

REPORTS

DATE: JUNE 2002



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

July 3, 2002

Mr. Wayne Price Oil Conservation Division 1220 S. St. Francis Santa Fe, NM 87505

JUL 0 9 2002 Environmental Bureau Oil Conservation Division

Subject: Report of Findings PCA Junction Facility Groundwater Investigation Carlsbad, New Mexico Maxim Project No. 1690021

Dear Mr. Price:

On behalf of Conoco Inc., Maxim Technologies, Inc. (Maxim) is pleased to submit the enclosed report of findings for the PCA Junction facility.

Maxim's investigation revealed that free product condensate is present in monitoring well MW-1 and that the five other monitoring wells on the site contain no detectable petroleum hydrocarbons. Based on currently available data, Maxim estimates that approximately 746 barrels of condensate may be present on the shallow groundwater table surface.

We look forward to your review and comment on this report. Should you have any questions, please do not hesitate to contact me at (505) 237-8440.

Sincerely,

MAXIM TECHNOLOGIES, INC.

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Robert M. Sengebush, R.G. Senior Project Manager

cc: Neal Goates, Conoco Mike Stubblefield, OCD Artesia

Enclosure: Report of Findings, PCA Junction Facility Groundwater Investigation

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Off Conservation Division **REPORT OF FINDINGS GROUNDWATER INVESTIGATION CONOCO PCA JUNCTION EDDY COUNTY, NEW MEXICO**

RECEIVED

JUL 0 9 2002 Environmental Bureau

Prepared for:

Conoco Remediation Technology Maxim Project No. 1690021



Prepared by:

Maxim Technologies, Inc. 10601 Lomas Blvd. NE, Suite 106 Albuquerque, NM 87112

June 25, 2002



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REPORT OF FINDINGS GROUNDWATER INVESTIGATION CONOCO PCA JUNCTION EDDY COUNTY, NEW MEXICO

1.0 INTRODUCTION

This report describes the methods and results of work performed by Maxim Technologies, Inc. (Maxim) to characterize groundwater at the Conoco Inc. (Conoco) PCA Junction facility, located approximately 15 miles northeast of Carlsbad, Eddy County, New Mexico (Figure 1). The site may be found on the Tower Hills North topographic map (U.S.G.S. 1985). Site installations consist of two 500-barrel condensate tanks surrounded by an earthen berm and incoming and outgoing gas pipelines. A chain link and barbwire fence encloses these installations. A 500-barrel steel storage tank is located on the southern portion of the site, outside of the fenced area. The site is being investigated to determine the extent of hydrocarbon impact to groundwater. This report summarizes the March 25 and April 9, 2002, activities and results.

1.1 Background

The PCA Junction facility was acquired by Conoco from LG&E Energy, Inc., of Hobbs, New Mexico, in November 2000. During the due diligence work conducted by Maxim in September 2000, three soil borings (B-1 through B-3) were advanced to depths ranging from 25 to 40 feet below ground surface (bgs). Groundwater was encountered between 22 and 23 feet bgs. Analysis of soil samples indicated that the 20-foot soil sample obtained from boring B-1 contained total petroleum hydrocarbons (TPH) (320 milligrams per kilogram [mg/kg] in exceedance of the New Mexico Oil Conservation Division (OCD) action levels. Analysis of groundwater "grab" samples collected from the borings indicated the concentrations of benzene, toluene, and xylenes in the sample from boring B-1 and the concentration of benzene in the sample obtained from boring B-2 exceeded OCD action levels.

The OCD was notified of this impact on December 2, 2000, by letter. Because this is a petroleum condensate storage facility, the subsequent groundwater investigation has been carried out under NMAC Rule 19, Exemption 19D(g) (Wayne Price OCD, verbal communication to Clyde Yancey).

During the week of May 7, 2001, Maxim installed three 2-inch-diameter PVC monitor wells around the condensate tanks. The well borings were continuously sampled during drilling and logged according to the Unified Soil Classification System. Soil samples were field screened with a photo-ionization detector (PID) to detect the presence of volatile organic vapors. Observations concerning soil types, lithologic changes, and the environmental condition of the encountered soils are presented in soil boring logs presented as Appendix A.

Groundwater samples were collected from the three monitor wells and analyzed for volatile organics compounds (VOCs) (EPA Method 8260B), polynuclear aromatic hydrocarbons (EPA Method 8270C), total dissolved solids (TDS), pH (EPA Method 136.3), major cations/anions and RCRA metals, all using EPA-approved methods and quality assurance/quality control (QA/QC) procedures. The sample taken from MW-1 exceeded the New Mexico Groundwater Standards for benzene, toluene, and xylenes.

1.2 Health and Safety

Maxim required safety and health procedures that were appropriate for the level of environmental hazard known to exist on this site. Randy Searcy, Conoco Safety Officer, was notified three days prior to the start of fieldwork. Conoco representative Pat Flores preformed a Job Safety Analysis (JSA) at each boring location. All contractors complied with Conoco's "Contractors Safety Manual" (revised 05/96). Level D Personal Protective Equipment (PPE) (including an outer layer of Nomex clothing, required by Conoco) was adequate for this activity. Personnel were equipped with respirators with organic vapor cartridges in the event of a sudden release of noxious fumes from the site. For further details, please refer to the site-specific Health and Safety Plan (HASP) prepared and amended for the PCA Junction site dated March 20, 2002.

1.3 Investigation-Derived Waste

Drill cuttings and purged groundwater were staged on the ground since PID readings did not exceed 100 parts per million (ppm), per the approved protocol of the OCD (Wayne Price, December 2001).

1.4 Topography, Geology and Hydrogeology

PCA Junction is located within the Clayton Basin and west of the Nimenim Ridge. Local topography is characterized by the presence of playa lakes and gently sloping hills (U.S.G.S., 1985). The site is located within a closed topographic depression that contains silt and clay washed in from surrounding areas. The unconsolidated sediments are underlain by evaporite deposits, including commercial deposits of potash, of Permian age. "Water wells in and near the depressions generally yield highly mineralized water which can be used, if at all, only for stock" (Hendrickson, G.E. and Jones, R.S., 1952).

2.0 SCOPE OF WORK

Results of the initial subsurface investigation indicated that additional investigation of the soil and groundwater conditions at the facility was warranted. Maxim proposed to define the horizontal and vertical extent of the hydrocarbon impact using a combination of soil vapor field screening and installation and sampling of additional monitoring wells. Report of Findings – Groundwater Investigation Conoco PCA Junction

During the week of March 25, 2002, Maxim returned to the site to complete a soil vapor survey and install additional monitoring wells. Approximately 2.14 feet of free product was discovered in MW-1 on March 25, 2002. The presence of free product in this well was communicated verbally to the OCD representative and to the Conoco representative on the site. Twenty-two soil borings were advanced for the purpose of soil vapor monitoring. Three permanent monitoring wells (MW-4, MW-5, and MW-6) were installed per OCD guidelines. Groundwater was encountered at approximately 23 feet bgs.

On April 9, 2002, Maxim returned to the site to obtain groundwater samples from five monitoring wells. The samples were to be analyzed for VOCs (EPA Method 8260B); chloride, nitrate, and sulfate (EPA Method 300.0A); TDS (EPA Method 160.1); alkalinity (EPA Method 310.1); mercury (EPA Method 7470A); and New Mexico Water Quality Control Commission (NMWQCC) metals (EPA Method 6010B). MW-1, the well containing the free product, was not sampled.

2.1 Soil Vapor Borings

The investigation program entailed the installation of 22 shallow borings (approximately 20 feet deep) for the detection of VOCs within the headspace atmosphere in the boring. The boring locations in the immediate vicinity of the fenced facility are shown on Figure 2. Each boring was covered with an aluminum disk and allowed to stand undisturbed for approximately one hour. After the waiting period, the covers were penetrated with the tip of the photo-ionization detector (PID) and a measurement taken of the organic vapors present within the boring.

The concentrations of organic vapors in the borings were plotted on a field map. Borings to the south and southwest of the facility's area showed no detectable presence of hydrocarbon vapors. As the boring locations approached the site area but did not contain any detectable hydrocarbon vapors, Maxim decided to extend the borings several feet to groundwater in an effort to obtain hydrocarbon vapors that would define the extent of the hydrocarbon plume. Thus, borings SVB-16 through 22 were drilled to groundwater and are labeled "H2O" on Figure 2. The borings that were drilled to groundwater (at approximately 22 feet bgs) form an intermediate "clean" boundary between the known free product in MW-1 and the monitoring wells. Specifically, soil vapor borings 16 and 17 each contained a trace of hydrocarbon vapors (less than 100 ppm) and provide a southern boundary of the plume, while borings 18, 19 and 20 establish a clean northern boundary for the plume. The plume extent on the north was interpreted to be located approximately half way between MW-1 and borings 18, 19, and 20.

After the borings served the purpose of tracking the groundwater impact, each boring was plugged with bentonite chips and native soil so that no boring was left open for more than one day.

The soil encountered during boring activities consists of light yellowish-orange to light reddish-orange, silty sand with white caliche layers between 1 and 10 feet and 15 and 20 feet bgs. Below 20 feet the soil is reddish-orange clayey sand with reddish-orange clay and reddish-orange and greenish-gray, mottled siltstone occurring between 24 and 31 feet bgs. This

siltstone bed may be a continuous "marker bed", as it was encountered in several of the borings near the facility. The boring logs are included as Appendix A. Cross section A-A' is presented in Figure 3.

2.2 Monitoring Wells MW-4, MW-5 and MW-6

The interpretation of the lateral extent of hydrocarbon impact was confirmed with installation of monitoring wells MW-4, MW-5, and MW-6. The objective of installing the wells was to characterize the groundwater flow direction and identify the upgradient and downgradient boundaries of the plume, as well as the petroleum concentrations in groundwater within the body of the plume. The locations were selected based on the results of the soil vapor survey, subject to the limitations of the soil vapor data, and on the plan to position wells on all sides of the known impacted location (MW-1). The borings for the wells were logged for sediment type or lithology, and the drill cuttings were tested with a PID to determine the presence of hydrocarbons. Soil samples were not collected since PID measurements did not warrant analysis.

The monitoring wells were completed using 15 feet of screen with approximately 10 feet of screen in groundwater and 5 feet above the water table to accommodate seasonal changes in groundwater elevation. A sand pack was set in the annulus around the well screen from the bottom of the hole to approximately 2 feet above the top of the screen. A hydrated bentonite plug was placed above the sand pack, and the remainder of the hole was filled with hydrated bentonite chips. The surface completions consist of a concrete pad and locking metal protective casing. The wells stick up approximately 2.5 feet above the concrete pad. Well completion diagrams are included in Appendix A.

The wells were developed using a bailer. Development water was placed on the ground surface since PID measurements did not indicate a need to containerize the water. The location and elevation of the top of the PVC casing of each well (including wells MW-1, MW-2 and MW-3 installed previously) were surveyed by a licensed surveyor on April 9, 2002. A table of well design specifications, top-of-casing elevations and groundwater elevations are presented in Table 1.

2.3 Groundwater Sampling

Water level measurements were taken prior to sampling. The water level measurements were converted from top-of-casing measurements to elevation measurements using elevation data from the well survey. The groundwater elevations are presented in Table 1. Groundwater elevation contours using the April 9, 2002, data are plotted on Figure 2.

The wells were purged by removing approximately three well volumes of water with an electric purge pump. The pump was thoroughly decontaminated between wells. Groundwater parameters were checked using a Hanna portable pH/specific conductivity/TDS/temperature meter. The samples were collected when these parameters stabilized. The samples were collected into laboratory-prepared containers and sent to Severn Trent Laboratories (STL) for

analysis of benzene, toluene, ethylbenzene and total xylenes (BTEX), alkalinity, TDS, chloride, nitrate, sulfate, mercury in liquid waste, and NMWQCC metals. The QA/QC procedure consisted of collecting and analyzing one duplicate sample from MW-3.

3.0 GROUNDWATER ANALYTICAL RESULTS

The analytical results are presented in Table 2 and the complete analytical report is presented in Appendix B. MW-1 was not sampled because it contained approximately two feet of light, honey-colored hydrocarbon interpreted to be condensate. Groundwater samples from wells MW-2, MW-3, MW-4, MW-5 and MW-6 contained no detectable BTEX. The samples obtained from MW-2 through MW-6 contained levels of chloride, sulfate, nitrate, alkalinity, and TDS that are consistent with naturally occurring concentrations in groundwater, although the chloride concentration in MW-5 was significantly higher than in the other wells. All samples exhibited levels of NMWQCC metals below laboratory detection limits and/or below the NMWQCC standards. All samples collected contained no detectable mercury.

4.0 CONCLUSIONS

According to the analytical results, there is no evidence of hydrocarbons in the monitoring wells on the site except in MW-1, which contains free product. MW-2, MW-3, and MW-5 are upgradient from MW-1. MW-4 is sidegradient and MW-6 is downgradient from MW-1. The aquifer conditions encountered during drilling of wells MW-4, MW-5 and MW-6 suggest that the aquifer is only a few feet thick and is underlain by a semi-impermeable clayey silt layer. The groundwater flow direction is to the northwest with a gradient as interpreted from water levels in the six wells of 0.00175 foot per foot. The thinness of the water-bearing zone and the nearly flat gradient suggest that the aquifer may be a discontinuous perched water zone within a localized, closed basin. This is further supported by surface topographic evidence, which depicts numerous closed basins and small playa lakes in the vicinity of the site. In such a hydrogeologic environment, groundwater zones do not actually flow, as they do in more extensive water table aquifers, and thus the hydrocarbon plume would remain essentially stationary in the vicinity of the source, presumably the condensate tanks. This interpretation could account for the findings that the free product has not migrated downgradient as far as MW-6.

Figure 4 depicts the possible aerial extent of the hydrocarbon plume beneath the site. The extent shown is interpreted as extending halfway to the downgradient and sidegradient wells (including soil borings that encountered groundwater but did not contain hydrocarbon vapors). This estimate is conservative in that the halfway rule is arbitrary but honors the existing data. There may be more or less free product actually present.

The estimated condensate volume was calculated as follows:

| • | Aerial extent of plume: | 16,777 ft ² |
|---|--|--------------------------|
| • | Thickness o lens-shaped plume: | Effective thickness 1 ft |
| • | Formation porosity: | 25% |
| • | Conversion ft ³ to gallons: | 7.48 gal/ft ³ |

The estimated condensate volume is 31,373 gallons or approximately 746 barrels.

5.0 **RECOMMENDATIONS**

Maxim recommends installing a free product recovery system to remove the condensate. The system would most likely consist of a skimmer pump and tank (or series of tanks) that would recover the free product at a relatively low rate so as not to completely deplete the perched aquifer. In addition, the six wells should be sampled periodically to track possible plume migration.

Maxim has completed a preliminary evaluation of recovery systems that would be compatible with the depth, product thickness and power availability at PCA Junction. Upon Conoco's approval of the product recovery system concept, Maxim will proceed with engineering design, cost estimates, system purchase and field installation.

6.0 **REFERENCES**

Hendrickson, G.E., and Jones, R.S., 1952, *Geology and Ground-Water Resources of Eddy County, New Mexico*. New Mexico Bureau of Mines and Mineral Resources, Groundwater Report 3.

U.S. Geological Survey, Tower Hill North 7.5 Minute Topographic Map, 1985.

