.

Table 2. Results of Laboratory Analysis of Groundwater Samples by EPA Method 8260
Apex Compressor Station, west of Hobbs, New Mexico

Constituent	MW-1	MW-1 (Dup)	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	NM GW Standards
Benzene	4000	4100	ND	3500	ND	ND	33	380	ND	ND	10
n-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	700	600	ND	520	ND	ND	ND	23	ND	ND	750
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
p-isopropyltoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	6100	6800	ND	7300	ND	ND	ND	66	ND	ND	750
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	4800	4300	ND	3500	ND	ND	140	210	ND	ND	620
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

All concentrations reported in parts per billion (ppb)
ND = Not Detected

Table 3. Results of Laboratory Analysis of Groundwater Samples for
General Chemistry, Total Dissolved Solids and RCRA Metals
Apex Compressor Station, west of Hobbs, New Mexico

	MW-1	MW-1 (Dup)	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	NM GW Standards
Arsenic	0.067	0.067	ND	0.075	0.012	ND	ND	0.026	0.026	0.017	0.1
Barium	2.5	2.5	0.21	4.5	0.2	ND	ND	0.24	0.8	0.32	1.0
Calcium	276	296	178	193	262	389	271	357	642	449	
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01
Chromium	0.0054	0.0057	0.007	ND	0.01	0.014	ND	0.013	0.04	0.022	0.05
Magnesium	86.3	86	16.4	77.6	14.7	20.5	29.2	55.5	42.7	20.5	
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	0.0059	ND	0.05
Sodium	200	203	38.7	192	36.8	66.6	107	232	38.8	37	
Lead	ND	ND	ND	ND	ND	ND	ND	ND	0.0058	0.0066	0.05
TDS	1430	1400	542	1120	486	597	1150	1530	440	400	
Chloride	448	451	23.8	209	20.2	43.3	170	249	31.4	24.6	
Sulfate	1.5	1.6	49.7	ND	66.7	85.4	178	340	87.4	70.2	
Nitrate	ND	ND	2.4	ND	2.1	2.2	1.6	ND	2.9	2.6	
Total Alkalinity	577	575	310	729	262	285	486	511	161	161	

All concentrations reported in parts per million (ppm)

ND = Not Detected

Duplicate sample for MW-1 listed as MW-8 in Laboratory Report (Attachment 1 of this report)