TABLES

TABLE 1

CONOCO PCA JUNCTION FACILITY GROUNDWATER ELEVATIONS AND WELL SPECIFICATIONS

| | | | | 0.010 | | | | | | | |
|---------|---------|------------|----------------------|---------|----------|---------------------|------------------|------------|------------|-----------|-------------------|
| | | | | in.slot | | | | | | | Groundwater |
| | | Total | Screen | Screen | Casing | Elevation to | Elevation to | Depth to | Depth to | Product | Elevation |
| | | Depth | interval | Length | Diameter | Concrete Pad | Top of Casing | Water | Product | Thickness | (TOC) (feet above |
| Well ID | Date | (feet bgs) | (feet bgs) | (feet) | (inches) | (feet above msl) | (feet above msl) | (feet TOC) | (feet bgs) | (feet) | (Ism |
| | 5/9/01 | | | | | | | 23.1 | NA | NA | #VALUE! |
| MW-1 | 5/29/01 | 26 D | 16 <u>-</u> 26 | 10 | ç | 3010 36 | 3212.13 Delow | 23.25 | NA | NA | #VALUE! |
| | 3/25/02 | 20.0 | 07-01 | 2 | 1 | 00:21 20 | completion | 25.82 | 23.68 | 2.14 | 3187.84* |
| | 4/9/02 | | | | | | | 25.85 | 23.71 | 2.14 | 3187.81* |
| | 5/9/01 | | | | | | 2011 1.2 | 21.7 | NA | NA | #VALUE! |
| | 5/29/01 | 28.05 | 18 05-28 05 | 10 | ç | 3211 20 | | 21.8 | NA | NA | #VALUE! |
| | 3/25/02 | 20.07 | 00.07 00.01 | 2 | 1 | 07:1170 | completion | 22.87 | NA | NA | #VALUE! |
| | 4/9/02 | | | 1.00 | | | | 22.91 | NA | NA | #VALUE! |
| | 5/9/01 | | | | | | 2210 48 holo | 21.2 | NA | NA | #VALUE! |
| MW-3 | 5/29/01 | 28.25 | 18 25 <u>-</u> 28 25 | 10 | ç | 3210 B | 32 10.40 DEIOW | 21.29 | NA | NA | #VALUE! |
| | 3/25/02 | 20:52 | 07:07 07:01 | 2 | 1 | 0.0140 | completion | 22.3 | NA | NA | #VALUE! |
| | 4/9/02 | | - | | | | | 22.35 | NA | NA | #VALUE! |
| MW_4 | 3/28/02 | 36.3 | 213-363 | 15 | ν | 3211 78 | 3213 QG | 26.95 | NA | NA | 3187.01 |
| | 4/9/02 | 0.00 | 0.00 0.1 4 | 2 | F | 051110 | 00:01 30 | 26.18 | NA | NA | 3187.78 |
| MW-5 | 3/28/02 | 37.6 | 22 6-37 G | 15 | P | 3214 36 | 3216.23 | 28.17 | NA | NA | 3188.06 |
| | 4/9/02 | 0.10 | | 2 | F | 0517:00 | 01-01-20 | 28.25 | NA | NA | 3187.98 |
| AWM.FG | 3/28/02 | 36 75 | 21 75-36 75 | 15 | 4 | 3212 42 | 3214 24 | 26.61 | NA | NA | 3187.63 |
| | 4/9/02 | 0 | | 2 | - | 05 15:15 | 13:11:20 | 26.67 | NA | NA | 3187.57 |
| | | | | | | | | | | | |

bgs = below ground surface

TOC = Top of Well Casing

mst = mean sea level * = Product thickness multiplied by product density factor of 0.73 to obtain estimated water level

Groundwater Report PCA Junction

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GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE 2 PCA JUNCTION SITE

| F | | | | | | | | | | |
|---|----------------------|----------|----------|----------|-----------|----------|----------|--------------|--------------------|------------------|
| | NMWQCC (Stand | MW-6 | MW-5 | MW-4 | Duplicate | MW-3 | MW-2 | | Sample Location | |
| | }roundwater lards | 04/09/02 | 04/09/02 | 04/09/02 | 04/02/02 | n//no/n7 | 04/09/02 | | Date Sampled | |
| | 0.01 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | Benzene | | |
| | 0.75 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | Toluene | SW84 | |
| | 0.75 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | <0.0010 | Ethylbenzene | 6 8260B | |
| | 0.62 | <0.0020 | <0.0020 | <0.0020 | <0.0020 | <0.0020 | <0.0020 | Xylenes | | |
| | 0.002 | <0.00020 | <0.00020 | <0.00020 | NA | <0.00020 | <0.00020 | Mercury | SW846 7470A | |
| | 0.05 | <0.0050 | <0.0050 | <0.0050 | NA | <0.0050 | <0.0050 | Silver | | |
| | 0.1 | <0.010 | <0.010 | <0.010 | NA | <0.010 | <0.010 | Arsenic | | |
| | 1.0 | <0.20 | <0.20 | <0.20 | NA | <0.20 | <0.20 | Barium | Trac | |
| | NE | 652 | 943 | 716 | NA | 846 | 1200 | Calcium | e Inductively | Results R |
| | 0.01 | <0.0020 | <0.0020 | <0.0020 | NA | <0.0020 | <0.0020 | Cadmium | Coupled Play | eported in Pa |
| | 0.05 | <0.0050 | <0.0050 | <0.0050 | NA | <0.0050 | <0.0050 | Chromium | sma (ICP) M | rts Per Milli |
| | NE | 43.4 | 301 | 40.7 | NA | 11.5 | 111 | Magnesium | etals SW846 | on (mg/L) |
| | NE | 10.5 | 291 | 10.5 | NA | 12.3 | 104 | Sodium | 6010B | |
| | 0.05 | 0.011 | 0.0096 | 0.0034 | NA | 0.0090 | 0.014 | Lead | | |
| | • | 6 | 0 | 0 | | 0 | 0 | Sel | | |

MW= Monitoring WellEPA= Environmental Protection AgencySW846= "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods",Third Edition, Movember 1986 and its updatesMCAWW= "Methods for Chemical Analysis of Water and Wastes",EPA-600/4-79-020, March 1983 and subsequent revisionsNMWQCC= New Mexico Water Quality Control CommissionNA= Not AnalyzedNE= Not established by NMWQCCTDS= Total Dissolved SolidsNote: Monitoring Well MW-1 contained 2.14 feet of free product on 3/25/02.

PCA Junction soil and groundwater report

| .05 | .0050 | 029 | ,017 | VA | .010 | .040 | enium | | | | |
|-----|-------|------|------|----|------|------|------------|----------------|------|------|--|
| NE | 120 | 1410 | 211 | NA | 255 | 475 | Chloride | М | | | |
| NE | 5.2 | 14.0 | 7.7 | NA | 9.5 | 36.9 | Nitrate | CAWW 300. | | | |
| NE | 1370 | 1710 | 1360 | NA | 1320 | 1720 | Sulfate | 0A | | | |
| NE | 81.6 | 68.1 | 107 | NA | 91.5 | 74.7 | Alkalinity | MCAWW 310.1 | | | |
| NE | 2660 | 5780 | 2930 | NA | 3160 | 3940 | TDS | MCAWW 160.1 | | | |

FIGURES

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APPENDIX A

Monitoring Well Completions and Boring Logs

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EXPLORATORY BORING LOG MW-1

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| Ĺ | Boring Termi 1690021/1 | 10 | MAXI | M EXPLOR | ATOR | Y BC | RING LO | DG | M١ | N-1 | <u></u> | |
|--------------|---|---|---|-----------------------------------|--|--|--|---|--|---|----------------------------|----------------------|
| | | | | | | ч - Х., | | | | | | |
| 3190 3185 | 5.0- | SWL-2 SAND Thread Botton | 23.25' bgs PACK ded n Cap | CLAY, red SAND, red | | CL SC | | | | | 0 | - - - 25 |
| | ELEVATION (msi) - ft SAMPLE INTERVAL/ID # | | | CLASSIFICATION AND DESCRIPTION | N | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | PID RESULT (ppm) | DEPTH (bgs) - ft |
| | Measuring Po Measuring Po Static Water L Well Develop Well Cap: <u>2" f</u> | int Description (n int Elevation (ms evel: 3187.33' m ment: PVC Bailer lush mounted loc | nsl): Top of C l): 3212.13 nsl king cap with b | WELL COMPLET | ION INFO | RMATIO Type of Casing Slot Siz | N f Casing: Diameter: in ze:0.010 | ches | | | | |
| | PROJECT NA LOCATION: | ME: Maxim #169 PCA Junction | 00021/110 - очебнено сочение заклас фолост иле заклас фолост этте фолост этте фолост этте фолост этте фолост фолос фолост фолост фолост фолост фолос фолос фолос фолос фолос фолос фолос фолос фолос фолос фолос фолос фолос фолос фоло | MW-5 | MON FIELI GRO DRIL BORI DRIL DATE REM | ITORING D LOGG (ATION: UNDWA' L TYPE E HOLE LED BY: E: HOLE E: COMP ARKS: | B WELL NO. <u>M</u> ED BY: <u>F</u> . GROUND SUR TER ELEVATIO Air Rotary DIAMETER: Scarborough D STARTED: LETED: bgs=below gro ND=Not Detect ND=Not Applic msl = mean se | W-1 Lichno FACE DN (ms 5 5 rilling ound s cted, N cable, I cable, I cable, I | 5/8/ 5/8/ 5/8/ 5/8/ 00000000000000000000 | 3212.3 3187.5 01 01 Sampl x Recc | i6 msl i6 msl i6 msl | (ft) (ft) (in) |
| ٦ | | <u> </u> | | | | | | | | | | |

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1690021/110

MAXIM

EXPLORATORY BORING LOG

MW-2



Boring Terminated at 28' bgs

MAXIM

1690021/110

EXPLORATORY BORING LOG MW-2



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| PROJECT NAME: Maxim #169 LOCATION: PCA Junction | 0021/110 - OVERNEAD SERVICE | Бала Колта ж - 5 | MONITORIN FIELD LOGG ELEVATION GROUNDW/ DRILL TYPE BORE HOLE DRILLED BY DATE: HOLI DATE: COMI REMARKS: | G WELL NO. M SED BY: F GROUND SUF ATER ELEVATION ATER ELEVATION ATER ELEVATION DIAMETER: Scarborough E STARTED: DLETED: bgs=below gr ND=Not Dete NA=Not Applit msl = mean s | IW-3 Lichno RFACE ON (ms 5 Drilling ound so cted, N cable, lea leve | 5/8/ 5/8/ 5/8/ 5/8/ 01/12 0000000000 | 3210.8 3189.4 01 01 Sampl ot Reco | e brded | (ft) (ft) (in) |
|---|---|-----------------------------------|---|--|---|---|--|------------------|-------------------------------------|
| Measuring Point Description (m Measuring Point Elevation (ms Static Water Level: <u>3189.14' m</u> Well Development: <u>PVC Bailer</u> Well Cap: 2" flush mounted loc | isl): Top of Casing): 3210.48' msl sl king cap with bolted m | WELL COMPLETIO | IN INFORMATIC Type of Casing Slot S | on of Casing:PVC g Diameter:2 in ize:0.010 | nches | | | | |
| H COMPLETI H COMPLETI UIAGRAM H - (Isu) H - UIAGRAM | ON () 1 | CLASSIFICATION AND DESCRIPTION | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | PID RESULT (ppm) | DEPTH (bgs) - ft |
| 90.0- SWL-2 FOG-2 85.0- Thread Botton | P1.83' bgs P2' bgs PACK fed n Cap | ID, red, wet at 22 feel | bgs SM | | | | | 84.4 54.4 | - 20 - - - - 25 - |
| | | | | | | | | | |
| Boring Torreits and at 2011 | | | | | | | | | |
| 1690021/110 | | EXPLORA | TORY BO | DRING L | OG | M١ | N-3 | | |

Page 1 of 2



EXPLORATORY BORING LOG

MW-4

Boring Terminated at 35' bgs

MAXIM

Page 2 of 2



Boring Terminated at 35' bgs



Page 2 of 2



EXPLORATORY BORING LOG

MW-5

Boring Terminated at 39.5' bgs

MAXIM



EXPLORATORY BORING LOG **MW-6**

Page 2 of 2



EXPLORATORY BORING LOG

MW-6

Boring Terminated at 39.5' bgs MAXIM 1690021/110

| PROJECT N | IAME: Maxim #1690021/110 PCA Junction | | R BORING NO. | | SVB | -1 | | |
|--|---|-------------------------------------|---|--------------------------|-------|------------|--------------------|---------------------|
| DRILLED BY | r: Harrison & Cooper Drilling | FIELD LOG | GED BY: K.H | lender | son | | | |
| DATE HOLE DATE ABAN REMARKS: | DRILLED: 3/26/02 DONED: 3/26/02 bgs = below ground surface NS=Not Sampled NA=Not Applicable | GROUNDWA DRILL TYPE BORE HOLE | ATER LEVEL (b Air Rotary Intersol Rand DIAMETER: | ogs): d TH-6(8.25 | D | ot Enc | ountere | (in) |
| DEPTH (bgs) - ft SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
| 0.0 | SAND, silty, fine grained, very loose, light brown | SM | NA | NS | 945 | NA | *0.0 | - 5 |
| 10.0 - | SAND, trace silt and clay, yellowish-orange, well so | orted | | | | | | - 10 |
| | · · · · · · · · · · · · · · · · · · · | | | | 952 | | | |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
OG SVB-1

EXPLORATORY BORING LOG

PROJECT NAME: Maxim #1690021/110 SVB-2 SOIL VAPOR BORING NO. LOCATION: PCA Junction DRILLED BY: Harrison & Cooper Drilling K.Henderson FIELD LOGGED BY: 3/26/02 DATE HOLE DRILLED: DATE ABANDONED: 3/26/02 Not Encountered (ft) GROUNDWATER LEVEL (bgs): REMARKS: bgs = below ground surface NS=Not Sampled DRILL TYPE: Air Rotary NA=Not Applicable Intersol Rand TH-60 (in) BORE HOLE DIAMETER: 8.25 PID RESULT (ppm) USCS SYMBOL BLOW COUNT ## RECOVERY ANALYTICAL SAMPLE INTERVAL/ID # DEPTH (bgs) - ft **CLASSIFICATION** TIME AND DESCRIPTION % 0 SAND, silty, fine grained, very loose, light brown NA 1005 NA *0.0 NS SM 5 CALICHE, white

SP

EXPLORATORY BORING LOG

Boring Terminated at 19.5' bgs

SAND, trace silt and clay, reddish-brown to yellowish-

MAXIM

orange, well sorted

1690021/110

DEPTH (bgs) - ft

0.0

5.0

10.0

15.0

* Soil Vapor Montoring Result SVB-2

1010

10

| PROJECT NAME: Maxim #1690021/110 | SOIL VAPOR BORING NOSVB-3 |
|--|---|
| DRILLED BY: Harrison & Cooper Drilling | FIELD LOGGED BY: K.Henderson |
| DATE HOLE DRILLED. 3/26/02 REMARKS: bgs = below ground surface NS=Not Sampled NA=Not Applicable | GROUNDWATER LEVEL (bgs): Not Encountered (ft) DRILL TYPE: Air Rotary Intersol Rand TH-60 |
| | BORE HOLE DIAMETER: 8.25 (in) |
| # CLASSIFICATION H1 - (s6q) # (s6q) | USCS SYMBOL USCS SYMBOL BLOŴ COUNT ANALYTICAL TIME % RECOVERY * PID RESULT (ppm) DEPTH (bgs) - ft |
| 0.0 SAND silty fine grained very loose light brow | wn 0 |
| 5.0 - CALICHE, white, hard | SM NA NS 1025 NA *0.0 |
| | |
| 15.0 - SAND, trace silt and clay, reddish-brown to ye orange, well sorted | ellowish- SP 1030 |