FIGURES



MW-5

Current Monitor Well Location

MW-8

Figure1. Monitor Well Locations

CONOCO Apex Compressor Station,
West of Hobbs, New Mexico

Project No. 2007219

Drawing By: DWE Date: 03/02/01

File Name: Well Locations.dsf

Checked By: DWE Date: 03/02/01

MAXIM
TECHNOLOGIES INC®

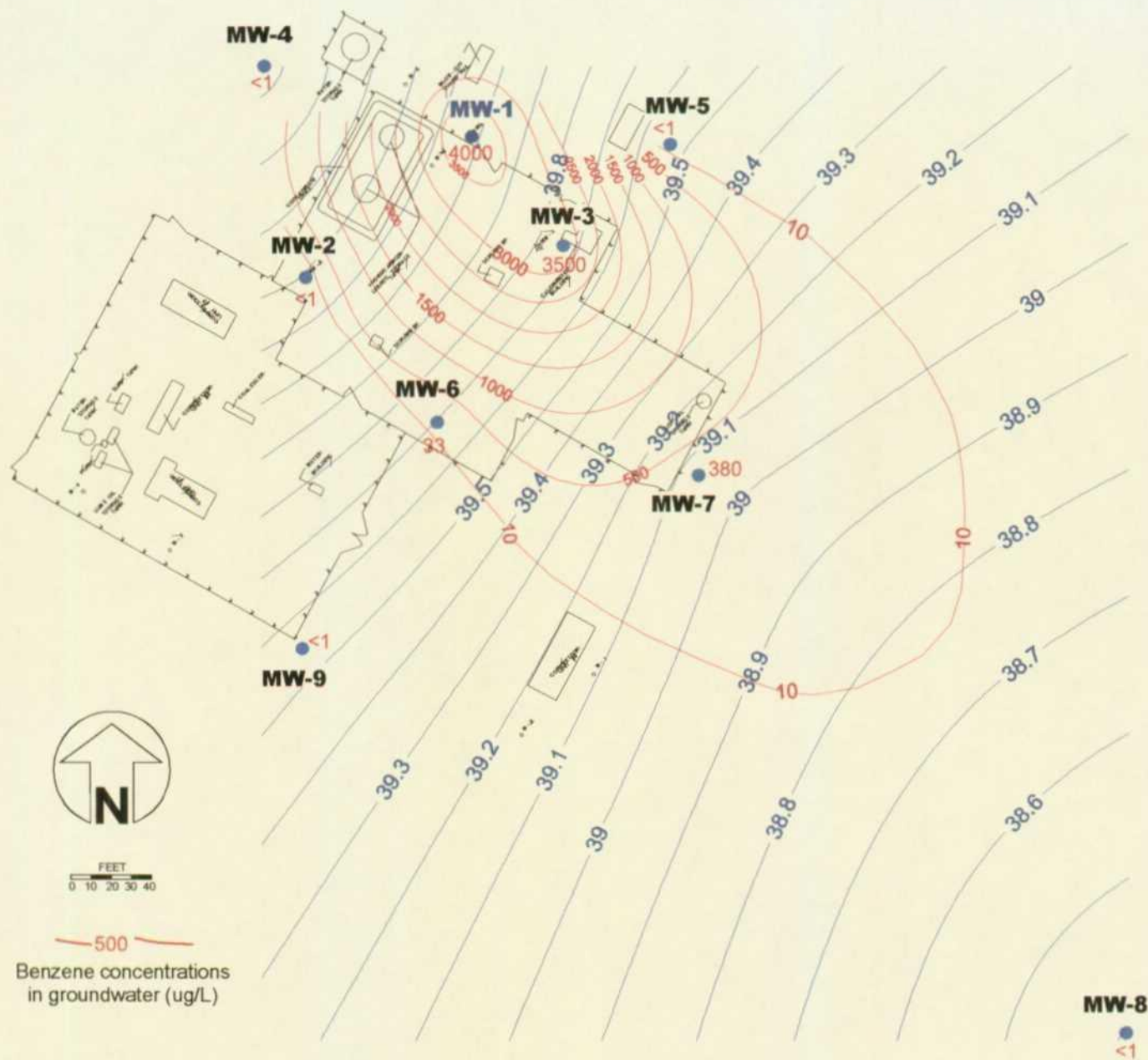


Figure 3. Benzene Isopleths

CONOCO Apex Compressor Station,
West of Hobbs, New Mexico

Project No. 2007219

Drawing By: DWE Date: 03/02/01

File Name: benzene isopleths.dsf

Checked By: DWE Date: 03/02/01

MAXIM
TECHNOLOGIES INC®

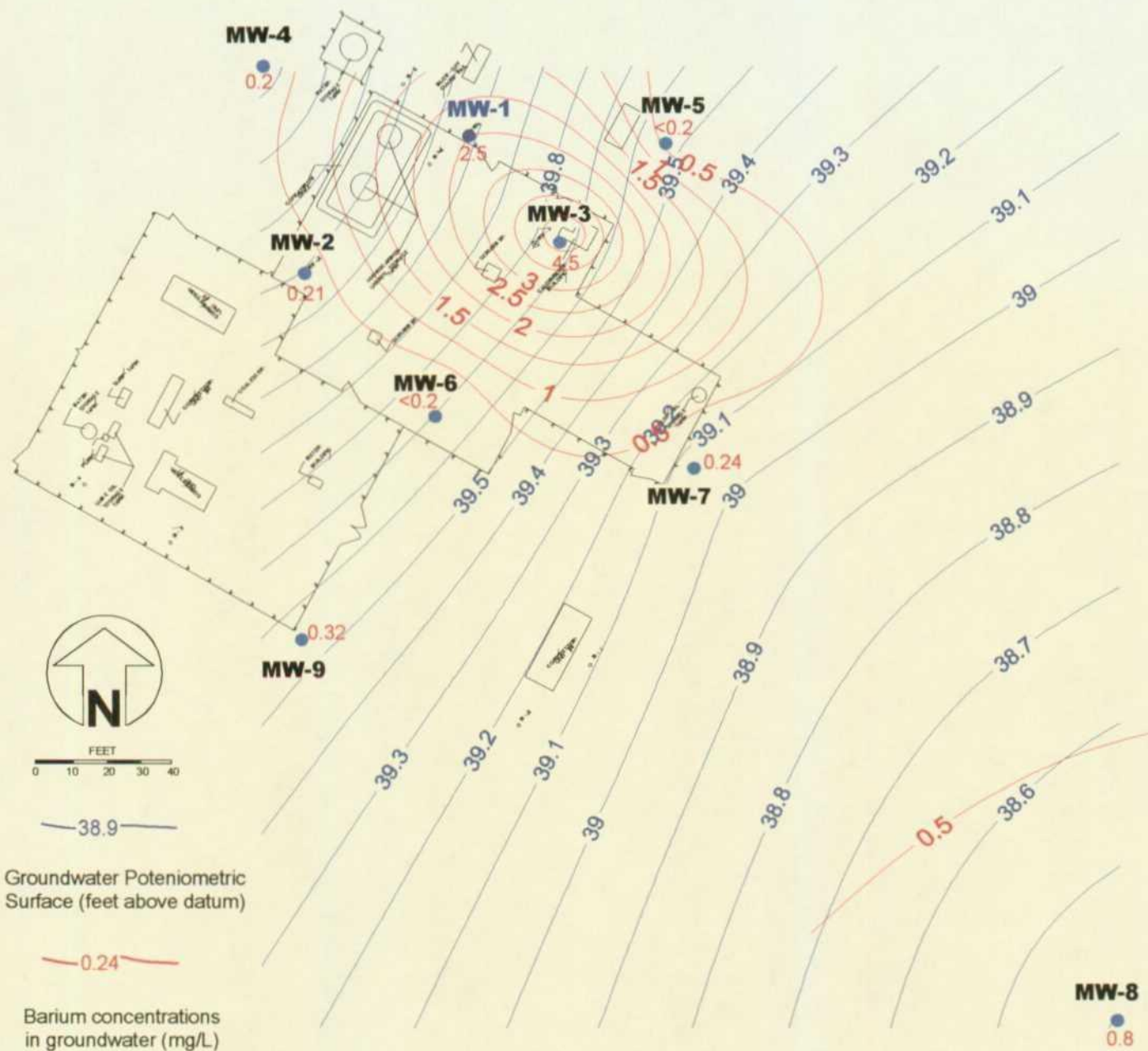


Figure 4. Barium Isopleths

CONOCO Apex Compressor Station,
West of Hobbs, New Mexico

Project No. 2007219

Drawing By: DWE Date: 03/02/01

File Name: Barium.dsf

Checked By: DWE Date: 03/02/01

MAXIM
TECHNOLOGIES INC®

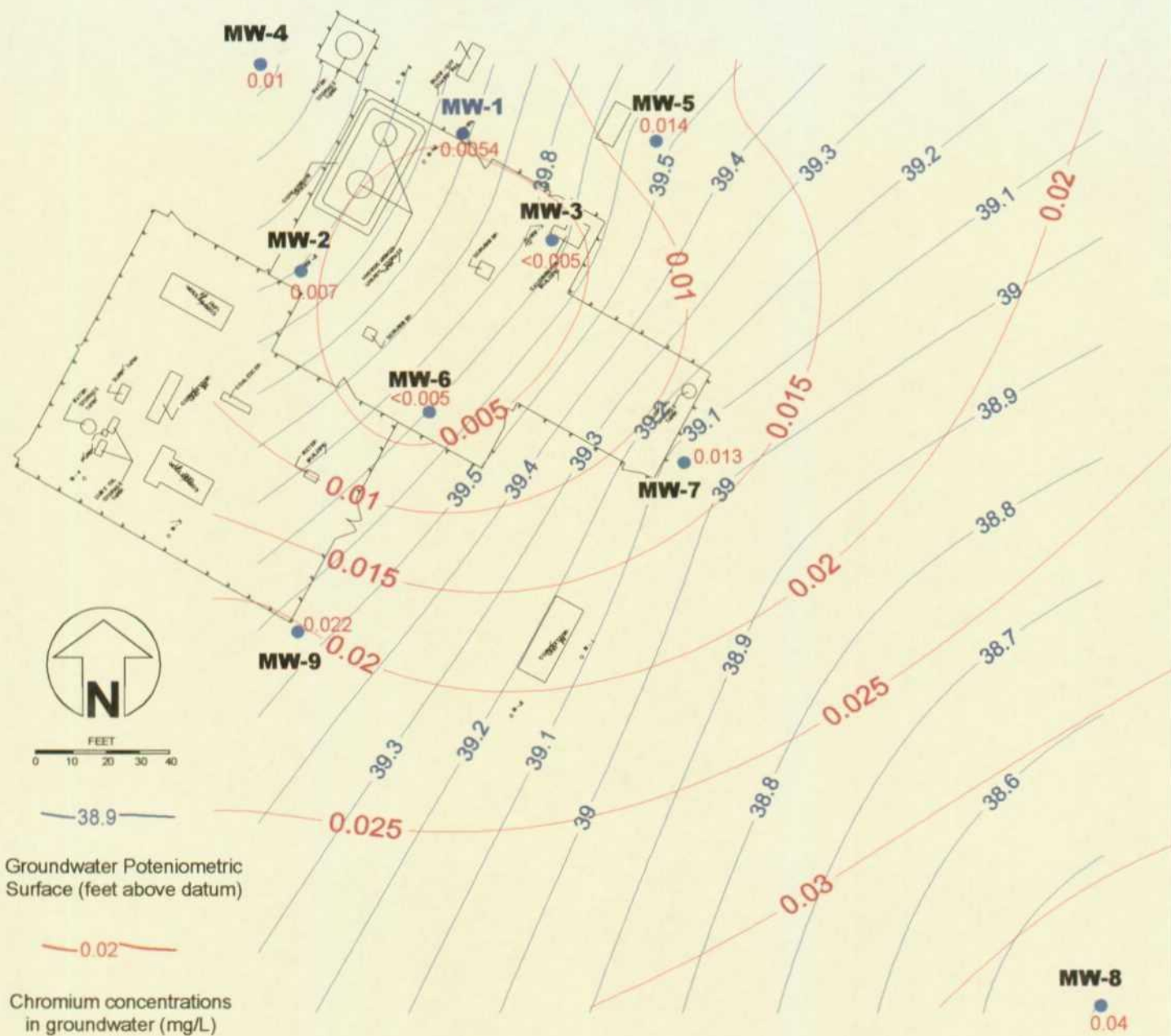


Figure 5. Chromium Isopleths

CONOCO Apex Compressor Station,
West of Hobbs, New Mexico

Project No. 2007219

Drawing By: DWE Date: 03/02/01

File Name: Chromium.dsf

Checked By: DWE Date: 03/02/01

MAXIM
TECHNOLOGIES INC®

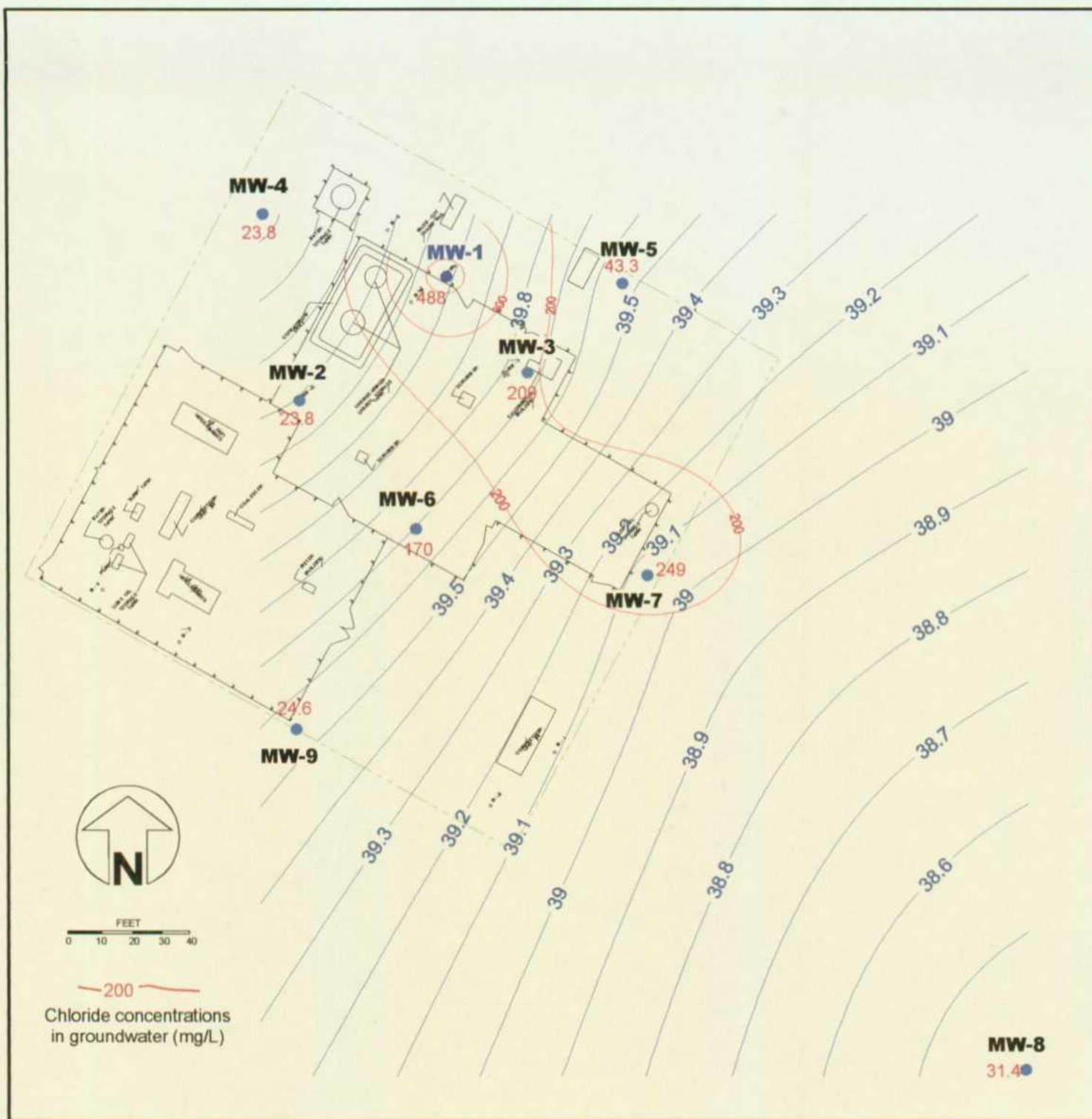


Figure 6. Chloride Isopleths

CONOCO Apex Compressor Station,
West of Hobbs, New Mexico

MAXIM
TECHNOLOGIES INC[®]

Project No. 2007219

Drawing By: DWE Date: 03/02/01

File Name: Chloride.dsf

Checked By: DWE Date: 03/02/01

ATTACHMENT 1

Soil Boring Logs

PROJECT NAME: <u>APEX Compressor Station</u>	MONITORING WELL NO. <u>MW1-B7</u>
LEGAL LOCATION: _____	LOCATION <u>Apex Compressor Station</u> <u>Hobbs, Lea County, New Mexico</u>
DRILL TYPE: <u>Air Rotary</u>	ELEVATION: TOP OF HOLE: _____
DRILLED BY: <u>HARRISON & COOPER, INC.</u>	DEPTH GROUNDWATER ENCOUNTERED: <u>59.8</u> (ft)
LOGGED BY: <u>Anne Stewart</u>	BORE HOLE DIAMETER: <u>4 3/4</u> (in)
REMARKS: <u>ND=Non Detect</u>	DATE: HOLE STARTED: <u>1/23/01</u>
<u>bgs=below ground surface</u>	COMPLETED: <u>1/23/01</u>
<u>NS=No Sample</u>	

DEPTH (ft)	SAMPLE ID	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	BLOW COUNT	SAMPLE TO LAB	TIME	% RECOVERY	FID RESULT (ppm)
------------	-----------	--------------------------------	-------------	------------	---------------	------	------------	------------------

0.0	1	Poorly graded SAND with gravel, gray to white	SP		Y			70+
-5.0	2	Poorly graded SAND with gravel, light tan	SP		Y			16.8
-10.0		Poorly graded SAND with gravel, tan, slightly damp	SP					9.8
-15.0		Poorly graded SAND with gravel, tan, slightly damp	SP					7.0
-20.0		Poorly graded SAND with gravel, reddish tan, dry	SP					1.8
-25.0		Poorly graded SAND with gravel, reddish tan, dry, cobbles encountered in drilling	SP					10.3
-30.0		Poorly graded SAND, tan, dry	SP					8.7
-35.0		Poorly graded SAND, tan, dry	SP					12.4
-40.0		Poorly graded SAND, tan, dry	SP					5.0
-45.0		Poorly graded SAND, tan, slightly damp	SP					2.5
-50.0		Poorly graded SAND, tan, dry	SP					6.5
-55.0		Poorly graded SAND, tan, slightly damp	SP					8.8

71.0

Split Spoon Sample (ASTM D1586)

PROJECT NAME: <u>APEX Compressor Station</u>	MONITORING WELL NO. <u>MW1-B7</u>
LEGAL LOCATION: _____	LOCATION <u>Apex Compressor Station</u> <u>Hobbs, Lea County, New Mexico</u>
DRILL TYPE: <u>Air Rotary</u>	ELEVATION: TOP OF HOLE: _____
DRILLED BY: <u>HARRISON & COOPER, INC.</u>	DEPTH GROUNDWATER ENCOUNTERED: <u>59.8</u> (ft)
LOGGED BY: <u>Anne Stewart</u>	BORE HOLE DIAMETER: <u>4 3/4</u> (in)
REMARKS: <u>ND=Non Detect</u>	DATE: HOLE STARTED: <u>1/23/01</u>
<u>bgs=below ground surface</u>	COMPLETED: <u>1/23/01</u>
<u>NS=No Sample</u>	

DEPTH (ft)	SAMPLE ID	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	BLOW COUNT	SAMPLE TO LAB	TIME	% RECOVERY	FID RESULT (ppm)
------------	-----------	--------------------------------	-------------	------------	---------------	------	------------	------------------

-60.0		Poorly graded SAND, tan, slightly damp	SP					3.8
-65.0		Poorly graded SAND grading to GRAVEL at 68 ft, tan, dry	SP GW					37.1
-70.0		Poorly graded SAND, no sample recovery						

71.0

Split Spoon Sample (ASTM D1586)

PROJECT NAME: <u>APEX Compressor Station</u>	MONITORING WELL NO. <u>MW2-B8</u>
LEGAL LOCATION: _____	LOCATION <u>Apex Compressor Station</u> <u>Hobbs, Lea County, New Mexico</u>
DRILL TYPE: <u>Air Rotary</u>	ELEVATION: TOP OF HOLE: _____
DRILLED BY: <u>HARRISON & COOPER, INC.</u>	DEPTH GROUNDWATER ENCOUNTERED: <u>59.7</u> (ft)
LOGGED BY: <u>Anne Stewart</u>	BORE HOLE DIAMETER: <u>4 3/4</u> (in)
REMARKS: <u>ND=Non Detect</u>	DATE: HOLE STARTED: <u>1/23/01</u>
<u>bgs=below ground surface</u>	COMPLETED: <u>1/23/01</u>
<u>NS=No Sample</u>	

DEPTH (ft)	SAMPLE ID	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	BLOW COUNT	SAMPLE TO LAB	TIME	% RECOVERY	FID RESULT (ppm)
------------	-----------	--------------------------------	-------------	------------	---------------	------	------------	------------------

0.0	1	Gravel Surfacing						
-5.0		Silty SAND with gravel, light tan, dry	SP		Y			103.0
-10.0		Poorly graded SAND with caliche, white to tan	SP					68.8
-15.0	2	Poorly graded SAND, tan, dry	SP		Y			30.3
-20.0		Poorly graded SAND, reddish tan, damp	SP					131.1
-25.0		Poorly graded SAND with gravel, reddish tan, slightly damp	SP					43.2
-30.0		Poorly graded SAND, tan, dry	SP					1.3
-35.0		Poorly graded SAND, tan, dry	SP					67.9
-40.0		Poorly graded SAND, tan, dry	SP					35.8
-45.0		Poorly graded SAND, tan, dry	SP					14.5
-50.0		Poorly graded SAND, tan, dry	SP					13.4
-55.0		Poorly graded SAND, tan, damp	SP					15.6
-60.0		Poorly graded SAND, tan, damp	SP					37.0

71.0

Split Spoon Sample (ASTM D1586)

PROJECT NAME: <u>APEX Compressor Station</u>	MONITORING WELL NO <u>MW2-B8</u>
LEGAL LOCATION: _____	LOCATION <u>Apex Compressor Station</u> <u>Hobbs, Lea County, New Mexico</u>
DRILL TYPE: <u>Air Rotary</u>	ELEVATION: TOP OF HOLE: _____
DRILLED BY: <u>HARRISON & COOPER, INC.</u>	DEPTH GROUNDWATER ENCOUNTERED: <u>59.7</u> (ft)
LOGGED BY: <u>Anne Stewart</u>	BORE HOLE DIAMETER: <u>4 3/4</u> (in)
REMARKS: <u>ND=Non Detect</u>	DATE: HOLE STARTED: <u>1/23/01</u>
<u>bgs=below ground surface</u>	COMPLETED: <u>1/23/01</u>
<u>NS=No Sample</u>	

DEPTH (ft)	SAMPLE ID	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	BLOW COUNT	SAMPLE TO LAB	TIME	% RECOVERY	FID RESULT (ppm)
------------	-----------	--------------------------------	-------------	------------	---------------	------	------------	------------------

-60.0 -65.0 -70.0	3		Poorly graded SAND, tan, damp to wet	SP		Y		79.1
			Poorly graded SAND, tan, damp to wet	SP				36.3

71.0

Split Spoon Sample (ASTM D1586)

PROJECT NAME: <u>APEX Compressor Station</u>	MONITORING WELL NO. <u>MW3-B9</u>
LEGAL LOCATION: _____	LOCATION <u>Apex Compressor Station</u> <u>Hobbs, Lea County, New Mexico</u>
DRILL TYPE: <u>Air Rotary</u>	ELEVATION: TOP OF HOLE: _____
DRILLED BY: <u>HARRISON & COOPER, INC.</u>	DEPTH GROUNDWATER ENCOUNTERED: <u>59.8</u> (ft)
LOGGED BY: <u>Anne Stewart</u>	BORE HOLE DIAMETER: <u>4 3/4</u> (in)
REMARKS: <u>ND=Non Detect</u>	DATE: HOLE STARTED: <u>1/23/01</u>
<u>bgs=below ground surface</u>	COMPLETED: <u>1/23/01</u>
<u>NS=No Sample</u>	

DEPTH (ft)	SAMPLE ID	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	BLOW COUNT	SAMPLE TO LAB	TIME	% RECOVERY	FID RESULT (ppm)
------------	-----------	--------------------------------	-------------	------------	---------------	------	------------	------------------

0.0		GRAVEL surfacing						
-5.0		No Recovery	SP					NS
-10.0		Poorly graded SAND with gravel, tan, dry	SP					12.0
-15.0	1	Poorly graded SAND with gravel, tan, dry	SP		Y			23.8
-20.0		Poorly graded SAND, reddish tan, slightly damp	SP					6.4
-25.0		Poorly graded SAND, reddish tan, slightly damp	SP					10.9
-30.0	2	Poorly graded SAND with gravel, reddish tan, dry	SP		Y			19.1
-35.0		Poorly graded SAND, light tan, dry	SP					9.6
-40.0		Poorly graded SAND, light tan, slightly damp	SP					3.6
-45.0		Poorly graded SAND with gravel, light tan, dry	SP					9.9
-50.0		Poorly graded SAND, light reddish tan, dry	SP					14.8
-55.0	3	Poorly graded SAND with gravel, light reddish tan, dry	SP		Y			22.3
-60.0		Poorly graded SAND with gravel, light reddish tan, dry	SP					5.6

70.5

Split Spoon Sample (ASTM D1586)

PROJECT NAME: <u>APEX Compressor Station</u>	MONITORING WELL NO. <u>MW3-B9</u>
LEGAL LOCATION: _____	LOCATION <u>Apex Compressor Station</u> <u>Hobbs, Lea County, New Mexico</u>
DRILL TYPE: <u>Air Rotary</u>	ELEVATION: TOP OF HOLE: _____
DRILLED BY: <u>HARRISON & COOPER, INC.</u>	DEPTH GROUNDWATER ENCOUNTERED: <u>59.8</u> (ft)
LOGGED BY: <u>Anne Stewart</u>	BORE HOLE DIAMETER: <u>4 3/4</u> (in)
REMARKS: <u>ND=Non Detect</u>	DATE: HOLE STARTED: <u>1/23/01</u>
<u>bgs=below ground surface</u>	COMPLETED: <u>1/23/01</u>
<u>NS=No Sample</u>	

DEPTH (ft)	SAMPLE ID	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	BLOW COUNT	SAMPLE TO LAB	TIME	% RECOVERY	FID RESULT (ppm)
------------	-----------	--------------------------------	-------------	------------	---------------	------	------------	------------------

-60.0 -65.0 -70.0		Poorly graded SAND, grayish tan, dry Poorly graded SAND, grayish tan, dry	SP SP					8.2 9.5
-------------------------	--	--	--------------	--	--	--	--	----------------

70.5

Split Spoon Sample (ASTM D1586)

SOIL BORING LOG

BORING/WELL #: <u>MW-4</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Apex Compressor Station, Hobbs, NM</u>	WATER LEVEL: INITIAL: _____
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN:DIA: <u>2"(in)</u> LENGTH: (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING:DIA: <u>2"(in)</u> LENGTH: (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	SILTY SAND (SM), dark brown, fine-grained, dry, caliche stringers	0.0' to 5.0'	0.0' to 5.0'					
5	SILT WITH SAND (ML), tan, fine-grained, dry	5.0' to 10.0'	5.0' to 10.0'		1430			5
10	SILTY SAND (SM), tan, fine-grained, dry	10.0' to 15.0'	10.0' to 15.0'		115			10
15	SILT WITH SAND (ML), tan, fine-grained, dry	15.0' to 20.0'	15.0' to 20.0'		78			15
20	SILTY SAND (SM), tan, fine-grained, dry, caliche stringers	20.0' to 30.0'	20.0' to 25.0'		88			20
25			25.0' to 30.0'		98			25
30								

55' of 2" DIA PVC Casing

BORING/WELL #: MW-4
 PROJECT NO.: 2007219
 LOCATION: Hobbs, Lea County, NM
 TOTAL DEPTH: 70.0'
 SURFACE ELEVATION: _____ (ft)
 SCREEN: DIA: 2" (in) LENGTH: _____ (ft) SIZE: 2"
 CASING: DIA: 2" (in) LENGTH: _____ (ft) TYPE: SCH 40
 DRILLING METHOD(S): Air Rotary

 CLIENT: Conoco, Inc.
 PROJECT: Apex Compressor Station
 WATER LEVEL: INITIAL: ELEV: _____
 BORE HOLE DIAMETER: 5" Air Rotary
 DRILLING COMPANY: Scarborough Drilling
 DATE DRILLED: 8/28/01
 DRILLER: Scott Scarborough
 OVERSIGHT: Daniel W. Erskine

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
30	SILTY SAND (SM): tan, fine-grained, dry, caliche stringers							
		30.0' to 42.0'	30.0' to 35.0'		98			
35								35
			35.0' to 40.0'		309			
40								40
	CALICHE	42.0' to 43.0'	40.0' to 45.0'		123			
	SILTY SAND (SM): tan, fine-grained, dry, caliche stringers							
45								45
		43.0' to 55.0'	45.0' to 50.0'		165			
50								50
			50.0' to 55.0'		213			
55								55
	SILTY SAND (SM): tan, fine to medium-grained, moist	55.0' to 60.0'						
			55.0' to 60.0'		171			
60								60
	GWL -59.1' BGS							

55' of 2" DIA PVC Casing

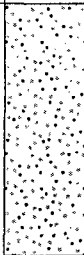
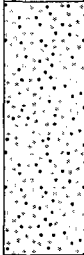
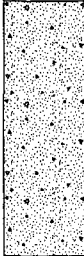
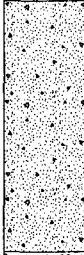
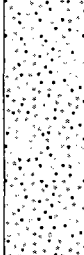
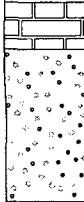
Quartz Sand Filter Pack

15' Slotted Well Screen

Quartz Sand Filter Pack

SOIL BORING LOG (Page 1 of 3)

BORING/WELL #: <u>MW-5</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u> (ft)
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/28/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	SILTY SAND (SM): gray, fine-grained, dry, caliche stringers	0.0' to 5.0'	0.0' to 5.0'		122		57" of 2" DIA PVC Casing	
5	SILTY SAND (SM): tan, fine-grained, dry	5.0' to 10.0'	5.0' to 10.0'		40			5
10	SILT WITH SAND (ML): tan, fine-grained sand, dry	10.0' to 15.0'	10.0' to 15.0'		70			10
15	SILT WITH SAND (ML): tan, fine-grained sand, moist	15.0' to 20.0'	15.0' to 20.0'		11			15
20	SILTY SAND (SM): tan, fine-grained, caliche stringers, moist	20.0' to 26.0'	20.0' to 25.0'		9			20
25	CALICHE	26.0' to 27.0'						
	SAND (SP): tan, fine-grained, dry, carbonate cement, hard	27.0' to 30.0'	25.0' to 30.0'		276			25
30								30

SOIL BORING LOG (Page 3 of 3)

BORING/WELL #: <u>MW-5</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/28/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
60	SILTY SAND (SM): tan, fine to medium-grained, moist	60.0' to 62.0'						
	CALICHE	62.0' to 63.0'	60.0' to 65.0'					
	SILTY SAND (SM): tan, fine to medium-grained, moist	63.0' to 67.0'						
65								65
	CALICHE	67.0' to 68.0'	65.0' to 70.0'					
	SILTY SAND (SM): tan, fine to medium-grained, moist	68.0' to 70.0'						
70								70
	TD 70'							
75								75
80								80
85								85
90								90

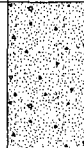
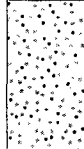
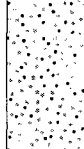
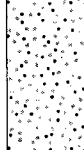
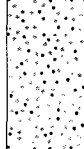
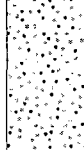
BORING/WELL #: <u>MW-6</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u> (ft)
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	WELL GRADED SAND WITH GRAVEL (SW): dark brown, fill, moist							
		0.0' to 5.0'	0.0' to 5.0'		1171			
5	SANDY CLAY (CL): red-brown, minor gravel, moist							5
		5.0' to 10.0'	5.0' to 10.0'		23			
10	CLAYEY SAND (SC): red-brown, fine-grained, moist							10
		10.0' to 15.0'	10.0' to 15.0'		462			
15	SILT WITH SAND (ML): tan, fine-grained sand, moist							15
		15.0' to 20.0'	15.0' to 20.0'		151			
20	SILT WITH SAND (ML): tan, fine-grained sand, dry							20
		20.0' to 30.0'	20.0' to 25.0'		193			
25			25.0' to 30.0'		441			25
30								

57' of 2" DIA PVC Casing

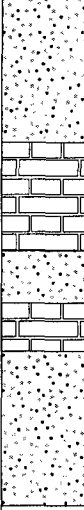
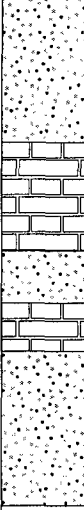
SOIL BORING LOG (Page 2 of 3)

BORING/WELL #: <u>MW-6</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
30	SILT WITH SAND (ML): tan, fine-grained sand, dry	30.0' to 33.0'	30.0' to 35.0'		184		57" of 2" DIA PVC Casing	
	CALICHE	33.0' to 34.0'						
	SILT WITH SAND (ML): tan, fine-grained sand, dry	34.0' to 35.0'						
35	SILTY SAND (SM): tan, fine to medium-grained, dry		35.0' to 40.0'		265			35
		43.0' to 55.0'	40.0' to 45.0'		121			40
40			45.0' to 50.0'		114			45
45			50.0' to 55.0'		189			50
50								
55	SILT WITH SAND (ML): tan, fine-grained sand, moist	55.0' to 60.0'	55.0' to 60.0'		219		Quartz Sand Filter Pack 15' - Slotted Well Screen Quartz Sand Filter Pack	55
60	GWL -59.9' BGS							60

SOIL BORING LOG (Page 3 of 3)

BORING/WELL #: <u>MW-6</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
60	SILTY SAND (SM): tan, fine to medium-grained, moist	60.0' to 63.0'	60.0' to 65.0'		312		Quartz Sand Filter Pack 15' - Slotted Well Screen Quartz Sand Filter Pack	
	CALICHE	62.0' to 63.0'						
65	SILTY SAND (SM): tan, fine to medium-grained, moist	65.0' to 66.0'	65.0' to 70.0'		259		Quartz Sand Filter Pack 15' - Slotted Well Screen Quartz Sand Filter Pack	65
	CALICHE	66.0' to 67.0'						
	SILTY SAND (SM): tan, medium-grained, moist	67.0' to 70.0'						
70	TD 70'							70
75								75
80								80
85								85
90								90

SOIL BORING LOG (Page 1 of 3)