EXPLORATORY BORING LOG

MAXIM

* Soil Vapor Montoring Result SVB-3

Page 1 of 1

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Page 1 of 1

| PROJECT NAME: Maxim #1690021/110 | | | SOIL VAPOR BORING NOSVB-4 | | | | | | | | |
|---|--|--|---|-------------|------------|------------|------|------------|--------------------|-------|--|
| | DRILLED BY: Harrison & Cooper Drilling | | - FIELD LOGGED BY: K.Henderson | | | | | | | | |
| DATE HOLE DRILLED: 3/26/02 DATE ABANDONED: 3/26/02 REMARKS: bgs = below ground surface NS=Not Sampled NA=Not Applicable | | | GROUNDWATER LEVEL (bgs): Not Encountered (DRILL TYPE: Air Rotary Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 | | | | | | | | |
| DEPTH (bgs) - ft | SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH | |
| 0 - | | SAND, silty, fine grained, very loose, light brown orange, some caliche CALICHE, white, hard | to reddish- | SM | NA | NS | 1145 | NA | *0.0 | | |
| D.O - | | | | | | | | | | | |
| 5.0 - | | CALICHE, white, hard, reddish-orange sand | | | | | 1200 | | | | |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
OG SVB-4

EXPLORATORY BORING LOG

SVB-5 SOIL VAPOR BORING NO. K.Henderson FIELD LOGGED BY: Not Encountered (ft) GROUNDWATER LEVEL (bgs): DRILL TYPE: Air Rotary Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 \sim

| HLdggg HLdggg HLdgg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdggg HLdgggg HLdgggg HLdgggg HLdggggg HLdgggggggggg | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppr | DEPTH (bgs) - ft |
|---|-------------|------------|------------|------|------------|-------------------|---------------------|
|---|-------------|------------|------------|------|------------|-------------------|---------------------|

| 0.0 | SAND, silty, fine grained, very loose, light brown | SM | | | | | | F° |
|--------|--|----|----|----|------|----|------|----------|
| - | CALICHE, white | | NA | NS | 1215 | NA | *0.0 | - |
| 5.0 - | SAND, silty, clayey, fine grained, reddish-orange | - | | | | | | - - 5 |
| | | | | | | | | - |
| | | SM | | | | | | |
| 10.0 - | | | | | | | | - 10 |
| | | | | | | | | - |
| 15.0 - | CALICHE, white, hard | | | | | | | - 15 |
| | • SAND, clayey, silty, fine grained, reddish-orange, moist | | | | | | | F |
| | | sc | | | 1225 | | | F |

EXPLORATORY BORING LOG

Boring Terminated at 19.5' bgs

MAXIM

PROJECT NAME: Maxim #1690021/110

DRILLED BY: Harrison & Cooper Drilling

3/26/02

3/26/02

bgs = below ground surface

NS=Not Sampled

NA=Not Applicable

LOCATION: PCA Junction

DATE HOLE DRILLED: DATE ABANDONED:

REMARKS:

1690021/110

* Soil Vapor Montoring Result SVB-5

(in)
| PROJECT NAME: Maxim #1690021/110 | | | BORING NO. | | SVB- | .6 | | |
|---|------------------|-------------|-------------------|------------|------|------------|--------------------|--------------------------|
| DRILLED BY: Harrison & Cooper Drilling | _ FIELD | LOGGE | D BY: <u>K.</u> F | lender | son | | | |
| DATE HOLE DRILLED: 3/26/02 DATE ABANDONED: 3/26/02 REMARKS: bgs = below ground surface | - GROUI | | ER LEVEL (b | gs): | N | ot Enc | ountere | ed (ft) |
| NA=Not Applicable | | TTPE: | | | | | | |
| | - | | | | | | | |
| | BORE | HOLE | DIAMETER: | 8.25 | | | | |
| | | | | | | | | |
| HLdag | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
| | | | | | | | | |
| 0.0 SAND, silty, fine grained, very loose, light | brown at surface | SM | ····· | | | <u> </u> | [<u> </u> | Τ° |
| 5.0 - CALICHE, white, some sand | | | NA | NS | 1135 | NA | *0.3 | - 5 - |
| | | | | | | | | - - 10 - - - |
| 15.0 - SAND, trace silt, well sorted, reddish-oran | je s | SP | | | 1140 | | | - 15 - - |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result

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EXPLORATORY BORING LOG SVB-6

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| PROJECT LOCATION | NAME: Maxim #1690021/110 : PCA Junction | SOIL | . VAPOR | BORING NO. | | SVB- | 7 | | |
|--|--|-----------------------------------|----------------------------|--|-------------------------|-------|------------|--------------------|---------------------|
| | Y: Harrison & Cooper Drilling | FIEL | D LOGG | ED BY: <u>K.F</u> | lender | son | <u>.</u> | <u></u> | |
| DATE HOL DATE ABAI REMARKS: | NDONED: 3/26/02 bgs = below ground surface NS=Not Sampled NA=Not Applicable | GRO DRIL BOR | UNDWA L TYPE: E HOLE | TER LEVEL (b Air Rotary Intersol Rand DIAMETER: | gs): J TH-6(8.25 | D | | | ed (ft) (in) |
| DEPTH (bgs) - ft SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
|).0] [] | SAND, silty, fine grained, very loose, light brown | | SM | | | | | | ┬ ⁰ |
| 5.0 | | | | NA | NS | 1115 | NA | *0.0 | - - 5 - |
| | SAND, silty, fine grained, very loose, light brown | | | | | | | | F |
| 10.0 | | | SM | | | | | | - 1ı |
| | CALICHE, white, hard | · · · · · · · · · · · · · · · · · | | | | | ĺ | | - |
| 15.0 | SAND, trace silt, well sorted, reddish-orange | | ep | | | | | | - 1: - |
| | | | 55 | | | | |] | ŀ |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result

EXPLORATORY BORING LOG SVB-7

| DDO JECT NAME: Maxim #1600021/110 | | | | | | | | |
|--|-------------------------|-------------------------|---|----------------|-----------|------------|--------------------|------------------------------------|
| LOCATION: PCA Junction | | APOR | BORING NO_ | | SVB- | 8 | | |
| DRILLED BY: Harrison & Cooper Drilling DATE HOLE DRILLED: 3/26/02 DATE ABANDONED: 3/26/02 REMARKS: bgs = below ground surface NS=Not Sampled | FIELD GROUN DRILL | LOGGE NDWAT TYPE: | ED BY: K.H TER LEVEL (by Air Rotary | enders gs): | son No | ot Enco | ountere | d (ft) |
| NA=Not Applicable | | | Intersol Rand | TH-60 |) | | | |
| | BORE | HOLE | DIAMETER: | 8.25 | | | | (in) |
| HLdBQ HJ - (s6g) HJ - (s6g) HJ - (s6g) HLC AND DESCRIPTION | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
| 0.0 SAND, silty, fine grained, very loose, light brown CALICHE, white 5.0 SAND, silty, clayey, fine grained, very loose, red CALICHE, white, hard 10.0 15.0 | n s | SM | NA | NS | 1055 | NA | *0.0 | - 0 - 5 - 10 - 15 - 15 |
| | | | | | 1100 | | | - - |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

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* Soil Vapor Montoring Result
OG SVB-8

PROJECT NAME: Maxim #1690021/110 SVB-8A SOIL VAPOR BORING NO_ LOCATION: PCA Junction DRILLED BY: Harrison & Cooper Drilling K.Henderson FIELD LOGGED BY: 3/26/02 DATE HOLE DRILLED: DATE ABANDONED: 3/26/02 GROUNDWATER LEVEL (bgs): 25' bgs (ft) bgs = below ground surface REMARKS: NS=Not Sampled DRILL TYPE: Air Rotary NA=Not Applicable Intersol Rand TH-60 (in) 8.25 BORE HOLE DIAMETER: __ PID RESULT (ppm) SAMPLE INTERVAL/ID # **USCS SYMBOI** BLOW COUNT % RECOVERY ANALYTICAL DEPTH (bgs) - ft CLASSIFICATION DEPTH (bgs) - ft TIME AND DESCRIPTION 0.0 0 SAND, silty, fine grained, very loose, light brown SM CALICHE, white NA NS 1040 NA *NS 5.0 5 SAND, silty, clayey, fine grained, very loose, reddish-orange SM CALICHE, white, hard 10.0 10 15.0 15 20.0 20 SAND, trace silt and clay, fine grained, very loose, well sorted, reddish-orange, moist SP

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EXPLORATORY BORING LOG

Boring Terminated at 26' bgs

orange, moist

SAND, clayey, silty, fine grained, very loose, reddish-

MAXIM

1690021/110

25.0

* Soil Vapor Montoring Result
OG SVB-8A

1050

25

| PROJECT NAME: Maxim #1690021/110 LOCATION: PCA Junction | SOIL | VAPOR | BORING NO_ | | SVB- | 9 | | |
|---|-----------------------------|-----------------------------|---|-----------------------|-------|------------|--------------------|---------------------|
| DRILLED BY: Harrison & Cooper Drilling | - FIELD | LOGGI | ED BY: <u>K.H</u> | enders | son | | | |
| DATE HOLE DAILEED. 3/26/02 DATE ABANDONED: 3/26/02 REMARKS: bgs = below ground surface NS=Not Sampled NA=Not Applicable | - GROU - DRILL - BORE | INDWA [®] TYPE: | TER LEVEL (by Air Rotary Intersol Rand DIAMETER: | gs): TH-60 8.25 |) | ot Enco | ountere | ed (ft) (in) |
| HLdgg HLdgg) HLdgg) HLdggg HLdggg HLdgggg HLdgggg HLdgggg HLdggggg HLdgggggggggg | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
| 0.0 | prown | SM | NA | NS | 1335 | NA | *2.6 | - 0 |
| CALICHE, white, hard | | | | | | | | - - - - 10 |
| 15.0 | prown, moist | SM | | | | | | - - - 15 - |
| | | | | | 1340 | | | - |

Boring Terminated at 19.5' bgs

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1690021/110

* Soil Vapor Montoring Result

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SVB-9

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| PROJECT LOCATION | NAME: <u>Maxim #1690021/110</u> I: PCA Junction | SOIL | /APOR | BORING NO. | | SVB- | 10 | | |
|---------------------|---|----------------|-------|-------------------|---------|------|--------|---------|---------------------|
| | Y: Harrison & Cooper Drilling | FIELD | LOGG | ED BY: <u>K.H</u> | lenders | son | | | |
| DATE ABAI | NDONED: 3/26/02 bgs = below ground surface | GROU | NDWA | TER LEVEL (b | gs): | N | ot Enc | ountere | d (ft) |
| | NS=Not Sampled | DRILL | TYPE: | Air Rotary | | | | | |
| | NA=Not Applicable | | | Intersol Rand | I TH-60 |) | | | |
| | | BORE | HOLE | DIAMETER: | 8.25 | | | | (in) |
| [] | | | | , | 1 | | | (md | |
| # | CLASSIFICATION | | MBO | INU | F | | ERY | L (pl | _ = |
| PTH s) - f | AND DESCRIPTION | | SYI | | Ĕ | ų | l õ | เริงเ | -(sg |
| DEI SAN TER | | | scs | TOV | NAL | I I | REC | 0 RE | 5 6 |
| | | ļ | 5 | α | | | % | ∎ | |
| 5.0 | SAND, silty, fine grained, very loose, light brown | | SM | NA | NS | 1400 | NA | *0.0 | - 5 |
| 10.0 - | CALICHE, some sand, silty, fine grained, very loose yellowish-orange to reddish-orange | , ry loose. | | | | | | | - - - - 10 |
| | CALICHE, white, hard | | | | | | | | |
| 15.0 - | | | | | | | | | - 15 - |
| | CALICHE, some sand, silty, clayey, yellowish-orang | e, moist | | | | 1410 | | | - - |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

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* Soil Vapor Montoring Result

EXPLORATORY BORING LOG

SVB-10

| | LOCAT | ION:_P | CA Junction | SOIL | . VAPOR | BORING NO | | SVB- | 11 | | |
|------|--|--------------|--|------------|----------|---------------|----------|------|--------|---------|----------------|
| | DRILLE | DBY: H | larrison & Cooper Drilling | FIEL | D LOGG | ED BY: K.H | enders | son | | | |
| | DATE H | | RILLED: 3/26/02 | | | | | | | | |
| [| DATE A | BANDO | NED: <u>3/26/02</u> | GRO | UNDWA | TER LEVEL (bg | is): | N | ot Enc | ountere | d (ft) |
| | REMAR | KS: <u>t</u> | bgs = below ground surface | | | | | | | | |
| | | t | VA=Not Applicable | | | Air Rolary | TUR | | | | |
| | | - | | | | | | | | | |
| | | | | BOR | E HOLE | DIAMETER: | 8.25 | | | | (IN) |
| | | | | | | | | | | | |
| | | # | | | 30L | LN | ۲. | | 37 | (mqq) | |
| E | Ψ | | CLASSIFICATION | | Mλ | | TIC/ | | N N | | ТН () |
| Ē | (Sgd | \$ | AND DESCRIPTION | | S S | M | ٩٢ | IME | | RES | DEP (bgs |
| | ° S | | | | nsc | BLC | AN | | % В | | |
| L | | - | | | | | 1 | 1 | J | 1 - | <u> </u> |
| 0.0 | - | г <u>т</u> т | | | <u> </u> | ····· | <u> </u> | r | I | T | _0 |
| | | | brown | o readisn- | | | | | | | - |
| | $\left\{ \left \right \right\}$ | - | | | | NA | NS | 1415 | NA | *0.0 | + |
| | | |] | | SM | | | | | | \vdash |
| | $\{ \}$ | | | | | | | | | | + |
| 5.0 | - | | | | } | | | | | | - 5 |
| | | | | | | | | | | | - |
| | $\left\{ \left \right \right\}$ | | | | | | | | | | + |
| | | | SAND silty fine grained very loose light brown t | o reddish- | 1 | | ĺ | | | | - |
| | $\left\{ \left \right \right\}$ | | orange | | | | | | | } | - |
| 10.0 | -1 | | | | | | | | | | - 10 |
| | $\left\{ \left\{ \left[\right] \right\} \right\}$ | | | | SM | | | | | | F |
| | $\{ \}$ | | | | | | 1 | | | | F |
| | | | | | 1 | | | | | 1 | L |
| | | · · · | | | | | | | | | |
| | | | SAND clavey silty fine grained very loose light | vellowish- | | | | | | | - |
| 15.0 | | | SAND, clayey, silty, fine grained, very loose, light orange | yellowish- | | | | | | | - 15 |