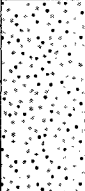
BORING/WELL #: <u>MW-7</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u> (ft)
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
5	SILTY SAND (SM): gray, fine-grained, dry	0.0' to 5.0'	0.0' to 5.0'		1.5		57" of 2" DIA PVC Casing	5
10	SILT WITH SAND (ML): tan, fine-grained sand, dry	5.0' to 29.0'	5.0' to 10.0'		2.1			10
15			10.0' to 15.0'		3.2			15
20			15.0' to 20.0'		1.9			20
25			20.0' to 25.0'		1.9			25
30	CALICHE	29.0' to 30.0'	25.0' to 30.0'		1.8			30

BORING/WELL #: <u>MW-7</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
30	SILTY SAND (SM): tan, fine-grained, dry	30.0' to 60.0'	30.0' to 35.0'		1.7		57" of 2" DIA PVC Casing	
35			35.0' to 40.0'		2.8			35
40			40.0' to 45.0'		1.6			40
45			45.0' to 50.0'		3.1			45
50			50.0' to 55.0'		2.3			50
55			55.0' to 60.0'		2.4			55
60	GWL -60.7' BGS						Quartz Sand Filter Pack 15' - Slotted Well Screen Quartz Sand Filter Pack	60

BORING/WELL #: <u>MW-7</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN:DIA: <u>2"(in)</u> LENGTH: (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>8/29/01</u>
CASING:DIA: <u>2"(in)</u> LENGTH: (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID(PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
60	SILTY SAND (SM): tan, fine to medium-grained, moist	60.0' to 64.0'	60.0' to 65.0'		1.0		Quartz Sand Filter Pack 15' - Slotted Well Screen Quartz Sand Filter Pack	
	CALICHE	64.0' to 65.0'						
65	SILTY SAND (SM): tan, medium-grained, moist	65.0' to 67.0'						65
	CALICHE	67.0' to 68.0'	65.0' to 70.0'		2.4			
	SILTY SAND (SM): tan, medium-grained, moist	68.0' to 70.0'						70
70	TD 70'							
75								75
80								80
85								85
90								90

BORING/WELL #: MW-8
 PROJECT NO.: 2007219
 LOCATION: Hobbs, Lea County, NM
 TOTAL DEPTH: 70.0'
 SURFACE ELEVATION: _____ (ft)
 SCREEN:DIA: 2" (in) LENGTH: _____ (ft) SIZE: 2"
 CASING:DIA: 2" (in) LENGTH: _____ (ft) TYPE: SCH 40
 DRILLING METHOD(S): Air Rotary

 CLIENT: Conoco, Inc.
 PROJECT: Apex Compressor Station
 WATER LEVEL: INITIAL: _____ ELEV: _____ (ft)
 BORE HOLE DIAMETER: 5" Air Rotary
 DRILLING COMPANY: Scarborough Drilling
 DATE DRILLED: 1/9/02
 DRILLER: Scott Scarborough
 OVERSIGHT: Daniel W. Erskine

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID(PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	SILTY SAND (SM): dark brown, fine-grained, dry, with caliche stringers.	0.0' to 5.0'	0.0' to 5.0'		1.2			
5	SILTY SAND (SM): tan, fine-grained, dry		5.0' to 10.0'		1.1			5
10			10.0' to 15.0'		2.2			10
15		5.0' to 29.0'	15.0' to 20.0'		2.1			15
20			20.0' to 25.0'		1.2			20
25			25.0' to 30.0'		1.8			25
30	CALICHE	29.0' to 30.0'						

57' of 2" DIA PVC Casing

SOIL BORING LOG (Page 2 of 3)

BORING/WELL #: <u>MW-8</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>1/9/02</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
30	SILTY SAND (SM): tan, fine-grained, dry	30.0' to 33.0'						
			30.0' to 35.0'		0.7			
	CALICHE	33.0' to 35.0'						
35	SILTY SAND (SM): tan, fine-grained, dry							35
			35.0' to 40.0'		3.1			
40								40
			40.0' to 45.0'		3.4			
45		35.0' to 60.0'						45
			45.0' to 50.0'		1.3			
50								50
			50.0' to 55.0'		2.5			
55								55
			55.0' to 60.0'		1.5			
60								60

57' of 2" DIA PVC Casing

 Quartz Sand Filter Pack
 15' - Slotted Well Screen
 Quartz Sand Filter Pack

BORING/WELL #: MW-9 CLIENT: Conoco, Inc.
 PROJECT NO.: 2007219 PROJECT: Apex Compressor Station
 LOCATION: Hobbs, Lea County, NM WATER LEVEL: INITIAL: ELEV: (ft)
 TOTAL DEPTH: 70.0' BORE HOLE DIAMETER: 5" Air Rotary
 SURFACE ELEVATION: _____ (ft) DRILLING COMPANY: Scarborough Drilling
 SCREEN:DIA: 2" (in) LENGTH: (ft) SIZE: 2" DATE DRILLED: 1/9/02
 CASING:DIA: 2" (in) LENGTH: (ft) TYPE: SCH 40 DRILLER: Scott Scarborough
 DRILLING METHOD(S): Air Rotary OVERSIGHT: Daniel W. Erskine

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID(PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
5	SILTY SAND (SM): dark brown, fine-grained, dry, with caliche stringers.	0.0' to 8.0'	0.0' to 5.0'		1.1			5
10	CALICHE	8.0' to 9.0'	5.0' to 10.0'		1.5			10
15	SILTY SAND (SM): tan, fine to medium-grained, dry	9.0' to 26.0'	10.0' to 15.0'		1.1			15
20			15.0' to 20.0'		0.9			20
25			20.0' to 25.0'		1.5			25
	CALICHE	26.0' to 27.0'						
30	SILTY SAND (SM): tan, fine to medium-grained, dry	27.0' to 320.0'	25.0' to 30.0'		1.2			

57' of 2" DIA PVC Casing

SOIL BORING LOG (Page 2 of 3)

BORING/WELL #: <u>MW-9</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN: DIA: <u>2" (in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>1/9/02</u>
CASING: DIA: <u>2" (in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
30	SILTY SAND (SM): tan, fine to medium-grained, dry	30.0' to 32.0'					57" of 2" DIA PVC Casing	
	CALICHE	32.0' to 34.0'	30.0' to 35.0'		1.2			
35	SILT WITH SAND (ML): tan, fine-grained sand, dry	34.0' to 40.0'	35.0' to 40.0'		1.5			35
40	CALICHE	40.0' to 40.7'						40
	SILT WITH SAND (ML): tan, fine-grained sand, dry		40.0' to 45.0'		1.1			
45			45.0' to 50.0'		0.9			45
50		40.7' to 60.0'	50.0' to 55.0'		0.8			50
55			55.0' to 60.0'		1.1			55
60								60

57" of 2" DIA PVC Casing

Bentonite

Quartz Sand Filter Pack

15' - Slotted Well Screen

Bentonite

Quartz Sand Filter Pack

BORING/WELL #: <u>MW-9</u>	CLIENT: <u>Conoco, Inc.</u>
PROJECT NO.: <u>2007219</u>	PROJECT: <u>Apex Compressor Station</u>
LOCATION: <u>Hobbs, Lea County, NM</u>	WATER LEVEL: INITIAL: <u>ELEV:</u>
TOTAL DEPTH: <u>70.0'</u>	BORE HOLE DIAMETER: <u>5" Air Rotary</u>
SURFACE ELEVATION: _____ (ft)	DRILLING COMPANY: <u>Scarborough Drilling</u>
SCREEN:DIA: <u>2"(in)</u> LENGTH: _____ (ft) SIZE: <u>2"</u>	DATE DRILLED: <u>1/9/02</u>
CASING:DIA: <u>2"(in)</u> LENGTH: _____ (ft) TYPE: <u>SCH 40</u>	DRILLER: <u>Scott Scarborough</u>
DRILLING METHOD(S): <u>Air Rotary</u>	OVERSIGHT: <u>Daniel W. Erskine</u>

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	% REC	PID(PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
60	SILTY SAND (SM): tan, fine to medium-grained, moist GWL -61.1' BGS	60.0' to 63.0'						
			60.0' to 65.0'		1.3			
	CALICHE	63.0' to 64.0'						
	SILTY SAND (SM): tan, fine to medium-grained, moist	64.0' to 65.0'						
65	CALICHE	65.0' to 68.0'			1.5			65
			65.0' to 70.0'					
	SILTY SAND (SM): tan, fine to medium-grained, moist	68.0' to 69.0'						
	CALICHE	69.0' to 70.0'						
70	SILTY SAND (SM): tan, medium-grained, moist	70.0' to 72.0'						70
	TD 72'							
75								75
80								80
85								85
90								90

ATTACHMENT 2

Laboratory Analytical Results

**Certificate of
Analysis**

STL Austin
14046 Summit Drive
Austin, Texas 78728

Tel: 512 244 0855
Fax: 512 244 0160
www.stl-inc.com



STL Austin

1/75

ANALYTICAL REPORT

PROJECT NO. HOBBS, NM

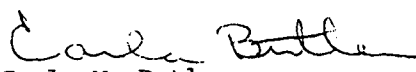
NG00006 Apex Compressor Stat.

Lot #: I2A110164

Dan Erskine

**Maxim Technologies
10601 Lomas NE Ste 106
Albuquerque, NM 87112**

SEVERN TRENT LABORATORIES, INC.


Carla M. Butler
Project Manager

January 25, 2002

CASE NARRATIVE

I2A110164

Samples received in good condition within acceptable cooler temperature.

Some compounds are reported non-detect at elevated reporting limits due to matrix required dilution for the 8260B analysis of samples.

Recoveries of calcium and sodium were not calculated for the Matrix Spike/Matrix Spike Duplicate of sample 001 because the sample amount was more than four times the spike amount.

Recoveries outside limits for the Matrix Spike/Matrix Spike Duplicate of non-project specific QC samples are not discussed in this case narrative.

EXECUTIVE SUMMARY - Detection Highlights

I2A110164

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-1 01/10/02 14:20 001				
Arsenic	0.067	0.010	mg/L	SW846 6010B
Barium	2.5	0.20	mg/L	SW846 6010B
Calcium	276	5.0	mg/L	SW846 6010B
Chromium	0.0054	0.0050	mg/L	SW846 6010B
Magnesium	86.3	5.0	mg/L	SW846 6010B
Sodium	200	25.0	mg/L	SW846 6010B
Benzene	4000	100	ug/L	SW846 8260B
Ethylbenzene	700	100	ug/L	SW846 8260B
Toluene	6100	100	ug/L	SW846 8260B
Xylenes (total)	4800	200	ug/L	SW846 8260B
Total Dissolved	1430	40.0	mg/L	MCAWW 160.1
Solids				
Chloride	448	100	mg/L	MCAWW 300.0A
Sulfate	1.5	1.0	mg/L	MCAWW 300.0A
Bicarbonate	577	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	577	5.0	mg/L	MCAWW 310.1
MW-2 01/10/02 13:20 002				
Barium	0.21	0.20	mg/L	SW846 6010B
Calcium	178	5.0	mg/L	SW846 6010B
Chromium	0.0070	0.0050	mg/L	SW846 6010B
Magnesium	16.4	5.0	mg/L	SW846 6010B
Sodium	38.7	5.0	mg/L	SW846 6010B
Total Dissolved	542	40.0	mg/L	MCAWW 160.1
Solids				
Chloride	23.8	5.0	mg/L	MCAWW 300.0A
Sulfate	49.7	5.0	mg/L	MCAWW 300.0A
Nitrate	2.4	0.50	mg/L	MCAWW 300.0A
Bicarbonate	310	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	310	5.0	mg/L	MCAWW 310.1
MW-3 01/10/02 13:45 003				
Arsenic	0.075	0.010	mg/L	SW846 6010B
Barium	4.5	0.20	mg/L	SW846 6010B
Calcium	193	5.0	mg/L	SW846 6010B
Magnesium	77.6	5.0	mg/L	SW846 6010B
Sodium	192	25.0	mg/L	SW846 6010B
Benzene	3500	100	ug/L	SW846 8260B
Ethylbenzene	520	100	ug/L	SW846 8260B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

I2A110164

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-3 01/10/02 13:45 003				
Toluene	7300	100	ug/L	SW846 8260B
Xylenes (total)	3500	200	ug/L	SW846 8260B
Total Dissolved Solids	1120	40.0	mg/L	MCAWW 160.1
Chloride	209	100	mg/L	MCAWW 300.0A
Bicarbonate	729	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	729	5.0	mg/L	MCAWW 310.1
MW-4 01/10/02 09:20 004				
Arsenic	0.012	0.010	mg/L	SW846 6010B
Barium	0.20	0.20	mg/L	SW846 6010B
Calcium	262	5.0	mg/L	SW846 6010B
Chromium	0.010	0.0050	mg/L	SW846 6010B
Magnesium	14.7	5.0	mg/L	SW846 6010B
Sodium	36.8	5.0	mg/L	SW846 6010B
Total Dissolved Solids	486	40.0	mg/L	MCAWW 160.1
Chloride	20.2	5.0	mg/L	MCAWW 300.0A
Sulfate	66.7	5.0	mg/L	MCAWW 300.0A
Nitrate	2.1	0.50	mg/L	MCAWW 300.0A
Bicarbonate	262	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	262	5.0	mg/L	MCAWW 310.1
MW-5 01/10/02 10:05 005				
Calcium	389	5.0	mg/L	SW846 6010B
Chromium	0.014	0.0050	mg/L	SW846 6010B
Magnesium	20.5	5.0	mg/L	SW846 6010B
Sodium	66.6	5.0	mg/L	SW846 6010B
Total Dissolved Solids	597	40.0	mg/L	MCAWW 160.1
Chloride	43.3	10.0	mg/L	MCAWW 300.0A
Sulfate	85.4	10.0	mg/L	MCAWW 300.0A
Nitrate	2.2	0.50	mg/L	MCAWW 300.0A
Bicarbonate	285	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	285	5.0	mg/L	MCAWW 310.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

I2A110164

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-6 01/10/02 11:30 006				
Calcium	271	5.0	mg/L	SW846 6010B
Magnesium	29.2	5.0	mg/L	SW846 6010B
Sodium	107	5.0	mg/L	SW846 6010B
Benzene	33	1.0	ug/L	SW846 8260B
Xylenes (total)	140	2.0	ug/L	SW846 8260B
Total Dissolved Solids	1150	40.0	mg/L	MCAWW 160.1
Chloride	170	20.0	mg/L	MCAWW 300.0A
Sulfate	178	20.0	mg/L	MCAWW 300.0A
Nitrate	1.6	0.50	mg/L	MCAWW 300.0A
Bicarbonate	486	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	486	5.0	mg/L	MCAWW 310.1
MW-7 01/10/02 12:20 007				
Arsenic	0.026	0.010	mg/L	SW846 6010B
Barium	0.24	0.20	mg/L	SW846 6010B
Calcium	357	5.0	mg/L	SW846 6010B
Chromium	0.013	0.0050	mg/L	SW846 6010B
Magnesium	55.5	5.0	mg/L	SW846 6010B
Sodium	232	50.0	mg/L	SW846 6010B
Benzene	380	10	ug/L	SW846 8260B
Ethylbenzene	23	10	ug/L	SW846 8260B
Toluene	66	10	ug/L	SW846 8260B
Xylenes (total)	210	20	ug/L	SW846 8260B
Total Dissolved Solids	1530	40.0	mg/L	MCAWW 160.1
Chloride	249	100	mg/L	MCAWW 300.0A
Sulfate	340	100	mg/L	MCAWW 300.0A
Bicarbonate	511	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	511	5.0	mg/L	MCAWW 310.1
MW-8 01/10/02 10:35 008				
Arsenic	0.026	0.010	mg/L	SW846 6010B
Barium	0.80	0.20	mg/L	SW846 6010B
Calcium	642	5.0	mg/L	SW846 6010B
Chromium	0.040	0.0050	mg/L	SW846 6010B
Magnesium	42.7	5.0	mg/L	SW846 6010B
Sodium	38.8	5.0	mg/L	SW846 6010B
Lead	0.0058	0.0030	mg/L	SW846 6010B

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

I2A110164

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
MW-8 01/10/02 10:35 008				
Selenium	0.0059	0.0050	mg/L	SW846 6010B
Total Dissolved Solids	440	40.0	mg/L	MCAWW 160.1
Chloride	31.4	10.0	mg/L	MCAWW 300.0A
Sulfate	87.4	10.0	mg/L	MCAWW 300.0A
Nitrate	2.9	0.50	mg/L	MCAWW 300.0A
Bicarbonate	161	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	161	5.0	mg/L	MCAWW 310.1
MW-9 01/10/02 11:05 009				
Arsenic	0.017	0.010	mg/L	SW846 6010B
Barium	0.32	0.20	mg/L	SW846 6010B
Calcium	449	5.0	mg/L	SW846 6010B
Chromium	0.022	0.0050	mg/L	SW846 6010B
Magnesium	20.5	5.0	mg/L	SW846 6010B
Sodium	37.0	5.0	mg/L	SW846 6010B
Lead	0.0066	0.0030	mg/L	SW846 6010B
Total Dissolved Solids	400	40.0	mg/L	MCAWW 160.1
Chloride	24.6	5.0	mg/L	MCAWW 300.0A
Sulfate	70.2	5.0	mg/L	MCAWW 300.0A
Nitrate	2.6	0.50	mg/L	MCAWW 300.0A
Bicarbonate	161	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	161	5.0	mg/L	MCAWW 310.1
MW-10 01/10/02 08:40 010				
Arsenic	0.067	0.010	mg/L	SW846 6010B
Barium	2.5	0.20	mg/L	SW846 6010B
Calcium	296	5.0	mg/L	SW846 6010B
Chromium	0.0057	0.0050	mg/L	SW846 6010B
Magnesium	86.0	5.0	mg/L	SW846 6010B
Sodium	203	25.0	mg/L	SW846 6010B
Benzene	4100	100	ug/L	SW846 8260B
Ethylbenzene	600	100	ug/L	SW846 8260B
Toluene	6800	100	ug/L	SW846 8260B
Xylenes (total)	4300	200	ug/L	SW846 8260B
Total Dissolved Solids	1400	40.0	mg/L	MCAWW 160.1
Chloride	451	100	mg/L	MCAWW 300.0A

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

I2A110164

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
MW-10 01/10/02 08:40 010				
Sulfate	1.6	1.0	mg/L	MCAWW 300.0A
Bicarbonate	575	5.0	mg/L	MCAWW 310.1
Alkalinity				
Total Alkalinity	575	5.0	mg/L	MCAWW 310.1

ANALYTICAL METHODS SUMMARY

I2A110164

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Alkalinity	MCAWW 310.1
Bicarbonate Alkalinity	MCAWW 310.1
Carbonate Alkalinity	MCAWW 310.1
Chloride	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1
Hydroxide Alkalinity	MCAWW 310.1
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Nitrate as N	MCAWW 300.0A
Sulfate	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Volatile Organics by GC/MS	SW846 8260B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

I2A110164

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
MCAWW 160.1	David A. Tocher	800002
MCAWW 300.0A	Cynthia A. Anderson	034090
MCAWW 310.1	David A. Tocher	800002
SW846 6010B	Kenneth Free	800011
SW846 7470A	Dung (Minh) Le	038027
SW846 8260B	David Yancey	014906
SW846 8260B	Ron Guillett	400174

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
 EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
 Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

I2A110164

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ERH28	001	MW-1	01/10/02	14:20
ERH3H	002	MW-2	01/10/02	13:20
ERH3J	003	MW-3	01/10/02	13:45
ERH3R	004	MW-4	01/10/02	09:20
ERH3W	005	MW-5	01/10/02	10:05
ERH30	006	MW-6	01/10/02	11:30
ERH32	007	MW-7	01/10/02	12:20
ERH34	008	MW-8	01/10/02	10:35
ERH37	009	MW-9	01/10/02	11:05
ERH38	010	MW-10	01/10/02	08:40

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

CONOCO INC.

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #....: I2A110164-001 Work Order #....: ERH281A0 Matrix.....: WATER
 Date Sampled....: 01/10/02 14:20 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 100 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	1000	ug/L
Benzene	4000	100	ug/L
Bromochloromethane	ND	100	ug/L
Bromodichloromethane	ND	100	ug/L
Bromoform	ND	100	ug/L
Bromomethane	ND	200	ug/L
2-Butanone (MEK)	ND	500	ug/L
Carbon disulfide	ND	100	ug/L
Carbon tetrachloride	ND	100	ug/L
Chlorobenzene	ND	100	ug/L
Chloroethane	ND	200	ug/L
Chloroform	ND	100	ug/L
Chloromethane	ND	200	ug/L
Dibromochloromethane	ND	100	ug/L
1,2-Dibromo-3-chloro- propane	ND	200	ug/L
1,2-Dibromoethane	ND	100	ug/L
1,2-Dichlorobenzene	ND	100	ug/L
1,3-Dichlorobenzene	ND	100	ug/L
1,4-Dichlorobenzene	ND	100	ug/L
1,1-Dichloroethane	ND	100	ug/L
1,2-Dichloroethane	ND	100	ug/L
1,1-Dichloroethene	ND	100	ug/L
1,2-Dichloroethene	ND	100	ug/L
(total)			
cis-1,2-Dichloroethene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
1,2-Dichloropropane	ND	100	ug/L
cis-1,3-Dichloropropene	ND	100	ug/L
trans-1,3-Dichloropropene	ND	100	ug/L
Ethylbenzene	700	100	ug/L
2-Hexanone	ND	500	ug/L
Methylene chloride	ND	100	ug/L
4-Methyl-2-pentanone (MIBK)	ND	500	ug/L
Styrene	ND	100	ug/L
1,1,2,2-Tetrachloroethane	ND	100	ug/L
Tetrachloroethene	ND	100	ug/L
Toluene	6100	100	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: I2A110164-001 Work Order #...: ERH281A0 Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	100	ug/L
1,1,2-Trichloroethane	ND	100	ug/L
Trichloroethene	ND	100	ug/L
Vinyl chloride	ND	200	ug/L
Xylenes (total)	4800	200	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	100	(75 - 133)
Toluene-d8	102	(86 - 126)
Dibromofluoromethane	98	(76 - 130)
1,2-Dichloroethane-d4	98	(53 - 154)

CONOCO INC.

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #....: I2A110164-002 Work Order #....: ERH3H1AA Matrix.....: WATER
 Date Sampled....: 01/10/02 13:20 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	0.50	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #....: I2A110164-002 Work Order #....: ERH3H1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	95	(75 - 133)
Toluene-d8	101	(86 - 126)
Dibromofluoromethane	100	(76 - 130)
1,2-Dichloroethane-d4	96	(53 - 154)

CONOCO INC.

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #....: I2A110164-003 Work Order #....: ERH3J1AA Matrix.....: WATER
 Date Sampled....: 01/10/02 13:45 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 100 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	1000	ug/L
Benzene	3500	100	ug/L
Bromochloromethane	ND	100	ug/L
Bromodichloromethane	ND	100	ug/L
Bromoform	ND	100	ug/L
Bromomethane	ND	200	ug/L
2-Butanone (MEK)	ND	500	ug/L
Carbon disulfide	ND	100	ug/L
Carbon tetrachloride	ND	100	ug/L
Chlorobenzene	ND	100	ug/L
Chloroethane	ND	200	ug/L
Chloroform	ND	100	ug/L
Chloromethane	ND	200	ug/L
Dibromochloromethane	ND	100	ug/L
1,2-Dibromo-3-chloro- propane	ND	200	ug/L
1,2-Dibromoethane	ND	100	ug/L
1,2-Dichlorobenzene	ND	100	ug/L
1,3-Dichlorobenzene	ND	100	ug/L
1,4-Dichlorobenzene	ND	100	ug/L
1,1-Dichloroethane	ND	100	ug/L
1,2-Dichloroethane	ND	100	ug/L
1,1-Dichloroethene	ND	100	ug/L
1,2-Dichloroethene (total)	ND	100	ug/L
cis-1,2-Dichloroethene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
1,2-Dichloropropane	ND	100	ug/L
cis-1,3-Dichloropropene	ND	100	ug/L
trans-1,3-Dichloropropene	ND	100	ug/L
Ethylbenzene	520	100	ug/L
2-Hexanone	ND	500	ug/L
Methylene chloride	ND	100	ug/L
4-Methyl-2-pentanone (MIBK)	ND	500	ug/L
Styrene	ND	100	ug/L
1,1,2,2-Tetrachloroethane	ND	100	ug/L
Tetrachloroethene	ND	100	ug/L
Toluene	7300	100	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #....: I2A110164-003 Work Order #....: ERH3J1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	100	ug/L
1,1,2-Trichloroethane	ND	100	ug/L
Trichloroethene	ND	100	ug/L
Vinyl chloride	ND	200	ug/L
Xylenes (total)	3500	200	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	101	(75 - 133)
Toluene-d8	103	(86 - 126)
Dibromofluoromethane	101	(76 - 130)
1,2-Dichloroethane-d4	99	(53 - 154)

CONOCO INC.