CALICHE, white, hard, some sand and silt, reddish-orange

MAXIM

Boring Terminated at 19.5' bgs

Soil Vapor Montoring Result
 OG SVB-11

EXPLORATORY BORING LOG

1425

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| LOCATION | PCA Junction | SOIL | VAPOF | BORING NO | . | SVB- | 12 | | |
|--|--|-----------------------|----------------------------|---|--------------------------|-------|------------|--------------------|------------------|
| DRILLED B | Y: Harrison & Cooper Drilling | FIEL | D LOGG | ED BY: K.I | Hender | son | | | |
| DATE HOL DATE ABAN REMARKS: | E DRILLED: 3/26/02 NDONED: 3/26/02 bgs = below ground surface NS=Not Sampled NA=Not Applicable | GROI DRILI BORI | UNDWA L TYPE: E HOLE | TER LEVEL (t Air Rotary Intersol Ran DIAMETER: | ogs): d TH-60 8.25 | D | ot Enc | ountere | ed (ft (in |
| DEPTH (bgs) - ft SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH |
| .0 | SAND, silty, fine grained, very loose, light brown CALICHE, white, hard | | SM | NA | NS | 1430 | NA | *0.0 | 0 |
| .0 - | SAND, silty, fine grained, very loose, light brown to brown | o reddish- | SM | | | | | | - 5 |
| 0.0 | CALICHE, white, hard, some sand, silty, fine grain loose, light brown and reddish-brown | ned, very | | | | | | | |
| 5.0 - | SAND, silty, reddish-orange, damp | | SM | | | | | | - 1 - |
| | CALICHE, white, hard, some sand, silty, fine grain loose, light brown and reddish-brown, damp | ned, very | | | | 1440 | | | $\left \right $ |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result

EXPLORATORY BORING LOG

SVB-12

| PR | OJECT | NAME: Maxim #1690021/110 | | | | | SVB- | 13 | <u> </u> | |
|--------------|------------|---|----------|---------|--------------------|----------|------|---------|-------------|---------------|
| LO | CATION | PCA Junction | SOIL | . VAPOR | BURING NO. | <u></u> | | | | |
| | ILLED E | Y: Harrison & Cooper Drilling | FIEL | D LOGG | ED BY: <u>K.</u> ł | lender | son | | | |
| DA | TE ABA | NDONED: 3/26/02 bgs = below ground surface | GRO | UNDWA | TER LEVEL (b | gs): | N | ot Enco | ountere | <u>d (ft)</u> |
| | | NS=Not Sampled | DRIL | L TYPE: | Air Rotary | | | | | |
| Í | | NA=Not Applicable | | | Intersol Rand | d TH-60 |) | | | |
| | | | BOR | E HOLE | DIAMETER: | 8.25 | | | | (in) |
| | | | | T | 1 | | r | · | <u> </u> | т |
| | # | CLASSIFICATION | | 1BOL | UNT | 'AL | | εRY | T (ppr | t t |
| HTH - HTH | ALI | | | SYA | 8 | Ę | μ | N N | วกร | PTH - (si |
| DEF (bgs | ERV BAM | AND DESONIT HON | | SCS | N N | AAL' | Σ | REC | Ш Ш Ш | Вġ |
| | ULL I | | | n N | B | Ā | | 8 | | |
| 0.0 ¬ | | | | | | | | r | | 0 |
| | | SAND, silty, fine grained, very loose, light brown to d | ark | | | | | | | - |
| 4 | | - | | | NA | INS | 1545 | NA | *0.0 | - |
| { | | | | SM | | | | | 0.0 | - |
| - | | F | | | | | | | | - |
| 5.0 - | | CALICHE, white | | ł | | | | | | - 5 |
| 1 | | | | | | | | | | - |
| 1 | | | | | | | | | | - |
| 1 | | | | | | | | | | - |
| ł | | | | 1 | j | | | | | \mathbf{F} |
| 10.0 - | | | | | | |] | | | <u>⊢</u> 10 |
| 4 | | SAND, silty, fine grained, very loose, light brown | | ł | | | | | | + |
| 1 | | | | | | | - | | | - |
| | | | | SM | | | | | | - |
| - | | | | ĺ | | | | | | - |
| 15.0 - | | CALICHE, white, hard, some sand, clayey, silty, fine | <u> </u> | | | | | | | - 15 |
| 1 | | grained, very loose, light brown and orangish-brown | | 1 | | | | | | F |
| - | | | | | | | | | | F |
| - | | | | | | | 1550 | | | ŀ |
| - | \Box | | | l | | <u> </u> | | | | } |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
OG SVB-13

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| Column Portunition DRILLED BY: Harrison & Cooper Drilling DATE HOLE DRILLED: 3/26/02 DATE ABANDONED: 3/26/02 REMARKS: bgs = below ground surface NS=Not Applicable Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 | PROJECT | NAME: Maxim #1690021/110 | SOIL | | BORING NO | | SVB- | 14 | | |
|---|--|---|--------|--------------------|--------------------|---------|------|----------|----------|---------------|
| DRILLED BY: Harrison & Cooper Drilling 3/26/02 DATE HOLE DRILLED: 3/26/02 REMARKS: bgs = below ground surface NS=Not Sampled GROUNDWATER LEVEL (bgs): NA=Not Applicable Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 | LOCATION | | 0012 | | 20.0.000 | | | | | |
| DATE HOLE DRILLED: 3/25/02 DATE ABANDONED: 3/25/02 REMARKS: bgs = below ground surface NA=Not Applicable DRILL TYPE: Air Rotary Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 | DRILLED B | BY: Harrison & Cooper Drilling | FIELD | LOGG | ED BY: <u>K.</u> F | lenders | son | | | |
| Instruction Disserve gould solutate NS=Not Sampled NA=Not Applicable DRILL TYPE: Air Rotary Intersol Rand TH-60 BORE HOLE DIAMETER: 9 10 10 10 10 9 10 10 10 9 10 10 10 9 10 10 10 9 10 10 10 9 10 10 10 10 10 10 100 10.0 10 100 1000 | DATE HOL DATE ABAI | E DRILLED: <u>3/26/02</u> NDONED: <u>3/26/02</u> | GROL | INDWA [.] | TER LEVEL (b | gs): | N | ot Enco | ountere | d (ft) |
| NA=Not Applicable Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 BORE HOLE DIAMETER: 8.25 U <td></td> <td>NS=Not Sampled</td> <td>DRILL</td> <td>TYPE:</td> <td>Air Rotary</td> <td></td> <td></td> <td></td> <td></td> <td></td> | | NS=Not Sampled | DRILL | TYPE: | Air Rotary | | | | | |
| BORE HOLE DIAMETER: 8.25 H GOT AND DESCRIPTION IND OS AND BESCRIPTION IND OS | | NA=Not Applicable | | | Intersol Rand | TH-60 |) | | | |
| Human CLASSIFICATION Image: Sign structure Image: Sign structure< | | | BORE | HOLE | DIAMETER: | 8.25 | | | · | (in) |
| H H <td>[</td> <td>T</td> <td>······</td> <td></td> <td>[</td> <td>1</td> <td> </td> <td>_</td> <td>Ê</td> <td>1</td> | [| T | ······ | | [| 1 | | _ | Ê | 1 |
| 0.0 Image: Second structure Image: Second | + + + - - - - + - + - - - - - - - - - - | CLASSIFICATION | | rmbol | OUNT | ICAL | | VERY | JLT (ppi | н т |
| 0.0 0.0 5.0 10.0 10.0 0.0 0.0 0.0 0.0 0.0 | DEPTI (bgs) SAMPL VTERVAL | AND DESCRIPTION | | uscs s' | BLOW C | ANALYT | TIME | % RECO | ID RESU | DEP1 (bgs) |
| 0.0 SAND, silty, fine grained, very loose, light brown to dark SM NA ND 1600 N 5.0 CALICHE, white, hard SM SM NA ND 1600 N 10.0 SAND, silty, clayey, fine grained, very loose, yellowish-orange to orange SM SM SM | | / | 1 | | · | 1 | | | 1. | 1 |
| 5.0 5.0 CALICHE, white, hard SAND, silty, clayey, fine grained, very loose, yellowish- orange to orange SAND, silty, clayey, fine grained, very loose, yellowish- orange to orange SM | 0.0 | SAND, silty, fine grained, very loose, light brown to da | rk | | | | | | | |
| 5.0 CALICHE, white, hard SAND, silty, clayey, fine grained, very loose, yellowish- orange to orange | | | | SM | NA | ND | 1600 | NA | *0.0 | - |
| 10.0 SAND, silty, clayey, fine grained, very loose, yellowish- orange to orange | 5.0 - | CALICHE, white, hard | | | | | | | | - 5 |
| 10.0 | | ••• SAND, silty, clayey, fine grained, very loose, yellowish | ۱- | | | | | | | |
| SM | 10.0 | | | | | | | | | - 10 |
| | | | | SM | | | | | | - |
| 15.0 | 15.0 | • • • • • • • | | | | | | | | - 15 |
| CALICHE, white, hard, some sand, clayey, silty, fine grained, very loose, light brown and orangish-brown | | CALICHE, white, hard, some sand, clayey, silty, fine grained, very loose, light brown and orangish-brown | | | | | 1610 | | | |

Boring Terminated at 19.5' bgs

MAXIM

* Soil Vapor Montoring Result

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| | · |
|--|--|
| LOCATION: PCA Junction | SOIL VAPOR BORING NOSVB-15 |
| DRILLED BY: Harrison & Cooper Drilling DATE HOLE DRILLED: 3/26/02 DATE ABANDONED: 3/26/02 | FIELD LOGGED BY: K.Henderson GROUNDWATER LEVEL (bgs): Not Encountered (ft) |
| NS=Not Applicable | DRILL TYPE: Air Rotary Intersol Rand TH-60 |
| | BORE HOLE DIAMETER: 8.25 (in) |
| | |
| HLdad HLdad Unterview HLdad HL | USCS SYMBOL USCS SYMBOL BLOW COUNT ANALYTICAL TIME % RECOVERY * PID RESULT (ppr 05PTH (bgs) - ft |
| 0.0 | o dark SM NA NS 1615 NA *0.0 |
| 5.0 - CALICHE, white ••• SAND, silty, clayey, fine grained, very loose, yelk | |
| 10.0 - | SM |
| 15.0 - SAND, clayey, silty, fine grained, very loose, reddi CALICHE, white, hard, some sand, clayey, silty, fi grained, very loose, light brown and light yellowish | sh-orange SC - 15 - 15 |
| | 1630 |

Boring Terminated at 19.5' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
OG SVB-15

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| PRO. | | ME: Maxim #1690021/110 PCA Junction | I SOIL | VAPOR | BORING NO. | | SVB- | 16 | | |
|-------------------------------|-------------------------|--|-------------|------------------|----------------------------|------------|----------|------------|--------------------|------------|
| DRILL | LED BY: | Harrison & Cooper Drilling DRILLED: 3/27/02 | FIELI | D LOGG | ED BY: <u>K.H</u> | lender | son | | | |
| REMA | : ABAND ARKS: | bgs = below ground surface NS=Not Sampled | GRO DRIL | UNDWA L TYPE: | TER LEVEL (b Air Rotary | gs): | 2 | t' bgs | | (ft |
| | | NA=Not Applicable | | | Intersol Ran | 1 TH-6 |) | | | |
| L | | | BORI | EHOLE | DIAMETER: _ | 8.25 | | | | (ir |
| DEPTH (bgs) - ft somere | SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH |
| .0 | | SAND, silty, fine grained, very loose, light brown to brown | dark | SM | | | 750 | | *124 | - (|
| .0 | | CALICHE, white | | | | 113 | 1 1 30 | | | - |
| 0.0 | | SAND, silty, clayey, fine grained, very loose, llight reddish-brown | brown to | SM | | | | | | |
| 5.0 - | • | CALICHE, white, hard | | | | | | | | |
| 0.0 | | CALICHE, white, hard, some sand, yellowish-orang reddish-brown, damp | ge to | | | | | | | |
| | | | | | | | 805 | | | |

Boring Terminated at 25' bgs

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MAXIM

1690021/110

* Soil Vapor Montoring Result

EXPLORATORY BORING LOG

SVB-16

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| LOC | ATION: | PCA Junction | SOIL | VAPOR | BORING NO | <u> </u> | SVB | 17 | |
|------------------------------|--------------------------|---|--------------------------|--------------------------------------|---|-------------------------------------|------------|------------|--------------------|
| DRIL DATE DATE REM/ | LED BY HOLE ABANI | Harrison & Cooper Drilling DRILLED: 3/27/02 DONED: 3/27/02 bgs = below ground surface NS=Not Sampled NA=Not Applicable | FIEL GROU DRIL | D LOGG UNDWA L TYPE: E HOLE | ED BY: <u>K.</u> TER LEVEL (I <u>Air Rotary</u> <u>Intersol Ran</u> DIAMETER: | Hender: ogs): d TH-60 8.25 | <u>2</u> : | 3.5' bg: | S |
| DEPTH (bgs) - ft | SAWIPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) |
| 0.0 | | SAND, silty, fine grained, very loose, light brown CALICHE, white, hard SAND, silty, clayey, fine grained, very loose, llight CALICHE, white, hard, some sand, reddish-brown | n to dark ght brown | SM | NA | NS | 820 | NA | *0.3 |
| 20.0 - | | CALICHE, white, hard, some sand, reddish-brow saturated after standing open for approximately | vn, damp to 5 minutes | | | | | | |

Boring Terminated at 25' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
EXPLORATORY BORING LOG SVB-17

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| LOCATIO | N: PCA Junction | | | | | | | |
|--|---|------------------------------|----------------|--------------|------|------------|--------------------|-------|
| DRILLED DATE HO | BY: Harrison & Cooper Drilling LE DRILLED: 3/27/02 | FIELD LOGGED BY: K.Henderson | | | | | | |
| DATE AB | ANDONED: 3/27/02 S: bgs = below ground surface | GROUNDW | ATER LEVEL (bg | (S): | 2 | 7.7' bg: | S | (f |
| | NS=Not Sampled | _ DRILL TYPE: Air Rotary | | | | | | |
| L | | BORE HOLE | | 8.25 | | | | (i |
| DEPTH (bgs) - ft SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH |
| <u></u> | SAND, silty, fine grained, very loose, light brow | n | 1 | T | 1 | 1 | 1 | |
| | | SM | NA | NS | 845 | NA | *0.1 | |
| 0 - | CALICHE, white, hard | | | | | | | |
|).0 - | SAND, trace silt, fine grained, very loose, well s | orted, llight | | | | | | |
| 5.0 - | orangish-brown to orange | | | | | | | |
| 0.0 | | SP | | | | | | |

EXPLORATORY BORING LOG

1690021/110

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Soil Vapor Montoring Result

Page 2 of 2



Boring Terminated at 30' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
OG SVB-18

| LOCAT | ION: PCA Junction | SOIL VAPO | R BORING NO | <u> </u> | SVB- | 19 | |
|-------------------------------|--|------------------------------|---------------|------------|------|------------|-----------------------------|
| DRILLE | D BY: Harrison & Cooper Drilling IOLE DRILLED: 3/27/02 | FIELD LOGGED BY: K.Henderson | | | | | |
| DATE A REMAR | BANDONED: 3/27/02 KS: bgs = below ground surface | GROUNDW | ATER LEVEL (I | ogs): | _20 | 6.35' bi | gs(|
| | NS=Not Sampled | DRILL TYPE | Air Rotary | | | | |
| | | | Intersol Ran | d TH-6 | 0 | | |
| | | BORE HOLI | E DIAMETER: _ | 8.25 | | | (1 |
| DEPTH (bgs) - ft SAMPLE | CLASSIFICATION | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) DEPTH |
| 0.0 רח ר | | _ | | | 1 | 1 | ······ |
| | SAND, silty, fine grained, very loose, light brown | n SM | NA | NS | 920 | NA | *0.3 |
| 5.0 - | CALICHE, white, hard | | | | | | |
| 10.0 - | | | | | | | |
| 15.0 - | SAND, silty, fine grained, very loose, well sorted orange | d, llight | | | | | |
| 20.0 - | | SM | | | | | |
| 111 | | | | | 1 | 1 | 1 F |

Boring Terminated at 30' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result

SVB-19

EXPLORATORY BORING LOG

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Boring Terminated at 30' bgs

MAXIM

* Soil Vapor Montoring Result
OG SVB-19





Boring Terminated at 30' bgs

1690021/110

* Soil Vapor Montoring Result

| MAXIM

EXPLORATORY BORING LOG

SVB-20



| PROJECT NAM | ME: Maxim #1690021/110 PCA Junction | SOIL VA | |) | SVB- | 21 | | |
|--|---|---|---------------------------|--------------------|---------------------------------------|------------|--------------------|---------------------|
| DRILLED BY: | Harrison & Cooper Drilling | FIELD LOGGED BY: K.Henderson | | | | | | |
| DATE HOLE D DATE ABANDO REMARKS: | DATE HOLE DRILLED: 3/27/02 DATE ABANDONED: 3/27/02 REMARKS: bgs = below ground surface ND=Not Detected, NS=No Sample NA=Not Applicable | | DWATER LEVEL | (bgs): nd TH-60 | | .0' bgs | | <u>(ft)</u> |
| | | BORE H | IOLE DIAMETER: | 8.25 | · · · · · · · · · · · · · · · · · · · | | | (in) |
| DEPTH (bgs) - ft SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | | USCS SYMBOL BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
| 25.0 - | SAND (50%), trace silt, fine grained, reddish-or CLAY (30%), medium dense, dry to damp, redd some siltstone fragements (20%), reddish-oran greenish-gray, mottled, damp to saturated after open for 5 minutes | range, damp, dish-orange, ge with · borehole left S | с | | | | | - 25 |
| _{30.0}][] \llbracket | 24g | | | | 1040 | | | 上 30 |

Boring Terminated at 30' bgs

MAXIM

1690021/110

* Soil Vapor Montoring Result
OG SVB-21

| PROJECT NAME: Maxim #1690021/110 LOCATION: PCA Junction | SOIL | . VAPOR | BORING NO | | SVB- | 22 | | |
|--|---------------------------------|------------------|--|------------------|------|------------|--------------------|---------------------|
| DRILLED BY: Harrison & Cooper Drilling | FIEL | D LOGG | ED BY: K.He | enders | on | | | |
| DATE HOLE DRILLED: 3/27/02 DATE ABANDONED: 3/27/02 REMARKS: bgs = below ground surface NS=Not Sampled NA=Not Applicable | GRO | UNDWA L TYPE: | TER LEVEL (bg Air Rotary Intersol Rand | s): TH-60 | | 1.2' bgs | § | (ft) |
| | BOR | e hole | DIAMETER: | 8.25 | | | | (in) |
| | | · | | | | | | |
| HLABO HLABO HLABO HLABO AND DESCRIN AND DESCRIN | TION PTION | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH (bgs) - ft |
| | | r | | 1 | | | | 0 |
| SAND, silty, fine grained, very | r loose, light brown | ѕм | | | | | | - |
| - CALICHE, while, hard | loose, llight orange | | NA | NS | 1050 | NA | *2.9 | - 5 |
| 0 - CALICHE, white, hard, some solution in the solution of the | sand, fine grained, very loose, | SM | | | | | | - 10 |
| 0 - CALICHE, white, hard, some s light brown to orange, damp | sand, fine grained, very loose, | | | | | | | - 15 |

EXPLORATORY BORING LOG

Boring Terminated at 25' bgs

MAXIM

1690021/110

0.0

5.0

10.0

15.0

Soil Vapor Montoring Result
 OG SVB-22

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Page 2 of 2

| LOCATION: PCA Ju | nction | SOIL VAPOR BORING NOSVB-22 | | | | | | |
|--|--|--|------------|------------|-------------|------------|--------------------|-------|
| DRILLED BY: Harriso | n & Cooper Drilling | FIELD LOGGED BY: K.Henderson | | | | | | |
| DATE HOLE DRILLED DATE ABANDONED: REMARKS: bgs = b NS=No NA=No | D: <u>3/27/02</u> 3/27/02 below ground surface bt Sampled ot Applicable | GROUNDWATER LEVEL (bgs): 24.2' DRILL TYPE: Air Rotary Intersol Rand TH-60 BORE HOLE DIAMETER: 8.25 | | | I.2' bgs (f | | | |
| DEPTH (bgs) - ft SAMPLE INTERVAL/ID # | CLASSIFICATION AND DESCRIPTION | USCS SYMBOL | BLOW COUNT | ANALYTICAL | TIME | % RECOVERY | * PID RESULT (ppm) | DEPTH |
| SAL SAL Green | ND (50%), trace silt, fine grained, reddish-or AY (30%), medium dense, dry to damp, redo ne siltstone fragements (20%), reddish-oran enish-gray, mottled, damp to saturated after en for 5 minutes | ange, damp, dish-orange, ge with borehole left | | | | | | |

Boring Terminated at 25' bgs

1690021/110

* Soil Vapor Montoring Result
OG SVB-22

APPENDIX B

Groundwater Analytical Report

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

1/39

ANALYTICAL REPORT

PROJECT NO. CARLSBAD, NM

NG0005 20 Mi NE Carlsbad, NM

Lot #: I2D110168

Rob Sengebush

Maxim Technologies, Inc. 10601 Lomas NE Ste 106 Albuquerque, NM 87112

SEVERN TRENT LABORATORIES, INC.

fl. R Q

Carla M. Butler Project Manager

April 25, 2002

American Council of Independent Laboratories International Association of Environmental Testing Laboratories

STL Austin is a part of Severn Trent Laboratories, Inc.

SFL-4122 (0301)

CASE NARRATIVE

I2D110168

Samples received in good condition within acceptable cooler temperature.

No anomalies occurred during analysis.

EXECUTIVE SUMMARY - Detection Highlights

I2D110168

| | | REPORTING | | ANALYTICAL |
|---------------------------|--------|-----------|-------|--------------|
| PARAMETER | RESULT | LIMIT | UNITS | METHOD |
| | | | | |
| MW-2 04/09/02 13:45 001 | | | | |
| Calcium | 1200 | 25.0 | mg/L | SW846 6010B |
| Magnesium | 111 | 5.0 | mg/L | SW846 6010B |
| Sodium | 104 | 5.0 | mg/L | SW846 6010B |
| Lead | 0.014 | 0.0030 | mg/L | SW846 6010B |
| Selenium | 0.040 | 0.0050 | mg/L | SW846 6010B |
| Total Dissolved Solids | 3940 | 40.0 | mg/L | MCAWW 160.1 |
| Chloride | 475 | 100 | mg/L | MCAWW 300.0A |
| Sulfate | 1720 | 100 | mg/L | MCAWW 300.0A |
| Nitrate | 36.9 | 5.0 | mg/L | MCAWW 300.0A |
| Total Alkalinity | 74.7 | 5.0 | mg/L | MCAWW 310.1 |
| MW-3 04/09/02 14:30 002 | | | | |
| Calcium | 846 | 25.0 | mg/L | SW846 6010B |
| Magnesium | 11.5 | 5.0 | mg/L | SW846 6010B |
| Sodium | 12.3 | 5.0 | mg/L | SW846 6010B |
| Lead | 0.0090 | 0.0030 | mg/L | SW846 6010B |
| Selenium | 0.010 | 0.0050 | mg/L | SW846 6010B |
| Total Dissolved Solids | 3160 | 40.0 | mg/L | MCAWW 160.1 |
| Chloride | 255 | 100 | mg/L | MCAWW 300.0A |
| Sulfate | 1320 | 100 | mg/L | MCAWW 300.0A |
| Nitrate | 9.5 | 0.50 | mg/L | MCAWW 300.0A |
| Total Alkalinity | 91.5 | 5.0 | mg/L | MCAWW 310.1 |
| MW-4 04/09/02 15:05 003 | | | | |
| Calcium | 716 | 25.0 | mg/L | SW846 6010B |
| Magnesium | 40.7 | 5.0 | mg/L | SW846 6010B |
| Sodium | 10.5 | 5.0 | mg/L | SW846 6010B |
| Lead | 0.0034 | 0.0030 | mg/L | SW846 6010B |
| Selenium | 0.017 | 0.0050 | mg/L | SW846 6010B |
| Total Dissolved Solids | 2930 | 40.0 | mg/L | MCAWW 160.1 |
| Chloride | 211 | 100 | mg/L | MCAWW 300.0A |
| Sulfate | 1360 | 100 | mg/L | MCAWW 300.0A |
| Nitrate | 7.7 | 0.50 | mg/L | MCAWW 300.0A |
| Total Alkalinity | 107 | 5.0 | mg/L | MCAWW 310.1 |
| | | | | |

(Continued on next page)

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EXECUTIVE SUMMARY - Detection Highlights

I2D110168

| | | REPORTIN | G | ANALYTI | CAL |
|---------------------------|--------|----------|-------|----------|-------|
| PARAMETER | RESULT | LIMIT | UNITS | METHOD | |
| MW-5 04/09/02 16:10 004 | | | | | |
| Calcium | 943 | 25.0 | mg/L | SW846 6 | 010B |
| Magnesium | 301 | 5.0 | mg/L | SW846 6 | 010B |
| Sodium | 291 | 5.0 | mg/L | SW846 6 | 010B |
| Lead | 0.0096 | 0.0030 | mg/L | SW846 6 | 010B |
| Selenium | 0.029 | 0.0050 | mg/L | SW846 6 | 010B |
| Total Dissolved | 5780 | 40.0 | mg/L | MCAWW 1 | 60.1 |
| Solids | | | | | |
| Chloride | 1410 | 500 | mg/L | MCAWW 3 | A0.00 |
| Sulfate | 1710 | 100 | mg/L | MCAWW 3 | 00.0A |
| Nitrate | 14.0 | 5.0 | mg/L | MCAWW 3 | A0.00 |
| Total Alkalinity | 68.1 | 5.0 | mg/L | MCAWW 3 | 10.1 |
| MW-6 04/09/02 16:45 005 | | | | | |
| Calcium | 652 | 25.0 | mg/L | SW846 6 | 010B |
| Magnesium | 43.4 | 5.0 | mg/L | SW846 6 | 010B |
| Sodium | 10.5 | 5.0 | mg/L | SW846 6 | 010B |
| Lead | 0.011 | 0.0030 | mg/L | SW846 6 | 010B |
| Total Dissolved Solids | 2660 | 40.0 | mg/L | MCAWW 10 | 50.1 |
| Chloride | 120 | 100 | mg/L | MCAWW 3 | A0.0A |
| Sulfate | 1370 | 100 | mg/L | MCAWW 3 | A0.0A |
| Nitrate | 5.2 | 0.50 | mg/L | MCAWW 3 | A0.0A |
| Total Alkalinity | 81.6 | 5.0 | mg/L | MCAWW 3 | L0.1 |

ANALYTICAL METHODS SUMMARY

I2D110168

| PARAMETER | ANALYTICAL METHOD | | |
|---|------------------------------|--|--|
| Alkalinity | MCAWW 310.1 | | |
| Chloride | MCAWW 300.0A | | |
| Filterable Residue (TDS) | MCAWW 160.1 | | |
| Mercury in Liquid Waste (Manual Cold-Vapor) | SW846 7470A | | |
| Sulfate | MCAWW 300.0A 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

I2D110168

| ANALYTI | NALYTICAL | | | | |
|----------|-----------|---------------------|----------|--|--|
| METHOD | | ANALYST | <u> </u> | | |
| MCAWW 1 | 50.1 | David A. Tocher | 800002 | | |
| MCAWW 30 | A0.00 | Cynthia A. Anderson | 034090 | | |
| MCAWW 31 | 10.1 | David A. Tocher | 800002 | | |
| SW846 60 | 010B | Daniel J. New | 005670 | | |
| SW846 74 | 170A | Dung (Minh) Le | 038027 | | |
| SW846 82 | 260B | 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

I2D110168

| | | | SAMPLED | SAMP |
|-------------|---------|------------------|----------|-------|
| <u>WO #</u> | SAMPLE# | CLIENT SAMPLE ID | DATE | TIME |
| _ | | | | |
| EXP7N | 001 | MW-2 | 04/09/02 | 13:45 |
| EXP77 | 002 | MW-3 | 04/09/02 | 14:30 |
| EXP79 | 003 | MW-4 | 04/09/02 | 15:05 |
| EXP8C | 004 | MW-5 | 04/09/02 | 16:10 |
| EXP8D | 005 | MW-6 | 04/09/02 | 16:45 |
| EXP8G | 006 | DUPLICATE | 04/09/02 | 14:00 |
| EXP8W | 007 | TRIP BLANK | 04/09/02 | 18:00 |
| | | | | |

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.

QC DATA ASSOCIATION SUMMARY

I2D110168

Sample Preparation and Analysis Control Numbers

| | | ANALY | TICAL | LEACH | PREP | |
|---------|--------|-------|--------|---------|---------|---------|
| SAMPLE# | MATRIX | METHO | D | BATCH # | BATCH # | MS RUN# |
| 001 | አለልጥምው | | 160 1 | | 2102385 | 2102232 |
| 001 | WATER | MCAWW | 300 03 | | 2102305 | 2102232 |
| | MATER | MCAMM | 300.0A | | 2102104 | 2102071 |
| | WATER | MCAWN | 300.0A | | 2102100 | 2102070 |
| | WATER | CM8/6 | 7470A | | 2102100 | 2102003 |
| | WATED | CMOAC | 0260B | | 2101377 | 2101177 |
| | WAIER | OW040 | 6200B | | 2112515 | 2112233 |
| | WAIER | SW040 | 210 1 | | 2105291 | 2105117 |
| | WALER | MCAWW | 310.1 | | 2108409 | 2108204 |
| 002 | WATER | MCAWW | 160.1 | | 2102385 | 2102232 |
| | WATER | MCAWW | 300.0A | | 2102184 | 2102071 |
| | WATER | MCAWW | 300.0A | | 2102188 | 2102070 |
| | WATER | MCAWW | 300.0A | | 2102186 | 2102069 |
| | WATER | SW846 | 7470A | | 2101377 | 2101177 |
| | WATER | SW846 | 8260B | | 2112515 | 2112233 |
| | WATER | SW846 | 6010B | | 2105291 | 2105117 |
| | WATER | MCAWW | 310.1 | | 2108409 | 2108204 |
| 003 | WATER | MCAWW | 160.1 | | 2102385 | 2102232 |
| | WATER | MCAWW | 300.0A | | 2102184 | 2102071 |
| | WATER | MCAWW | 300.0A | | 2102188 | 2102070 |
| | WATER | MCAWW | 300.0A | | 2102186 | 2102069 |
| | WATER | SW846 | 7470A | | 2101377 | 2101177 |
| | WATER | SW846 | 8260B | | 2112515 | 2112233 |
| | WATER | SW846 | 6010B | | 2105291 | 2105117 |
| | WATER | MCAWW | 310.1 | | 2108409 | 2108204 |
| 004 | WATER | MCAWW | 160.1 | | 2102385 | 2102232 |
| | WATER | MCAWW | 300.0A | | 2102184 | 2102071 |
| | WATER | MCAWW | 300.0A | | 2102188 | 2102070 |
| | WATER | MCAWW | 300.0A | | 2102186 | 2102069 |
| | WATER | SW846 | 7470A | | 2101377 | 2101177 |
| | WATER | SW846 | 8260B | | 2112515 | 2112233 |
| | WATER | SW846 | 6010B | | 2105291 | 2105117 |
| | WATER | MCAWW | 310.1 | | 2108409 | 2108204 |
| 005 | WATER | MCAWW | 160.1 | | 2102385 | 2102232 |
| | WATER | MCAWW | 300.0A | | 2102184 | 2102071 |
| | WATER | MCAWW | 300.04 | | 2102188 | 2102071 |
| | WATER | MCAWW | 300.04 | | 2102186 | 2102069 |
| | WATER | SW846 | 7470A | | 2101377 | 2101177 |
| | WATER | SW846 | 8260B | | 2112515 | 2112233 |
| | WATER | SW846 | 6010B | | 2105291 | 2105117 |
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QC DATA ASSOCIATION SUMMARY

I2D110168

Sample Preparation and Analysis Control Numbers

| SAMPLE# | MATRIX | ANALYTICAL METHOD | LEACH <u>BATCH #</u> | PREP BATCH # | MS RUN# |
|---------|--------|----------------------|-------------------------|-----------------|---------|
| 005 | WATER | MCAWW 310.1 | | 2108409 | 2108204 |
| 006 | WATER | SW846 8260B | | 2112515 | 2112233 |
| 007 | WATER | SW846 8260B | | 2112515 | 2112233 |

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CONOCO INC.