Client Sample ID: MW-4

GC/MS Volatiles

Lot-Sample #....: I2A110164-004 Work Order #....: ERH3R1AA Matrix.....: WATER
 Date Sampled....: 01/10/02 09:20 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene	ND	1.0	ug/L
(total)			
cis-1,2-Dichloroethene	ND	0.50	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-4

GC/MS Volatiles

Lot-Sample #....: I2A110164-004 Work Order #....: ERH3R1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	97	(75 - 133)
Toluene-d8	96	(86 - 126)
Dibromofluoromethane	100	(76 - 130)
1,2-Dichloroethane-d4	102	(53 - 154)

CONOCO INC.

Client Sample ID: MW-5

GC/MS Volatiles

Lot-Sample #....: I2A110164-005 Work Order #....: ERH3W1AA Matrix.....: WATER
 Date Sampled....: 01/10/02 10:05 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene	ND	1.0	ug/L
(total)			
cis-1,2-Dichloroethene	ND	0.50	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-5

GC/MS Volatiles

Lot-Sample #....: I2A110164-005 Work Order #....: ERH3W1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	96	(75 - 133)
Toluene-d8	101	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
1,2-Dichloroethane-d4	99	(53 - 154)

CONOCO INC.

Client Sample ID: MW-6

GC/MS Volatiles

Lot-Sample #...: I2A110164-006 Work Order #...: ERH301AA Matrix.....: WATER
 Date Sampled...: 01/10/02 11:30 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #...: 2017154
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	33	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene	ND	1.0	ug/L
(total)			
cis-1,2-Dichloroethene	ND	0.50	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-6

GC/MS Volatiles

Lot-Sample #...: I2A110164-006 Work Order #...: ERH301AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	140	2.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	100	(75 - 133)
Toluene-d8	100	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
1,2-Dichloroethane-d4	96	(53 - 154)

CONOCO INC.

Client Sample ID: MW-7

GC/MS Volatiles

Lot-Sample #....: I2A110164-007 Work Order #....: ERH321AA Matrix.....: WATER
 Date Sampled....: 01/10/02 12:20 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 10 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	100	ug/L
Benzene	380	10	ug/L
Bromochloromethane	ND	10	ug/L
Bromodichloromethane	ND	10	ug/L
Bromoform	ND	10	ug/L
Bromomethane	ND	20	ug/L
2-Butanone (MEK)	ND	50	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	10	ug/L
Chlorobenzene	ND	10	ug/L
Chloroethane	ND	20	ug/L
Chloroform	ND	10	ug/L
Chloromethane	ND	20	ug/L
Dibromochloromethane	ND	10	ug/L
1,2-Dibromo-3-chloro- propane	ND	20	ug/L
1,2-Dibromoethane	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,1-Dichloroethane	ND	10	ug/L
1,2-Dichloroethane	ND	10	ug/L
1,1-Dichloroethene	ND	10	ug/L
1,2-Dichloroethene	ND	10	ug/L
(total)			
cis-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,2-Dichloroethene	ND	5.0	ug/L
1,2-Dichloropropane	ND	10	ug/L
cis-1,3-Dichloropropene	ND	10	ug/L
trans-1,3-Dichloropropene	ND	10	ug/L
Ethylbenzene	23	10	ug/L
2-Hexanone	ND	50	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L
Styrene	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	ND	10	ug/L
Toluene	66	10	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-7

GC/MS Volatiles

Lot-Sample #...: I2A110164-007 Work Order #...: ERH321AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	10	ug/L
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	ND	10	ug/L
Vinyl chloride	ND	20	ug/L
Xylenes (total)	210	20	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	97	(75 - 133)
Toluene-d8	100	(86 - 126)
Dibromofluoromethane	98	(76 - 130)
1,2-Dichloroethane-d4	97	(53 - 154)

CONOCO INC.

Client Sample ID: MW-8

GC/MS Volatiles

Lot-Sample #....: I2A110164-008 Work Order #....: ERH341AA Matrix.....: WATER
 Date Sampled....: 01/10/02 10:35 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	0.50	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-8

GC/MS Volatiles

Lot-Sample #....: I2A110164-008 Work Order #....: ERH341AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(75 - 133)
Toluene-d8	102	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
1,2-Dichloroethane-d4	97	(53 - 154)

CONOCO INC.

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #....: I2A110164-009 Work Order #....: ERH371AA Matrix.....: WATER
 Date Sampled....: 01/10/02 11:05 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #....: 2017154
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone (MEK)	ND	5.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene	ND	1.0	ug/L
(total)			
cis-1,2-Dichloroethene	ND	0.50	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #...: I2A110164-009 Work Order #...: ERH371AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	98	(75 - 133)
Toluene-d8	100	(86 - 126)
Dibromofluoromethane	100	(76 - 130)
1,2-Dichloroethane-d4	97	(53 - 154)

CONOCO INC.

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #....: I2A110164-010 Work Order #....: ERH381AA Matrix.....: WATER
 Date Sampled....: 01/10/02 08:40 Date Received...: 01/11/02
 Prep Date.....: 01/21/02 Analysis Date...: 01/21/02
 Prep Batch #....: 2023150
 Dilution Factor: 100 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	1000	ug/L
Benzene	4100	100	ug/L
Bromochloromethane	ND	100	ug/L
Bromodichloromethane	ND	100	ug/L
Bromoform	ND	100	ug/L
Bromomethane	ND	200	ug/L
2-Butanone (MEK)	ND	500	ug/L
Carbon disulfide	ND	100	ug/L
Carbon tetrachloride	ND	100	ug/L
Chlorobenzene	ND	100	ug/L
Chloroethane	ND	200	ug/L
Chloroform	ND	100	ug/L
Chloromethane	ND	200	ug/L
Dibromochloromethane	ND	100	ug/L
1,2-Dibromo-3-chloro- propane	ND	200	ug/L
1,2-Dibromoethane	ND	100	ug/L
1,2-Dichlorobenzene	ND	100	ug/L
1,3-Dichlorobenzene	ND	100	ug/L
1,4-Dichlorobenzene	ND	100	ug/L
1,1-Dichloroethane	ND	100	ug/L
1,2-Dichloroethane	ND	100	ug/L
1,1-Dichloroethene	ND	100	ug/L
1,2-Dichloroethene	ND	100	ug/L
(total)			
cis-1,2-Dichloroethene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
1,2-Dichloropropane	ND	100	ug/L
cis-1,3-Dichloropropene	ND	100	ug/L
trans-1,3-Dichloropropene	ND	100	ug/L
Ethylbenzene	600	100	ug/L
2-Hexanone	ND	500	ug/L
Methylene chloride	ND	100	ug/L
4-Methyl-2-pentanone (MIBK)	ND	500	ug/L
Styrene	ND	100	ug/L
1,1,2,2-Tetrachloroethane	ND	100	ug/L
Tetrachloroethene	ND	100	ug/L
Toluene	6800	100	ug/L

(Continued on next page)

CONOCO INC.

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #....: I2A110164-010 Work Order #....: ERH381AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
1,1,1-Trichloroethane	ND	100	ug/L
1,1,2-Trichloroethane	ND	100	ug/L
Trichloroethene	ND	100	ug/L
Vinyl chloride	ND	200	ug/L
Xylenes (total)	4300	200	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	106	(75 - 133)
Toluene-d8	105	(86 - 126)
Dibromofluoromethane	97	(76 - 130)
1,2-Dichloroethane-d4	100	(53 - 154)

CONOCO INC.

Client Sample ID: MW-1

General Chemistry

Lot-Sample #....: I2A110164-001

Work Order #....: ERH28

Matrix.....: WATER

Date Sampled...: 01/10/02 14:20

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	577	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	448	100	mg/L	MCAWW 300.0A	01/11/02	2011278
		Dilution Factor: 100				
Hydroxide Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	ND	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	1.5	1.0	mg/L	MCAWW 300.0A	01/11/02	2011284
		Dilution Factor: 1				
Total Alkalinity	577	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	1430	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: I2A110164-002

Work Order #...: ERH3H

Matrix.....: WATER

Date Sampled...: 01/10/02 13:20

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	310	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	23.8	5.0	mg/L	MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 5				
Hydroxide Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	2.4	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	49.7	5.0	mg/L	MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 5				
Total Alkalinity	310	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	542	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: I2A110164-003

Work Order #...: ERH3J

Matrix.....: WATER

Date Sampled...: 01/10/02 13:45

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	729	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	209	100	mg/L	MCAWW 300.0A	01/11/02	2011278
		Dilution Factor: 100				
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	ND	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	01/11/02	2011284
		Dilution Factor: 1				
Total Alkalinity	729	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	1120	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	262	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	20.2	5.0	mg/L	MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 5				
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	2.1	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	66.7	5.0	mg/L	MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 5				
Total Alkalinity	262	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	486	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	285	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	43.3	10.0	mg/L	MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 10				
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	2.2	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	85.4	10.0	mg/L	MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 10				
Total Alkalinity	285	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	597	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-6

General Chemistry

Lot-Sample #....: I2A110164-006

Work Order #....: ERH30

Matrix.....: WATER

Date Sampled....: 01/10/02 11:30

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	486	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	170	20.0	mg/L	MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 20				
Hydroxide Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	1.6	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	178	20.0	mg/L	MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 20				
Total Alkalinity	486	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	1150	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-7

General Chemistry

Lot-Sample #...: I2A110164-007

Work Order #...: ERH32

Matrix.....: WATER

Date Sampled...: 01/10/02 12:20

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	511	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	249	100	mg/L	MCAWW 300.0A	01/11/02	2011278
		Dilution Factor: 100				
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	ND	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	340	100	mg/L	MCAWW 300.0A	01/11/02	2011284
		Dilution Factor: 100				
Total Alkalinity	511	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	1530	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-8

General Chemistry

Lot-Sample #....: I2A110164-008 Work Order #....: ERH34 Matrix.....: WATER
 Date Sampled....: 01/10/02 10:35 Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	161	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	31.4	10.0	mg/L	MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 10				
Hydroxide Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	2.9	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	87.4	10.0	mg/L	MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 10				
Total Alkalinity	161	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	440	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-9

General Chemistry

Lot-Sample #....: I2A110164-009

Work Order #....: ERH37

Matrix.....: WATER

Date Sampled...: 01/10/02 11:05

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	161	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	24.6	5.0	mg/L	MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 5				
Hydroxide Alkalinity ND		5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	2.6	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	70.2	5.0	mg/L	MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 5				
Total Alkalinity	161	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	400	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-10

General Chemistry

Lot-Sample #...: I2A110164-010

Work Order #...: ERH38

Matrix.....: WATER

Date Sampled...: 01/10/02 08:40

Date Received...: 01/11/02

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity	575	5.0	mg/L	MCAWW 310.1	01/15/02	2015195
		Dilution Factor: 1				
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015196
		Dilution Factor: 1				
Chloride	451	100	mg/L	MCAWW 300.0A	01/11/02	2011278
		Dilution Factor: 100				
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1	01/15/02	2015197
		Dilution Factor: 1				
Nitrate	ND	0.50	mg/L	MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	1.6	1.0	mg/L	MCAWW 300.0A	01/11/02	2011284
		Dilution Factor: 1				
Total Alkalinity	575	5.0	mg/L	MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	1400	40.0	mg/L	MCAWW 160.1	01/15/02	2015344
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-1

TOTAL Metals

Lot-Sample #...: I2A110164-001

Matrix.....: WATER

Date Sampled...: 01/10/02 14:20 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH281AJ
		Dilution Factor: 1				
Arsenic	0.067	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH281AK
		Dilution Factor: 1				
Barium	2.5	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH281AL
		Dilution Factor: 1				
Calcium	276	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH281AM
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH281AN
		Dilution Factor: 1				
Chromium	0.0054	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH281AP
		Dilution Factor: 1				
Magnesium	86.3	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH281AQ
		Dilution Factor: 1				
Sodium	200	25.0	mg/L	SW846 6010B	01/15-01/22/02	ERH281AR
		Dilution Factor: 5				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH281AH
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH281AT
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH281AU
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-2

TOTAL Metals

Lot-Sample #...: I2A110164-002

Matrix.....: WATER

Date Sampled...: 01/10/02 13:20 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AK
		Dilution Factor: 1				
Arsenic	ND	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AL
		Dilution Factor: 1				
Barium	0.21	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AM
		Dilution Factor: 1				
Calcium	178	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AP
		Dilution Factor: 1				
Chromium	0.0070	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AQ
		Dilution Factor: 1				
Magnesium	16.4	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AR
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AU
		Dilution Factor: 1				
Sodium	38.7	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AT
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH3H1AJ
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH3H1AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-3

TOTAL Metals

Lot-Sample #...: I2A110164-003

Matrix.....: WATER

Date Sampled...: 01/10/02 13:45 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AK
		Dilution Factor: 1				
Arsenic	0.075	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AL
		Dilution Factor: 1				
Barium	4.5	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AM
		Dilution Factor: 1				
Calcium	193	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AP
		Dilution Factor: 1				
Chromium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AQ
		Dilution Factor: 1				
Magnesium	77.6	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AR
		Dilution Factor: 1				
Sodium	192	25.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AT
		Dilution Factor: 5				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3J1AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH3J1AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-4