Client Sample ID: MW-2

GC/MS Volatiles

| Lot-Sample #: I2D110168-001 | Work Order #: | EXP7N1AC | Matrix WATER |
|------------------------------|----------------|------------|--------------|
| Date Sampled: 04/09/02 13:45 | Date Received: | 04/11/02 | |
| Prep Date: 04/19/02 | Analysis Date: | 04/19/02 | |
| Prep Batch #: 2112515 | | | |
| Dilution Factor: 1 | Method: | SW846 8260 | B |
| | | | |
| | | REPORTING | |
| PARAMETER | RESULT | LIMIT | UNITS |
| Benzene | ND | 1.0 | ug/L |
| Ethylbenzene | ND | 1.0 | ug/L |
| Toluene | ND | 1.0 | ug/L |
| Xylenes (total) | ND | 2.0 | ug/L |

| | PERCENT | RECOVERY LIMITS | |
|-----------------------|----------|--------------------|--|
| SURROGATE | RECOVERY | | |
| 4-Bromofluorobenzene | 119 | (75 - 133) | |
| Toluene-d8 | 113 | (86 - 126) | |
| Dibromofluoromethane | 102 | (76 - 130) | |
| 1,2-Dichloroethane-d4 | 99 | (53 - 154) | |

CONOCO INC.

Client Sample ID: MW-2

TOTAL Metals

Lot-Sample #...: I2D110168-001 Date Sampled...: 04/09/02 13:45 Date Received..: 04/11/02

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Matrix..... WATER

| | | REPORTING | | | PREPARATION- | WORK |
|---------------|----------------|---------------|--------|-------------|-------------------------------|----------------|
| PARAMETER | RESULT | LIMIT | UNITS | METHOD | ANALYSIS DATE | ORDER # |
| Prep Batch # | , - 2101377 | | | | | |
| Mercurv | ND | 0.00020 | mg/L | SW846 7470A | 04/11-04/12/02 | ΕΧΡ7ΝΊ Δ |
| | | Dilution Fac | tor: 1 | | • - , - = • - , - = , • = | |
| | | | | | | |
| Prep Batch #. | : 2105291 | | | | | |
| Silver | ND | 0.0050 | mg/L | SW846 6010B | 04/15-04/18/02 | EXP7N1A |
| | | Dilution Fac | tor: 1 | | | |
| Arsenic | Arsenic ND | 0.010 | mg/L | SW846 6010B | 04/15-04/18/02 | EXP7N1A |
| | | Dilution Fac | tor: 1 | | | |
| Barium | Barium ND | 0.20 | mg/L | SW846 6010B | 04/15-04/18/02 | ΕΧΡ7ΝΙΑ |
| | | Dilution Fac | tor: 1 | | • • • • • • • • • • • • • • • | |
| a_1 | 1000 | 25.0 | /= | | | |
| Calcium | 1200 | 25.U | mg/L | SW846 6010B | 04/15-04/19/02 | EXP7N1A |
| | | Dilución Fac | COT: 5 | | | |
| Cadmium | ND | 0.0020 | mg/L | SW846 6010B | 04/15-04/18/02 | EXP7N1A |
| | | Dilution Fac | tor: 1 | | | |
| Chromium | ND | 0.0050 | mg/L | SW846 6010B | 04/15-04/18/02 | EXP7N1A |
| | | Dilution Fac | tor: 1 | | | |
| Magnesium | 111 | 5.0 | mcr/T. | SW846 6010B | 04/15-04/18/02 | RYP7N1 A |
| | | Dilution Fac | tor: 1 | | 01/20 01/20/02 | |
| Cadium | 104 | FO | / T | | 04/15 04/10/00 | |
| Sourum | 104 | Dilution Fac | шg/ц | 2M840 00IUB | 04/15-04/18/02 | KXP/NIA |
| | | Dilución fac | | | | |
| Lead | 0.014 | 0.0030 | mg/L | SW846 6010B | 04/15-04/18/02 | EXP7N1A |
| | | Dilution Fac | tor: 1 | | | |
| Selenium | 0.040 | 0,0050 | mcr/T. | SW846 6010B | 04/15-04/18/02 | RXP7N1 A |
| | | Dilution Fact | tor: 1 | | 01/10/01/10/02 | |

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CONOCO INC.

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: I2D110168-001 Work Order #...: EXP7N Date Sampled...: 04/09/02 13:45 Date Received..: 04/11/02 Matrix..... WATER

| | | | | | PREPARATION- | PREP |
|------------------|--------|-------------|----------|--------------|----------------|---------|
| PARAMETER | RESULT | <u>RL</u> | UNITS | METHOD | ANALYSIS DATE | BATCH # |
| Chloride | 475 | 100 | mg/L | MCAWW 300.0A | 04/11/02 | 2102184 |
| | Di | lution Fact | tor: 100 | | | |
| Nitrate | 36.9 | 5.0 | mg/L | MCAWW 300.0A | 04/11/02 | 2102186 |
| | Di | lution Fact | tor: 10 | | | |
| Sulfate | 1720 | 100 | mg/L | MCAWW 300.0A | 04/11/02 | 2102188 |
| | Di | lution Fact | cor: 100 | | | |
| Total Alkalinity | 74.7 | 5.0 | mg/L | MCAWW 310.1 | 04/18/02 | 2108409 |
| | Di | lution Fact | or: 1 | | | |
| Total Dissolved | 3940 | 40.0 | mg/L | MCAWW 160.1 | 04/12-04/13/02 | 2102385 |
| Solids | | | | | | |

Dilution Factor: 1
Client Sample ID: MW-3

GC/MS Volatiles

| Lot-Sample #: | I2D110168-002 | Work Order #: | EXP771AC | Matrix WATER |
|------------------|----------------|----------------|------------|--------------|
| Date Sampled: | 04/09/02 14:30 | Date Received: | 04/11/02 | |
| Prep Date: | 04/19/02 | Analysis Date: | 04/19/02 | |
| Prep Batch #: | 2112515 | | | |
| Dilution Factor: | 1 | Method: | SW846 8260 | В |
| | | | | |
| | | | REPORTING | |
| PARAMETER | | RESULT | LIMIT | UNITS |
| Benzene | | ND | 1.0 | ug/L |
| Ethylbenzene | | ND | 1.0 | ug/L |
| Toluene | | ND | 1.0 | ug/L |
| Xylenes (total) | | ND | 2.0 | ug/L |
| | | | | |
| | | | | |

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| | PERCENT | RECOVERY | | |
|-----------------------|----------|------------|--|--|
| SURROGATE | RECOVERY | LIMITS | | |
| 4-Bromofluorobenzene | 122 | (75 - 133) | | |
| Toluene-d8 | 111 | (86'- 126) | | |
| Dibromofluoromethane | 99 | (76 - 130) | | |
| 1,2-Dichloroethane-d4 | 101 | (53 - 154) | | |

Client Sample ID: MW-3

TOTAL Metals

Lot-Sample #...: I2D110168-002 Date Sampled...: 04/09/02 14:30 Date Received..: 04/11/02

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Matrix....: WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | | PREPARATION- ANALYSIS DATE | WORK <u>ORDER #</u> |
|-------------------------|------------------|---------------------------------|----------------------|---------|-------|-------------------------------|------------------------|
| Prep Batch # Mercury | .: 2101377 ND | 0.00020 Dilution Facto | mg/L pr: 1 | SW846 | 7470A | 04/11-04/12/02 | EXP771AR |
| Prep Batch # Silver | .: 2105291 ND | 0.0050 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AL |
| Arsenic | ND | 0.010 Dilution Facto | mg/L pr: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AD |
| Barium | ND | 0.20 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AE |
| Calcium | 846 | 25.0 Dilution Facto | mg/L or: 5 | SW846 6 | 5010B | 04/15-04/19/02 | EXP771AG |
| Cadmium | ND | 0.0020 Dilution Facto | mg/L pr: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AF |
| Chromium | ND | 0.0050 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AN |
| Magnesium | 11.5 | 5.0 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AJ |
| Sodium | 12.3 | 5.0 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AM |
| Lead | 0.0090 | 0.0030 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | <u>EXP</u> 771AH |
| Selenium | 0.010 | 0.0050 Dilution Facto | mg/L or: 1 | SW846 6 | 5010B | 04/15-04/18/02 | EXP771AK |

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: I2D110168-002 Work Order #...: EXP77 Matrix.. Date Sampled...: 04/09/02 14:30 Date Received..: 04/11/02

Matrix..... WATER

| PARAMETER | RESULT | <u>RL</u> | UNITS | METHOD | | PREPARATION- ANALYSIS DATE | PREP BATCH # |
|---------------------------|---------------------|---------------------------|-----------------------|--------|--------|-------------------------------|-----------------|
| Chloride | 255 Dilu | 100 tion Facto | mg/L r: 100 | MCAWW | 300.0A | 04/11/02 | 2102184 |
| Nitrate | 9.5 Dilu | 0.50 tion Facto | mg/L r: 1 | MCAWW | 300.0A | 04/11/02 | 2102186 |
| Sulfate | 1320 Dilu | 100 tion Facto | mg/L r: 100 | MCAWW | 300.0A | 04/11/02 | 2102188 |
| Total Alkalinity | 91.5 Dilu | 5.0 tion Facto | mg/L r: 1 | MCAWW | 310.1 | 04/18/02 | 2108409 |
| Total Dissolved Solids | 3160 | 40.0 | mg/L | MCAWW | 160.1 | 04/12-04/13/02 | 2102385 |
| | Dilu | tion Facto | r: 1 | | | | |

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(53 - 154)

Client Sample ID: MW-4

GC/MS Volatiles

| Lot-Sample #: I2D110168-00 | 3 Work Order #: | EXP791AC | Matrix: WATER |
|----------------------------|-------------------|------------|---------------|
| Date Sampled: 04/09/02 15: | 05 Date Received: | 04/11/02 | |
| Prep Date: 04/19/02 | Analysis Date: | 04/19/02 | |
| Prep Batch #: 2112515 | | | |
| Dilution Factor: 1 | Method | SW846 8260 | B |
| | | | |
| | | REPORTING | |
| PARAMETER | RESULT | LIMIT | UNITS |
| Benzene | ND | 1.0 | ug/L |
| Ethylbenzene | ND | 1.0 | ug/L |
| Toluene | ND | 1.0 | ug/L |
| Xylenes (total) | ND | 2.0 | ug/L |
| | | | |
| | PERCENT | RECOVERY | |
| SURROGATE | RECOVERY | LIMITS | |
| 4-Bromofluorobenzene | 120 | (75 - 133) | |
| Toluene-d8 | 117 | (86 - 126) | |
| Dibromofluoromethane | 102 | (76 - 130) | |

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1,2-Dichloroethane-d4

Client Sample ID: MW-4

TOTAL Metals

- T2D110168-003 Sample #

Matrix. - WATER

| Dote Campled | - 04/09/02 | 15.05 Date I | Peceived | • 04/11/02 | | MALLAN |
|--------------|------------|---------------------------------|----------------------|-------------|----------------|----------|
| Date Sampicu | 04/05/02 | REPORTING | 3 | | PREPARATION- | WORK |
| PARAMETER | RESULT | LIMIT | UNITS | METHOD | ANALYSIS DATE | ORDER # |
| Prep Batch # | : 2101377 | | | | | |
| Mercury | ND | 0.00020 Dilution Fact | mg/L or: 1 | SW846 7470A | 04/11-04/12/02 | EXP791AR |
| Prep Batch # | : 2105291 | | | | | |
| Silver | ND | 0.0050 Dilution Fact | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AL |
| Arsenic | ND | 0.010 Dilution Fact | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AD |
| Barium | ND | 0.20 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AE |
| Calcium | 716 | 25.0 Dilution Factor | mg/L or: 5 | SW846 6010B | 04/15-04/19/02 | EXP791AG |
| Cadmium | ND | 0.0020 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AF |
| Chromium | ND | 0.0050 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AN |
| Magnesium | 40.7 | 5.0 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AJ |
| Sodium | 10.5 | 5.0 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AM |
| Lead | 0.0034 | 0.0030 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXP791AH |
| Selenium | 0.017 | 0.0050 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | KXP791AK |
| | | | | | | |

CONOCO INC.

Client Sample ID: MW-4

General Chemistry

 Lot-Sample #...: I2D110168-003
 Work Order #...: EXP79

 Date Sampled...: 04/09/02 15:05
 Date Received..: 04/11/02

Matrix..... WATER

| PARAMETER | RESULT | <u>RL</u> | UNITS | METHOD | PREPARATION- ANALYSIS DATE | PREP BATCH # |
|---------------------------|-------------------|----------------------------|-------------------------|--------------|-------------------------------|-----------------|
| Chloride | 211 Di | 100 lution Fact | mg/L tor: 100 | MCAWW 300.0A | 04/11/02 | 2102184 |
| Nitrate | 7.7 Di | 0.50 lution Fact | mg/L tor: 1 | MCAWW 300.0A | 04/11/02 | 2102186 |
| Sulfate | 1360 Di | 100 lution Fact | mg/L tor: 100 | MCAWW 300.0A | 04/11/02 | 2102188 |
| Total Alkalinity | 107 Di | 5.0 Lution Fact | mg/L tor: 1 | MCAWW 310.1 | 04/18/02 | 2108409 |
| Total Dissolved Solids | 2930 | 40.0 | mg/L | MCAWW 160.1 | 04/12-04/13/02 | 2102385 |
| | Di | lution Fact | cor: 1 | | | |

Client Sample ID: MW-5

GC/MS Volatiles

| | | REPORTING |
|-----------------------|----------|-------------|
| PARAMETER | RESULT | LIMIT UNITS |
| Benzene | ND | 1.0 ug/L |
| Ethylbenzene | ND | 1.0 ug/L |
| Toluene | ND | 1.0 ug/L |
| Xylenes (total) | ND | 2.0 ug/L |
| | PERCENT | RECOVERY |
| SURROGATE | RECOVERY | LIMITS |
| 4-Bromofluorobenzene | 122 | (75 - 133) |
| Toluene-d8 | 111 | (86 - 126) |
| Dibromofluoromethane | 101 | (76 - 130) |
| 1,2-Dichloroethane-d4 | 98 | (53 - 154) |

Client Sample ID: MW-5

TOTAL Metals

Lot-Sample #...: I2D110168-004 Date Sampled...: 04/09/02 16:10 Date Received..: 04/11/02

| Matrix. | | | | | | | : | WATER |
|---------|--|--|--|--|--|--|---|-------|
|---------|--|--|--|--|--|--|---|-------|

| PARAMETER | RESULT | REPORTING LIMIT UNITS | METHOD | PREPARATION- WORK ANALYSIS DATE ORDER # |
|---------------------------------|-----------------|--|-------------|--|
| Prep Batch #. Mercury | : 2101377 ND | 0.00020 mg/L Dilution Factor: 1 | SW846 7470A | 04/11-04/12/02 EXP8C1AR |
| Prep Batch # Silver | : 2105291 ND | 0.0050 mg/L Dilution Factor: 1 | SW846 6010B | 04/15-04/18/02 EXP8C1AL |
| Arsenic | ND | 0.010 mg/L Dilution Factor: 1 | SW846 6010B | 04/15-04/18/02 EXP8C1AD |
| Barium | ND | 0.20 mg/L Dilution Factor: 1 | SW846 6010B | 04/15~04/18/02 EXP8C1AE |
| Calcium | 943 | 25.0 mg/L Dilution Factor: 5 | SW846 6010B | 04/15-04/19/02 EXP8C1AG |
| Cadmium | ND | 0.0020 mg/L Dilution Factor: 1 | SW846 6010B | 04/15~04/18/02 EXP8C1AF |
| Chromium | ND | 0.0050 mg/L Dilution Factor: 1 | SW846 6010B | 04/15-04/18/02 EXP8C1AN |
| Magnesium | 301 | 5.0 mg/L Dilution Factor: 1 | SW846 6010B | 04/15~04/18/02 EXP8C1AJ |
| Sodium | 291 | 5.0 mg/L Dilution Factor: 1 | SW846 6010B | 04/15-04/18/02 EXP8C1AM |
| Lead | 0.0096 | 0.0030 mg/L Dilution Factor: 1 | SW846 6010B | 04/15-04/18/02 EXP8C1AH |
| Selenium | 0.029 | 0.0050 mg/L Dilution Factor: 1 | SW846 6010B | 04/15~04/18/02 EXP8C1AK |

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CONOCO INC.

Client Sample ID: MW-5

General Chemistry

Lot-Sample #...: I2D110168-004 Work Order #...: EXP8C Date Sampled...: 04/09/02 16:10 Date Received..: 04/11/02 Matrix..... WATER

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION- ANALYSIS DATE | PREP BATCH # |
|---------------------------|-------------|------------|---------|--------------|-------------------------------|-----------------|
| Chloride | 1410 | 500 | mg/L | MCAWW 300.0A | 04/11/02 | 2102184 |
| Nitrate | 14 0 | 5 0 | mcr/T. | MCAWW 300.0A | 04/11/02 | 2102186 |
| AILIAL | Di | lution Fac | tor: 10 | | | |
| Sulfate | 1710 | 100 | mg/L | MCAWW 300.0A | 04/11/02 | 2102188 |
| Total Alkalinity | 68 1 | 5 0 | mct/T. | MCAWW 310.1 | 04/18/02 | 2108409 |
| Iotal Anallinty | Di | lution Fac | tor: 1 | Income Stort | 01/20/02 | 2100103 |
| Total Dissolved Solids | 5780 | 40.0 | mg/L | MCAWW 160.1 | 04/12-04/13/02 | 2102385 |
| | Di | lution Fac | tor: 1 | | | |

Client Sample ID: MW-6

GC/MS Volatiles

Lot-Sample #...: I2D110168-005 Work Order #...: EXP8D1AC Matrix..... WATER Date Sampled...: 04/09/02 16:45 Date Received..: 04/11/02 **Analysis** Date..: 04/19/02 **Prep Date....:** 04/19/02 Prep Batch #...: 2112515 Method....: SW846 8260B Dilution Factor: 1 REPORTING PARAMETER UNITS RESULT LIMIT ug/L 1.0 Benzene ND ND 1.0 ug/L Ethylbenzene ND 1.0 ug/L Toluene ug/L Xylenes (total) ND 2.0 PERCENT RECOVERY LIMITS SURROGATE RECOVERY 4-Bromofluorobenzene (75 - 133) 122

113

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96

(86 - 126)

(76 - 130)

(53 - 154)

Toluene-d8

Dibromofluoromethane

1,2-Dichloroethane-d4

Client Sample ID: MW-6

TOTAL Metals

Lot-Sample #...: I2D110168-005 Date Sampled...: 04/09/02 16:45 Date Received..: 04/11/02

Matrix....: WATER

| | | | • | | | | | | |
|----------|---|-----------|--------------------------|-------------|-------|--------|-------------------------------|---------|---------|
| q | ARAMETER | PESIILT | REPORTING | INTTS | METHO | n | PREPARATION- ANALYSIS DATE | WORK | # |
| <u>+</u> | Alter | | | ONTID | | | | <u></u> | <u></u> |
| P | rep Batch # | : 2101377 | | | | | | | |
| М | ercury | ND | 0.00020 | mg/L | SW846 | 7470A | 04/11-04/12/02 | EXP8D1 | .AR |
| | | | Dilution Facto | r: 1 | | | | | |
| | | | | | | | | | |
| Р | rep Batch #; | 2105291 | | | | | | | |
| S | ilver | ND | 0.0050 | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | AL |
| | | | Dilution Facto | r: 1 | | | | | |
| _ | · • | | | <i>/</i> _ | | 601 AD | 04/15 04/10/00 | | |
| A | rsenic | ND | 0.010 Dilution Frote | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8DI | AD |
| | | | Dilucion Facto | I: I | | | | | |
| в | arium | ND | 0.20 | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | AE |
| | | : | Dilution Facto | r: 1 | | | | | |
| - | | | | 1- | ~~~~~ | 601 AD | | | |
| C | alcium | 652 | 25.0 | mg/L | SW846 | 6010B | 04/15-04/19/02 | RX58DT | AG |
| | | | Difution Facto | I: 5 | | | | | |
| С | admium | ND | 0.0020 | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | AF |
| | | 1 | Dilution Facto | r: 1 | | | | | |
| | | | | 1- | | | | | |
| C. | hromium | ND | 0.0050 Dilution Resta | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | AN |
| | | | Dilution Facto | r: 1 | | | | | |
| M | agnesium | 43.4 | 5.0 | mq/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | ЪJ |
| | - | 1 | Dilution Facto | r: 1 | | | | | |
| | | | | | | | | | |
| S | odium | 10.5 | 5.0 | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | AM |
| | | 1 | Dilution Facto | r: 1 | | | | | |
| L | ead | 0.011 | 0.0030 | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D1 | AH |
| | | 1 | Dilution Facto | r: 1 | | | | | |
| | | | | | | | | | |
| S | elenium | ND | 0.0050 | mg/L | SW846 | 6010B | 04/15-04/18/02 | EXP8D17 | AK |
| | | 1 | Dilution Facto: | r: 1 | | | | | |

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CONOCO INC.

Client Sample ID: MW-6

General Chemistry

Lot-Sample #...: I2D110168-005 Work Order #...: EXP8D Date Sampled...: 04/09/02 16:45 Date Received..: 04/11/02 Matrix..... WATER

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION- ANALYSIS DATE | PREP <u>BATCH #</u> |
|------------------|------------|-------------|--------------|--------------|-------------------------------|------------------------|
| Chloride | 120 Di | 100 | mg/L | MCAWW 300.0A | 04/11/02 | 2102184 |
| | Di | JULION FACT | LOF: 100 | | | |
| Nitrate | 5.2 | 0.50 | mg/L | MCAWW 300.0A | 04/11/02 | 2102186 |
| | Di | lution Fact | cor: 1 | | | |
| Gulfata | 1270 | 100 | mer/T. | MCAWW 300 0A | 04/11/02 | 2102188 |
| Suilace | 1370 Di | lution Fact | or: 100 | ACAMA SVV.VA | 01,11,02 | 2102100 |
| | | | | | | |
| Total Alkalinity | 81.6 | 5.0 | mg/L | MCAWW 310.1 | 04/18/02 | 2108409 |
| | Di | lution Fact | or: 1 | | | |
| Total Dissolved | 2660 | 40.0 | mg/L | MCAWW 160.1 | 04/12-04/13/02 | 2102385 |
| Solids | | | , - _ | | | |
| | Di | lution Fact | cor: 1 | | | |

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CONOCO INC.

Client Sample ID: DUPLICATE

GC/MS Volatiles

| Lot-Sample #: | I2D110168-006 | Work Order #: | EXP8G1AC | Matrix WATER |
|------------------|----------------|----------------|------------|--------------|
| Date Sampled: | 04/09/02 14:00 | Date Received: | 04/11/02 | |
| Prep Date: | 04/19/02 | Analysis Date: | 04/19/02 | |
| Prep Batch #: | 2112515 | | | |
| Dilution Factor: | 1 | Method: | SW846 8260 | В |
| | | | DEDODETNO | |
| | | | REPORTING | |
| PARAMETER | | RESULT | LIMIT | UNITS |
| Benzene | | ND | 1.0 | ug/L |
| Ethylbenzene | | ND | 1.0 | ug/L |
| Toluene | | ND | 1.0 | ug/L |
| Xylenes (total) | | ND | 2.0 | ug/L |
| | | PERCENT | RECOVERY | |

| SURROGATE | RECOVERY | LIMITS |
|-----------------------|----------|------------|
| 4-Bromofluorobenzene | 118 | (75 - 133) |
| Toluene-d8 | 112 | (86 - 126) |
| Dibromofluoromethane | 98 | (76 - 130) |
| 1,2-Dichloroethane-d4 | 98 | (53 - 154) |
| 1,2-Dichioroechane-04 | 98 | (55 - 154) |

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CONOCO INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

| Lot-Sample #: I2D110168-007 | Work Order #: | EXP8W1AC | Matrix: WATER |
|------------------------------|----------------|------------|---------------|
| Date Sampled: 04/09/02 18:00 | Date Received: | 04/11/02 | |
| Prep Date: 04/19/02 | Analysis Date: | 04/19/02 | |
| Prep Batch #: 2112515 | | | |
| Dilution Factor: 1 | Method | SW846 8260 | В |
| | | REPORTING | |
| PARAMETER | RESULT | LIMIT | UNITS |
| Benzene | ND | 1.0 | ug/L |
| Ethylbenzene | ND | 1.0 | ug/L |
| Toluene | ND | 1.0 | ug/L |
| Xylenes (total) | ND | 2.0 | ug/L |
| | PERCENT | RECOVERY | |
| SURROGATE | RECOVERY | LIMITS | |
| 4-Bromofluorobenzene | 119 | (75 - 133) | |
| Toluene-d8 | 112 | (86 - 126) | |
| Dibromofluoromethane | 101 | (76 - 130) | |
| 1,2-Dichloroethane-d4 | 97 | (53 - 154) | |
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METHOD BLANK REPORT

GC/MS Volatiles

| Client Lot #: I2D110168 | Work Order | #: EX9JF1AA | Matrix: WATE | IR |
|-----------------------------|------------|--------------------|--------------|----|
| MB Lot-Sample #: I2D220000- | 515 | | | |
| | Prep Date. | : 04/19/02 | | |
| Analysis Date: 04/19/02 | Prep Batch | #: 2112515 | | |
| Dilution Factor: 1 | | | | |
| | | | | |
| | | REPORTING | | |
| PARAMETER | RESULT | LIMIT UNI | TS METHOD | |

| PARAMETER | RESULT | LIMIT | UNITS | METHOD |
|-----------------------|----------|----------|-------|-------------|
| Benzene | ND | 1.0 | ug/L | SW846 8260B |
| Ethylbenzene | ND | 1.0 | ug/L | SW846 8260B |
| Toluene | ND | 1.0 | ug/L | SW846 8260B |
| Xylenes (total) | ND | 2.0 | ug/L | SW846 8260B |
| | PERCENT | RECOVER | Y | |
| SURROGATE | RECOVERY | LIMITS | | |
| 4-Bromofluorobenzene | 125 | (75 - 1 | 33) | |
| Toluene-d8 | 112 | (86 - 12 | 26) | |
| Dibromofluoromethane | 101 | (76 - 1 | 30) | |
| 1,2-Dichloroethane-d4 | 104 | (53 - 1 | 54) | |
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NOTE (S) :

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METHOD BLANK REPORT

TOTAL Metals

| Client Lot #. | : I2D11016 | 8 | | | Matrix WA | TER |
|--------------------------|-------------------|---|---------------------------------|------------------------|-------------------------------|-----------------|
| PARAMETER | RESULT | REPORTING | UNITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
| MB Lot-Sample Mercury | #: 12D11000 ND | 0-377 Prep Ba 0.00020 Dilution Facto | t ch #: mg/L or: 1 | 2101377 SW846 74707 | A 04/11-04/12/02 | EXQ2R1AD |
| MB Lot-Sample Arsenic | #: 12D15000 ND | 0-291 Prep Ba 0.010 Dilution Facto | tch #: mg/L pr: 1 | 2105291 SW846 6010E | 3 04/15-04/18/02 | EXW1D1AE |
| Barium | ND | 0.20 Dilution Facto | mg/L pr: 1 | SW846 6010E | 3 04/15-04/18/02 | EXWIDIAF |
| Cadmium | ND | 0.0020 Dilution Facto | mg/L pr: 1 | SW846 6010E | 3 04/15-04/18/02 | EXW1D1AH |
| Calcium | ND | 5.0 Dilution Facto | mg/L pr: 1 | SW846 6010E | 8 04/15-04/18/02 | EXW1D1AJ |
| Chromium | ND | 0.0050 Dilution Facto | mg/L pr: 1 | SW846 6010E | 04/15-04/18/02 | EXW1D1A3 |
| Lead | ND | 0.0030 Dilution Facto | mg/L pr: 1 | SW846 6010B | 04/15-04/18/02 | EXW1D1AA |
| Magnesium | ND | 5.0 Dilution Facto | mg/L or: 1 | SW846 6010B | 04/15-04/18/02 | EXW1D1AN |
| Selenium | ND | 0.0050 Dilution Facto | mg/L pr: 1 | SW846 6010B | 04/15-04/18/02 | EXW1D1AU |
| Silver | ND | 0.0050 Dilution Facto | mg/L pr: 1 | SW846 6010B | 04/15-04/18/02 | EXW1D1AV |
| Sodium | ND | 5.0 Dilution Facto | mg/L pr: 1 | SW846 6010B | 04/15-04/18/02 | EXW1D1AW |

NOTE(S):

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METHOD BLANK REPORT

General Chemistry

Client Lot #...: I2D110168

Matrix....: WATER

| PARAMETER Chloride | <u>RESULT</u> ND | REPORTING LIMIT UNITS METHOD Work Order #: EXRXN1AA MB Lot-Samp 1.0 mg/L MCAWW 300.0A Dilution Factor: 1 | .e #: | PREPARATION- ANALYSIS DATE I2D120000-184 04/11/02 | PREP <u>BATCH #</u> 2102184 |
|-----------------------|---------------------|--|-------|--|-----------------------------------|
| Nitrate | ND | Work Order #: EXRXL1AA MB Lot-Sampl 0.50 mg/L MCAWW 300.0A Dilution Factor: 1 | .e #: | I2D120000-186 04/11/02 | 2102186 |
| Sulfate | ND | Work Order #: EXRXM1AA MB Lot-Sampl 1.0 mg/L MCAWW 300.0A Dilution Factor: 1 | .e #: | I2D120000-188 04/11/02 | 21021 <u></u> 88 |
| Total Alkalinity | ND | Work Order #: EX5A31AA MB Lot-Sampl 5.0 mg/L MCAWW 310.1 Dilution Factor: 1 | e #: | I2D180000-409 04/18/02 | 2108409 |
| Total Dissolved | | Work Order #: EXT4J1AA MB Lot-Sampl | e #: | I2D120000-385 | |
| JULIUS | ND | 40.0 mg/L MCAWW 160.1 Dilution Factor: 1 | | 04/12-04/13/02 | 2102385 |