TOTAL Metals

Lot-Sample #...: I2A110164-004

Matrix.....: WATER

Date Sampled...: 01/10/02 09:20 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AK
		Dilution Factor: 1				
Arsenic	0.012	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AL
		Dilution Factor: 1				
Barium	0.20	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AM
		Dilution Factor: 1				
Calcium	262	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AP
		Dilution Factor: 1				
Chromium	0.010	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AQ
		Dilution Factor: 1				
Magnesium	14.7	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AR
		Dilution Factor: 1				
Sodium	36.8	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AT
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3R1AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH3R1AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-5

TOTAL Metals

Lot-Sample #...: I2A110164-005

Matrix.....: WATER

Date Sampled...: 01/10/02 10:05 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AK
		Dilution Factor: 1				
Arsenic	ND	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AL
		Dilution Factor: 1				
Barium	ND	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AM
		Dilution Factor: 1				
Calcium	389	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AP
		Dilution Factor: 1				
Chromium	0.014	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AQ
		Dilution Factor: 1				
Magnesium	20.5	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AR
		Dilution Factor: 1				
Sodium	66.6	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AT
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH3W1AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH3W1AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-6

TOTAL Metals

Lot-Sample #...: I2A110164-006

Matrix.....: WATER

Date Sampled...: 01/10/02 11:30 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH301AK
		Dilution Factor: 1				
Arsenic	ND	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH301AL
		Dilution Factor: 1				
Barium	ND	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH301AM
		Dilution Factor: 1				
Calcium	271	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH301AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH301AP
		Dilution Factor: 1				
Chromium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH301AQ
		Dilution Factor: 1				
Magnesium	29.2	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH301AR
		Dilution Factor: 1				
Sodium	107	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH301AT
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH301AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH301AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH301AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-7

TOTAL Metals

Lot-Sample #...: I2A110164-007

Matrix.....: WATER

Date Sampled...: 01/10/02 12:20 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH321AK
		Dilution Factor: 1				
Arsenic	0.026	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH321AL
		Dilution Factor: 1				
Barium	0.24	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH321AM
		Dilution Factor: 1				
Calcium	357	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH321AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH321AP
		Dilution Factor: 1				
Chromium	0.013	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH321AQ
		Dilution Factor: 1				
Magnesium	55.5	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH321AR
		Dilution Factor: 1				
Sodium	232	50.0	mg/L	SW846 6010B	01/15-01/22/02	ERH321AT
		Dilution Factor: 10				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH321AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH321AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH321AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-8

TOTAL Metals

Lot-Sample #...: I2A110164-008

Matrix.....: WATER

Date Sampled...: 01/10/02 10:35 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH341AK
		Dilution Factor: 1				
Arsenic	0.026	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH341AL
		Dilution Factor: 1				
Barium	0.80	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH341AM
		Dilution Factor: 1				
Calcium	642	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH341AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH341AP
		Dilution Factor: 1				
Chromium	0.040	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH341AQ
		Dilution Factor: 1				
Magnesium	42.7	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH341AR
		Dilution Factor: 1				
Sodium	38.8	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH341AT
		Dilution Factor: 1				
Lead	0.0058	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH341AJ
		Dilution Factor: 1				
Selenium	0.0059	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH341AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH341AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-9

TOTAL Metals

Lot-Sample #...: I2A110164-009

Matrix.....: WATER

Date Sampled...: 01/10/02 11:05 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH371AK
		Dilution Factor: 1				
Arsenic	0.017	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH371AL
		Dilution Factor: 1				
Barium	0.32	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH371AM
		Dilution Factor: 1				
Calcium	449	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH371AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH371AP
		Dilution Factor: 1				
Chromium	0.022	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH371AQ
		Dilution Factor: 1				
Magnesium	20.5	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH371AR
		Dilution Factor: 1				
Sodium	37.0	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH371AT
		Dilution Factor: 1				
Lead	0.0066	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH371AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH371AU
		Dilution Factor: 1				
Prep Batch #...: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH371AV
		Dilution Factor: 1				

CONOCO INC.

Client Sample ID: MW-10

TOTAL Metals

Lot-Sample #....: I2A110164-010

Matrix.....: WATER

Date Sampled....: 01/10/02 08:40 Date Received...: 01/11/02

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 2015295						
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH381AK
		Dilution Factor: 1				
Arsenic	0.067	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERH381AL
		Dilution Factor: 1				
Barium	2.5	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERH381AM
		Dilution Factor: 1				
Calcium	296	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH381AN
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERH381AP
		Dilution Factor: 1				
Chromium	0.0057	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH381AQ
		Dilution Factor: 1				
Magnesium	86.0	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERH381AR
		Dilution Factor: 1				
Sodium	203	25.0	mg/L	SW846 6010B	01/15-01/22/02	ERH381AT
		Dilution Factor: 5				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERH381AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERH381AU
		Dilution Factor: 1				
Prep Batch #....: 2017344						
Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERH381AV
		Dilution Factor: 1				

QC DATA ASSOCIATION SUMMARY

I2A110164

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2011278	2014113
	WATER	MCAWW 300.0A		2011284	2014112
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
002	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2016173	2016046
	WATER	MCAWW 300.0A		2016172	2016047
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
003	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2011278	2014113
	WATER	MCAWW 300.0A		2011284	2014112
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
004	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2016173	2016046
	WATER	MCAWW 300.0A		2016172	2016047
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

I2A110164

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
004	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
005	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2016173	2016046
	WATER	MCAWW 300.0A		2016172	2016047
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
006	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2016173	2016046
	WATER	MCAWW 300.0A		2016172	2016047
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
007	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2011278	2014113
	WATER	MCAWW 300.0A		2011284	2014112
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
008	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2016173	2016046
	WATER	MCAWW 300.0A		2016172	2016047

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

I2A110164

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
008	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
009	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2016173	2016046
	WATER	MCAWW 300.0A		2016172	2016047
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2017154	2017041
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074
010	WATER	MCAWW 160.1		2015344	2015183
	WATER	MCAWW 310.1		2015196	
	WATER	MCAWW 300.0A		2011278	2014113
	WATER	MCAWW 300.0A		2011284	2014112
	WATER	MCAWW 300.0A		2011280	2014114
	WATER	SW846 7470A		2017344	2017147
	WATER	MCAWW 310.1		2015197	
	WATER	SW846 8260B		2023150	2023047
	WATER	SW846 6010B		2015295	2015143
	WATER	MCAWW 310.1		2015195	
	WATER	MCAWW 310.1		2015194	2015074

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I2A110164
 MB Lot-Sample #: I2A170000-154

Work Order #...: ERROQ1AA

Matrix.....: WATER

Analysis Date...: 01/15/02
 Dilution Factor: 1

Prep Date.....: 01/15/02

Prep Batch #...: 2017154

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
(total)				
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
(MIBK)				
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I2A110164

Work Order #...: ERROQ1AA

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
4-Bromofluorobenzene	96	(75 - 133)
Toluene-d8	100	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
1,2-Dichloroethane-d4	99	(53 - 154)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I2A110164
 MB Lot-Sample #: I2A230000-150

Work Order #...: ER3V11AA

Matrix.....: WATER

Analysis Date...: 01/21/02
 Dilution Factor: 1

Prep Date.....: 01/21/02

Prep Batch #...: 2023150

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
(total)				
cis-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	0.50	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone (MIBK)	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I2A110164

Work Order #...: ER3V11AA

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	2.0	ug/L	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	103	(75 - 133)
Toluene-d8	103	(86 - 126)
Dibromofluoromethane	97	(76 - 130)
1,2-Dichloroethane-d4	98	(53 - 154)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: I2A110164

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Chloride	ND	Work Order #: ERLKX1AA 1.0	mg/L	MB Lot-Sample #: I2A110000-278 MCAWW 300.0A	01/11/02	2011278
		Dilution Factor: 1				
Chloride	ND	Work Order #: ERPNJ1AA 1.0	mg/L	MB Lot-Sample #: I2A160000-173 MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 1				
Nitrate	ND	Work Order #: ERLK11AA 0.50	mg/L	MB Lot-Sample #: I2A110000-280 MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1				
Sulfate	ND	Work Order #: ERLKQ1AA 1.0	mg/L	MB Lot-Sample #: I2A110000-284 MCAWW 300.0A	01/11/02	2011284
		Dilution Factor: 1				
Sulfate	ND	Work Order #: ERPNK1AA 1.0	mg/L	MB Lot-Sample #: I2A160000-172 MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 1				
Total Alkalinity	ND	Work Order #: ERMVP1AA 5.0	mg/L	MB Lot-Sample #: I2A150000-194 MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1				
Total Dissolved Solids	ND	Work Order #: ERNKR1AA 40.0	mg/L	MB Lot-Sample #: I2A150000-344 MCAWW 160.1	01/15-01/18/02	2015344
		Dilution Factor: 1				

NOTE(S):

 Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: I2A110164

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: I2A150000-295 Prep Batch #...: 2015295						
Arsenic	ND	0.010	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AD
		Dilution Factor: 1				
Barium	ND	0.20	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AE
		Dilution Factor: 1				
Cadmium	ND	0.0020	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AG
		Dilution Factor: 1				
Calcium	ND	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AF
		Dilution Factor: 1				
Chromium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AH
		Dilution Factor: 1				
Lead	ND	0.0030	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AA
		Dilution Factor: 1				
Magnesium	ND	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AJ
		Dilution Factor: 1				
Selenium	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AL
		Dilution Factor: 1				
Silver	ND	0.0050	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AC
		Dilution Factor: 1				
Sodium	ND	5.0	mg/L	SW846 6010B	01/15-01/22/02	ERNAP1AK
		Dilution Factor: 1				

MB Lot-Sample #: I2A170000-344 Prep Batch #...: 2017344

Mercury	ND	0.00020	mg/L	SW846 7470A	01/17-01/18/02	ERT1V1AA
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: I2A110164 Work Order #....: ERROQ1AC Matrix.....: WATER
LCS Lot-Sample#: I2A170000-154
Prep Date.....: 01/15/02 Analysis Date...: 01/15/02
Prep Batch #....: 2017154
Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>
Benzene	115	(86 - 124)	SW846 8260B
Chlorobenzene	102	(80 - 115)	SW846 8260B
1,1-Dichloroethene	97	(64 - 120)	SW846 8260B
Toluene	102	(80 - 115)	SW846 8260B
Trichloroethene	104	(80 - 112)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	98	(75 - 133)
Toluene-d8	98	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
1,2-Dichloroethane-d4	96	(53 - 154)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I2A110164 Work Order #...: ER3V11AC Matrix.....: WATER
LCS Lot-Sample#: I2A230000-150
Prep Date.....: 01/21/02 Analysis Date...: 01/21/02
Prep Batch #...: 2023150
Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	<u>METHOD</u>
Benzene	110	(86 - 124)	SW846 8260B
Chlorobenzene	99	(80 - 115)	SW846 8260B
1,1-Dichloroethene	93	(64 - 120)	SW846 8260B
Toluene	101	(80 - 115)	SW846 8260B
Trichloroethene	87	(80 - 112)	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
4-Bromofluorobenzene	115	(75 - 133)
Toluene-d8	105	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
1,2-Dichloroethane-d4	103	(53 - 154)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I2A110164

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Chloride	94	Work Order #: ERLKX1AC (80 - 120)	LCS Lot-Sample#: I2A110000-278 MCAWW 300.0A	01/11/02	2011278
		Dilution Factor: 1			
Chloride	94	Work Order #: ERPNJ1AC (80 - 120)	LCS Lot-Sample#: I2A160000-173 MCAWW 300.0A	01/16/02	2016173
		Dilution Factor: 1			
Nitrate	95	Work Order #: ERLK11AC (80 - 120)	LCS Lot-Sample#: I2A110000-280 MCAWW 300.0A	01/11/02	2011280
		Dilution Factor: 1			
Sulfate	96	Work Order #: ERLKQ1AC (80 - 120)	LCS Lot-Sample#: I2A110000-284 MCAWW 300.0A	01/11/02	2011284
		Dilution Factor: 1			
Sulfate	95	Work Order #: ERPNK1AC (80 - 120)	LCS Lot-Sample#: I2A160000-172 MCAWW 300.0A	01/16/02	2016172
		Dilution Factor: 1			
Total Alkalinity	98	Work Order #: ERMVP1AC (80 - 120)	LCS Lot-Sample#: I2A150000-194 MCAWW 310.1	01/15/02	2015194
		Dilution Factor: 1			
Total Dissolved Solids	97	Work Order #: ERNKR1AC (87 - 113)	LCS Lot-Sample#: I2A150000-344 MCAWW 160.1	01/15-01/18/02	2015344
		Dilution Factor: 1			

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #....: I2A110164

Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP- BATCH #
Arsenic	105	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	105	(80 - 120)	0.19 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Barium	106	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	106	(80 - 120)	0.12 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Cadmium	108	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	107	(80 - 120)	0.98 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Calcium	111	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	110	(80 - 120)	0.47 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Chromium	108	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	107	(80 - 120)	0.65 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Lead	107	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	107	(80 - 120)	0.39 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Magnesium	110	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	109	(80 - 120)	0.24 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Selenium	107	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	108	(80 - 120)	0.44 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Silver	105	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	104	(80 - 120)	0.31 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				
Sodium	105	(80 - 120)		SW846 6010B	01/15-01/22/02	2015295
	99	(80 - 120)	6.1 (0-20)	SW846 6010B	01/15-01/22/02	2015295
		Dilution Factor: 1				

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Lot-Sample #...: I2A110164

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	<u>RPD</u> <u>RPD</u>	<u>LIMITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP-</u> <u>BATCH #</u>
Mercury	99	(81 - 120)			SW846 7470A	01/17-01/18/02	2017344
	99	(81 - 120)	0.40	(0-21)	SW846 7470A	01/17-01/18/02	2017344

Dilution Factor: 1

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I2A110164 Work Order #...: ERJDRIAD-MS Matrix.....: WATER
 MS Lot-Sample #: I2A110189-009 ERJDRIAE-MSD
 Date Sampled...: 01/09/02 19:40 Date Received...: 01/11/02
 Prep Date.....: 01/15/02 Analysis Date...: 01/16/02
 Prep Batch #...: 2017154
 Dilution Factor: 100

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	118	(86 - 124)			SW846 8260B
	109 p	(86 - 124)	7.5	(0-6.0)	SW846 8260B
Chlorobenzene	105	(80 - 115)			SW846 8260B
	98	(80 - 115)	7.2	(0-11)	SW846 8260B
1,1-Dichloroethene	102	(64 - 120)			SW846 8260B
	93 p	(64 - 120)	9.4	(0-8.0)	SW846 8260B
Toluene	108	(80 - 115)			SW846 8260B
	98	(80 - 115)	10	(0-11)	SW846 8260B
Trichloroethene	108	(80 - 112)			SW846 8260B
	101	(80 - 112)	6.3	(0-7.0)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	98	(75 - 133)
	97	(75 - 133)
Toluene-d8	101	(86 - 126)
	97	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
	98	(76 - 130)
1,2-Dichloroethane-d4	97	(53 - 154)
	96	(53 - 154)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I2A110164 Work Order #...: ERQP91AG-MS Matrix.....: WATER
 MS Lot-Sample #: I2A160224-001 ERQP91AH-MSD
 Date Sampled...: 01/15/02 13:30 Date Received...: 01/16/02
 Prep Date.....: 01/21/02 Analysis Date...: 01/21/02
 Prep Batch #...: 2023150
 Dilution Factor: 25

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	116	(86 - 124)			SW846 8260B
	110	(86 - 124)	4.5	(0-6.0)	SW846 8260B
Chlorobenzene	105	(80 - 115)			SW846 8260B
	102	(80 - 115)	3.0	(0-11)	SW846 8260B
1,1-Dichloroethene	101	(64 - 120)			SW846 8260B
	95	(64 - 120)	6.2	(0-8.0)	SW846 8260B
Toluene	108	(80 - 115)			SW846 8260B
	103	(80 - 115)	4.5	(0-11)	SW846 8260B
Trichloroethene	92	(80 - 112)			SW846 8260B
	89	(80 - 112)	3.6	(0-7.0)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	114	(75 - 133)
	117	(75 - 133)
Toluene-d8	106	(86 - 126)
	105	(86 - 126)
Dibromofluoromethane	99	(76 - 130)
	99	(76 - 130)
1,2-Dichloroethane-d4	103	(53 - 154)
	103	(53 - 154)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I2A110164

Matrix.....: WATER

Date Sampled...: 12/23/01

Date Received...: 12/31/01

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Chloride			WO#:	ERH3H1A1-MS/ERH3H1A2-MSD	MS Lot-Sample #:	I2A110164-002	
	110	(75 - 125)			MCAWW 300.0A	01/16/02	2016173
	104	(75 - 125)	2.3	(0-20)	MCAWW 300.0A	01/16/02	2016173
			Dilution Factor: 5				
Chloride			WO#:	ERH381A3-MS/ERH381A4-MSD	MS Lot-Sample #:	I2A110164-010	
	101	(75 - 125)			MCAWW 300.0A	01/11/02	2011278
	104	(75 - 125)	0.99	(0-20)	MCAWW 300.0A	01/11/02	2011278
			Dilution Factor: 1				
Nitrate			WO#:	ERH381A5-MS/ERH381A6-MSD	MS Lot-Sample #:	I2A110164-010	
	102	(75 - 125)			MCAWW 300.0A	01/11/02	2011280
	103	(75 - 125)	0.66	(0-20)	MCAWW 300.0A	01/11/02	2011280
			Dilution Factor: 1				
Sulfate			WO#:	EQ58V1AJ-MS/EQ58V1AK-MSD	MS Lot-Sample #:	I1L310110-001	
	102	(75 - 125)			MCAWW 300.0A	01/16/02	2016172
	101	(75 - 125)	0.65	(0-20)	MCAWW 300.0A	01/16/02	2016172
			Dilution Factor: 1				
Sulfate			WO#:	ERH3H1A3-MS/ERH3H1A4-MSD	MS Lot-Sample #:	I2A110164-002	
	108	(75 - 125)			MCAWW 300.0A	01/16/02	2016172
	105	(75 - 125)	1.7	(0-20)	MCAWW 300.0A	01/16/02	2016172
			Dilution Factor: 5				
Sulfate			WO#:	ERH381A1-MS/ERH381A2-MSD	MS Lot-Sample #:	I2A110164-010	
	100	(75 - 125)			MCAWW 300.0A	01/11/02	2011284
	100	(75 - 125)	0.55	(0-20)	MCAWW 300.0A	01/11/02	2011284
			Dilution Factor: 1				

NOTE(S):

 Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I2A110164

Matrix.....: WATER

Date Sampled...: 01/10/02 14:20 Date Received...: 01/11/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: I2A110164-001 Prep Batch #...: 2015295						
Arsenic	100	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281A5
	104	(75 - 125) 2.8	(0-20)	SW846 6010B	01/15-01/22/02	ERH281A6
		Dilution Factor: 1				
Barium	101	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281A7
	111	(75 - 125) 2.8	(0-20)	SW846 6010B	01/15-01/22/02	ERH281A8
		Dilution Factor: 1				
Cadmium	101	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281CC
	107	(75 - 125) 6.0	(0-20)	SW846 6010B	01/15-01/22/02	ERH281CD
		Dilution Factor: 1				
Calcium	NC	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281A9
	NC	(75 - 125)	(0-20)	SW846 6010B	01/15-01/22/02	ERH281CA
		Dilution Factor: 1				
Chromium	101	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281CE
	106	(75 - 125) 5.2	(0-20)	SW846 6010B	01/15-01/22/02	ERH281CF
		Dilution Factor: 1				
Lead	102	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281A1
	105	(75 - 125) 3.0	(0-20)	SW846 6010B	01/15-01/22/02	ERH281A2
		Dilution Factor: 1				
Magnesium	104	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281CG
	119	(75 - 125) 5.2	(0-20)	SW846 6010B	01/15-01/22/02	ERH281CH
		Dilution Factor: 1				
Selenium	104	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281CL
	104	(75 - 125) 0.58	(0-20)	SW846 6010B	01/15-01/22/02	ERH281CM
		Dilution Factor: 1				
Silver	103	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281A3
	107	(75 - 125) 4.1	(0-20)	SW846 6010B	01/15-01/22/02	ERH281A4
		Dilution Factor: 1				
Sodium	NC	(75 - 125)		SW846 6010B	01/15-01/22/02	ERH281CJ
	NC	(75 - 125)	(0-20)	SW846 6010B	01/15-01/22/02	ERH281CK
		Dilution Factor: 5				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: I2A110164

Matrix.....: WATER

Date Sampled...: 01/15/02 18:30 Date Received...: 01/16/02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
-----------	---------------------	--------------------	-----	---------------	--------	-------------------------------	-----------------

MS Lot-Sample #: I2A160105-001 Prep Batch #...: 2017344

Mercury 61 N (75 - 125) SW846 7470A

01/17-01/18/02 ERPNF1AN

63 N (75 - 125) 3.2 (0-20) SW846 7470A

01/17-01/18/02 ERPNF1AP

Dilution Factor: 1

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: I2A110164

Work Order #...: ERGDA-SMP
ERGDA-DUP

Matrix.....: WATER

Date Sampled...: 01/09/02 13:40 Date Received...: 01/10/02

% Moisture.....: 100

Dilution Factor:

Initial Wgt/Vol:

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Alkalinity	517	510	mg/L	1.3	(0-20)	SD Lot-Sample #: I2A100158-001 MCAWW 310.1	01/15/02	2015194

Dilution Factor: 1

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: I2A110164 Work Order #....: ERH28-SMP Matrix.....: WATER
ERH28-DUP

Date Sampled....: 01/10/02 14:20 Date Received...: 01/11/02

% Moisture.....:

Dilution Factor:

Initial Wgt/Vol:

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Dissolved						SD Lot-Sample #: I2A110164-001		
Solids	1430	1430	mg/L	0.0	(0-20)	MCAWW 160.1	01/15/02	2015344

Dilution Factor: 1

Total Alkalinity		SD Lot-Sample #: I2A110164-010	
575	576	mg/L 0.19 (0-20)	MCAWW 310.1 01/15/02 2015194
		Dilution Factor: 1	

Chain of Custody Record

CHAIN OF CUSTODY NUMBER
\$0006994-001



Severn Trent Laboratories, Inc.

STL4149 (0700)

Client: **Marin Technologies** Project Manager: **Dan Erskine** Date: **01/03/2002**

Address: **10601 Lomas NE Ste 106** Telephone Number (Area Code)/Fax Number: **(505) 237-8440 / (505) 237-8656** Lab Location: **STL Austin**

City: **Albuquerque** State: **NM** Zip Code: **87112** Site Contact: **Dan Erskine**

Project Number/Name: **NG00006 Apex Compressor Stat.** Carrier/Waybill Number:

Contract/Purchase Order/Quote Number: **CONTRACT / PURCHASE ORDER # : 4500687582 Comprehensive GW Assess.** QUOTE: 38366

Sample I.D. Number and Description	Date	Time	Sample Type	Containers			Preservative	Condition on Receipt/Comments	Analysis											
				Volume	Type	No.			L	L	L	L	L	L	L	L	L	L	L	L
MU-1	1/10/02	1400	WATER	400ML	VIAL	3	1:1 HCL	3.8 C 1-11-02 ST												
			WATER	250ML	PLASTIC	1	COND HNO3	See CDC data												
			WATER	1000ML	PLASTIC	1	NONE													
MU-2		1320	WATER	400ML	VIAL	3	1:1 HCL													
			WATER	250ML	PLASTIC	1	COND HNO3													
MU-3		1345	WATER	1000ML	PLASTIC	1	NONE													
			WATER	400ML	VIAL	3	1:1 HCL													
			WATER	250ML	PLASTIC	1	COND HNO3													
			WATER	1000ML	PLASTIC	1	NONE													
MU-4		920	WATER	400ML	VIAL	3	1:1 HCL													
			WATER	250ML	PLASTIC	1	COND HNO3													
			WATER	1000ML	PLASTIC	1	NONE													

Special Instructions: **8260B TCL list; 6010B RCRA Metals + Na,Ca,Mg,CaII lab day shipped because NO3 has 48 hr HT**

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Turn Around Time Required: ☐ Normal ☒ Rush ☐ Other

QC Level: ☐ I. ☐ II. ☐ III.

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Project Specific Requirements (Specify): _____

(A fee may be assessed if samples are retained longer than 3 months)

1. Relinquished By: **[Signature]** Date: **1-3-01** Time: **1400** 1. Received By: **[Signature]** Date: **1-11-02** Time: **0830**

2. Relinquished By: _____ Date: _____ Time: _____ 2. Received By: **[Signature]** Date: **1-11-02** Time: **0830**

3. Relinquished By: _____ Date: _____ Time: _____ 3. Received By: _____ Date: _____ Time: _____

DISTRIBUTION: WHITE - Slavs with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Severn Trent Laboratories, In

100