NOTE (S) :

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

| Client Lot #: I2D110168 | Work Order | #: EX9JF1AC | Matrix WATER |
|--------------------------------|-------------|---------------------|--------------|
| LCS Lot-Sample#: I2D220000-515 | | | |
| Prep Date: 04/19/02 | Analysis Da | te: 04/19/02 | |
| Prep Batch #: 2112515 | | | |
| Dilution Factor: 1 | | | |
| | | | |
| | PERCENT | RECOVERY | |
| PARAMETER | RECOVERY | LIMITS | METHOD |
| Benzene | 106 | (86 - 124) | SW846 8260B |
| 1,1-Dichloroethene | 80 | (64 - 120) | SW846 8260B |
| Toluene | 106 | (80 - 115) | SW846 8260B |
| Trichloroethene | 89 | (80 - 112) | SW846 8260B |
| Chlorobenzene | 97 | (80 - 115) | SW846 8260B |
| | | PERCENT | RECOVERY |
| SURROGATE | | RECOVERY | LIMITS |
| 4-Bromofluorobenzene | | 126 | (75 - 133) |
| Toluene-d8 | | 113 | (86 - 126) |
| Dibromofluoromethane | | 98 | (76 - 130) |
| 1,2-Dichloroethane-d4 | | 99 | (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

TOTAL Metals

| Client Lot #: | I2D110168 | | | Matrix | : WATER |
|-----------------------------|---------------------|--|--|-------------------------------|--------------|
| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
| LCS Lot-Sample#: Mercury | I2D110000- 103 | 377 Prep Ba (81 - 120) Dilution Facto | tch #: 2101377 SW846 7470A pr: 1 | 04/11-04/12/02 | EXQ2R1AF |
| LCS Lot-Sample#: Lead | I2D150000- 97 | 291 Prep Ba (80 - 120) Dilution Facto | t ch #: 2105291 SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1AC |
| Arsenic | 93 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1CH |
| Barium | 97 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1CJ |
| Cadmium | 97 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1CL |
| Calcium | 100 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1CM |
| Magnesium | 96 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1CQ |
| Selenium | 97 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXWIDICW |
| Silver | 96 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1CX |
| Sodium | 97 | (80 - 120) Dilution Facto | SW846 6010B pr: 1 | 04/15-04/18/02 | EXW1D1C0 |
| Chromium | 96 | (80 - 120) Dilution Facto | SW846 6010B r: 1 | 04/15-04/18/02 | EXW1D1C5 |

NOTE (S) :

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

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

| Client Lot #: I2D1103 | 168 Matrix: WAT | ER |
|--|--|------------------|
| PERCENT PARAMETER RECOVERY Chloride 92 | RECOVERYPREPARATION-PREPLIMITSMETHODANALYSIS DATEBATCHWork Order #: EXRXNIACLCS Lot-Sample#: I2D120000-184(80 - 120)MCAWW 300.0A04/11/02210218Dilution Factor: 1 | _ <u>#</u> 34 |
| Nitrate 94 | Work Order #: EXRXL1AC LCS Lot-Sample#: I2D120000-186 (80 - 120) MCAWW 300.0A 04/11/02 210218 Dilution Factor: 1 | 36 |
| Sulfate 96 | Work Order #: EXRXM1AC LCS Lot-Sample#: I2D120000-188 (80 - 120) MCAWW 300.0A 04/11/02 210218 Dilution Factor: 1 | 38 |
| Total Alkalinity 99 | Work Order #: EX5A31AC LCS Lot-Sample#: I2D180000-409 (80 - 120) MCAWW 310.1 04/18/02 210840 Dilution Factor: 1 |)9 |
| Total Dissolved | Work Order #: EXT4J1AC LCS Lot-Sample#: I2D120000-385 | |
| 97 | (87 - 113) MCAWW 160.1 04/12-04/13/02 210238 Dilution Factor: 1 | 15 |

NOTE(S):

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

 Client Lot #...:
 I2D110168
 Work Order #...:
 EXR401AF-MS
 Matrix....:
 WATER

 MS Lot-Sample #:
 I2D120138-001
 EXR401AG-MSD
 EXR401AG-MSD
 Date Sampled...:
 04/11/02
 09:15
 Date Received..:
 04/12/02

 Prep Date.....:
 04/19/02
 Analysis Date..:
 04/19/02
 Prep Date...
 04/19/02

 Prep Batch #...:
 2112515
 Dilution Factor:
 100
 100
 100

| | PERCENT | RECOVERY | | RPD | |
|--------------------|----------|------------|-----|---------|-------------|
| PARAMETER | RECOVERY | LIMITS | RPD | LIMITS | METHOD |
| Benzene | 103 | (86 - 124) | | | SW846 8260B |
| | 108 | (86 - 124) | 2.0 | (0-6.0) | SW846 8260B |
| 1,1-Dichloroethene | 80 | (64 - 120) | | | SW846 8260B |
| | 83 | (64 - 120) | 3.2 | (0-8.0) | SW846 8260B |
| Toluene | 100 | (80 - 115) | | | SW846 8260B |
| | 106 | (80 - 115) | 3.0 | (0-11) | SW846 8260B |
| Trichloroethene | 90 | (80 - 112) | | | SW846 8260B |
| | 94 | (80 - 112) | 3.7 | (0-7.0) | SW846 8260B |
| Chlorobenzene | 99 | (80 - 115) | | | SW846 8260B |
| | 103 | (80 - 115) | 4.0 | (0-11) | SW846 8260B |

| | PERCENT | RECOVERY |
|-----------------------|----------|------------|
| SURROGATE | RECOVERY | LIMITS |
| 4-Bromofluorobenzene | 121 | (75 - 133) |
| | 123 | (75 - 133) |
| Toluene-d8 | 113 | (86 - 126) |
| | 112 | (86 - 126) |
| Dibromofluoromethane | 103 | (76 - 130) |
| | 98 | (76 - 130) |
| 1,2-Dichloroethane-d4 | 100 | (53 - 154) |
| | 98 | (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

TOTAL Metals

· · · ----

| Client Lot # Date Sampled | : I2D11 : 04/08 | 0168 /02 04:00 Date R 0 | eceived. | .: 04/08/02 | Matrix | : WATER |
|------------------------------|----------------------------|-----------------------------------|---------------|-------------|-------------------------------|------------------------|
| PARAMETER | PERCENT <u>RECOVERY</u> | RECOVERY LIMITS RPD | RPD LIMITS | METHOD | PREPARATION- ANALYSIS DATE | WORK <u>ORDER #</u> |
| MS Lot-Sample | e #: 12D08 | 0149-005 Prep Ba | atch # | .: 2101377 | | |
| Mercury | 91 | (75 - 125) | | SW846 7470A | 04/11-04/12/02 | EXJR31AQ |
| | 94 | (75 - 125) 2.9 | (0-20) | SW846 7470A | 04/11-04/12/02 | EXJR31AR |
| | | Dilution Fact | or: 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 #...: I2D110168 Date Sampled...: 04/04/02 18:00 Date Received..: 04/06/02

| Matrix. | • | | | | | | | | : | WATER |
|---------|---|--|--|--|--|--|--|--|---|-------|
|---------|---|--|--|--|--|--|--|--|---|-------|

| | PERCENT | RECOVERY RPD | | PREPARATION- | WORK |
|-----------------|-------------------|--|-------------|----------------|-----------------|
| PARAMETER | RECOVERY | LIMITS RPD LIMITS | METHOD | ANALYSIS DATE | ORDER # |
| MC Tot Com | | 0147 001 Prop Botch # | . 2105201 | | |
| Arsenic | 03 16 #: 12D00 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | בצעוויין אא |
| AIBCHIC | 92 | (75 - 125) (75 - 125) 0.60 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHOT1 AP |
| | 52 | Dilution Factor: 1 | | 04/10/01/10/01 | Daiyitat |
| | | | | | |
| Barium | 95 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHQTIAR |
| | 96 | (75 - 125) 0.27 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHQUIAT |
| | | Dilution Factor: 1 | | | |
| Cadmium | 93 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHQT1A0 |
| | 94 | (75 - 125) 0.10 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHQT1A1 |
| | | Dilution Factor: 1 | | | |
| Calcium | 88 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHOT1A3 |
| | 90 | (75 - 125) 0.54 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHOT1A4 |
| | | Dilution Factor: 1 | | | ~ |
| Chromium | 93 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHOTIDN |
| CIII OIIII UIII | 93 | (75 - 125) 0.27 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHOTIDE |
| | | Dilution Factor: 1 | | | |
| Iend | 05 | (75 125) | SWRAC COLOR | 04/15 04/19/02 | |
| Leau | 95 | (75 - 125) (75 - 125) = 0.11 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHQUIAG |
| | 94 | (75 - 125) 0.11 $(0-20)$ | 24040 0010B | 04/15-04/10/02 | EVUÕTTVU |
| | | Dilución faccol. I | | | |
| Magnesium | 93 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHQT1CG |
| | 93 | (75 - 125) 0.31 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHQT1CH |
| | | Dilution Factor: 1 | | | |
| Selenium | 96 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHOT1C0 |
| | 95 | (75 - 125) 0.35 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHQT1C1 |
| | | Dilution Factor: 1 | | | - |
| Silver | 95 | (75 - 125) | SW846 6010B | 04/15-04/18/02 | EXHOT1C3 |
| | 96 | (75 - 125) 0.58 (0-20) | SW846 6010B | 04/15-04/18/02 | EXHOT1C4 |
| | | Dilution Factor: 1 | | ,,,, | |
| Sodium | 07 | (75 - 125) | CHOAC COLOD | 04/15 04/10/00 | EVHOTI CC |
| Sourain | 97 98 | (75 - 125) (75 - 125) (0-21 (0-20) | CMBAC COTOR | 04/15-04/18/02 | EXHQTIC6 |
| | 20 | (75 - 125) 0.51 (0-20) | SW040 OULUB | 04/10-04/18/02 | EVUÓLIC/ |
| | | Dilución Factor: 1 | | | |

NOTE(S):

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MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

| Client Lot # | : I2D1 | 10168 | | Matrix WATER |
|--------------|----------|------------|-----------------------------|-----------------------------|
| Date Sampled | l: 04/0 | 9/02 13:45 | Date Received: 04/11/02 | |
| | PERCENT | RECOVERY | RPD | PREPARATION- PREP |
| PARAMETER | RECOVERY | LIMITS | RPD LIMITS METHOD | ANALYSIS DATE BATCH # |
| Chloride | | WO#: | EXP7N1A2-MS/EXP7N1A3-MSD MS | Lot-Sample #: I2D110168-001 |
| | 105 | (75 - 125) | MCAWW 300.0A | 04/11/02 2102184 |
| | 104 | (75 - 125) | 0.20 (0-20) MCAWW 300.0A | 04/11/02 2102184 |
| | | Dilut | ion Factor: 100 | |
| Nitrate | | WO#: | EXP7N1AW-MS/EXP7N1AX-MSD MS | Lot-Sample #: I2D110168-001 |
| | 108 | (75 - 125) | MCAWW 300.0A | 04/11/02 2102186 |
| | 107 | (75 - 125) | 0.82 (0-20) MCAWW 300.0A | 04/11/02 2102186 |
| | | Dilut | ion Factor: 1 | |
| Sulfate | | WO#: | EXP7N1A0-MS/EXP7N1A1-MSD MS | Lot-Sample #: I2D110168-001 |
| | 108 | (75 - 125) | MCAWW 300.0A | 04/11/02 2102188 |
| | 107 | (75 - 125) | 0.70 (0-20) MCAWW 300.0A | 04/11/02 2102188 |
| | | Dilut | ion Factor: 100 | |

NOTE (S) :

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SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

| Client Lot #: | I2D110168 | Work | Order | #: EX EX | QTX-SMP Matr QTX-DUP | ix: WATER | |
|------------------------|--------------|--------------|--------|-------------|-------------------------|------------------|---------|
| Date Sampled: | 04/10/02 14: | 00 Date | Receiv | ed: 04 | 1/11/02 | | |
| <pre>% Moisture:</pre> | 100 | Dilut | ion Fa | ctor: | Initia | al Wgt/Vol: | |
| | DUPLICATE | | | RPD | | PREPARATION- | PREP |
| PARAM RESULT | RESULT | UNITS | RPD | LIMIT | METHOD | ANALYSIS DATE | BATCH # |
| Total Dissolved | | | | | SD Lot-Sample #: | I2D110242-001 | |
| Solids | | | | | | | |
| 311 | 354 | mg/L | 13 | (0-20) | MCAWW 160.1 | 04/12-04/13/02 | 2102385 |
| | D | ilution Fact | or: 1 | | | | |

SAMPLE DUPLICATE EVALUATION REPORT

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General Chemistry

| Client Lot #: | I2D110168 | Work | Order | #: EX EX | P7N-SMP Matr P7N-DUP | ix: WATER | |
|------------------------|---------------|-------------|--------|-------------|-------------------------|---------------|---------|
| Date Sampled: | 04/09/02 13:4 | 5 Date | Receiv | ed: 04 | /11/02 | | |
| <pre>% Moisture:</pre> | | Dilut | ion Fa | ctor: | Initi | al Wgt/Vol: | |
| | DUPLICATE | | | RPD | | PREPARATION- | PREP |
| PARAM RESULT | RESULT | UNITS | RPD | LIMIT | METHOD | ANALYSIS DATE | BATCH # |
| Total Alkalinity | | | | | SD Lot-Sample #: | I2D110168-001 | |
| 74.7 | 73.5 | mg/L | 1.5 | (0-20) | MCAWW 310.1 | 04/18/02 | 2108409 |
| | Di | lution Fact | or: 1 | | | | |

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SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

| Client Lot # | : I2D110168 | Work | c Order | #: EX | K2AM-SMP M a K2AM-DUP | trix: WATE | R |
|----------------------------|---------------------|--------------------|------------------|-------------------|---------------------------------|------------------|---------|
| Date Sampled % Moisture | : 04/15/02 : 100 | 15:55 Date Dilu | e Receivition Fa | ved: 04 actor: | 4/17/02 Ini | tial Wgt/Vol: | |
| | DUPLICAT | E | | RPD | | PREPARATION- | PREP |
| PARAM RESULT | RESULT | UNITS | RPD | LIMIT | METHOD | ANALYSIS DATE | BATCH # |
| Total Alkali | nity | | | | SD Lot-Sample | #: I2D170183-001 | |
| 376 | 369 | mg/L | 1.9 | (0-20) | MCAWW 310.1 | 04/18/02 | 2108409 |
| | | Dilution Fa | ctor: 1 | | | | |

| Chain of Custody | | | ZXDII0/ | | E S E | VERN | 8508 | |
|---|----------------------------|---------------------------------|-----------------------------|--|---|------------------------------|--|----|
| Record | \$ # 8 0 7 4 2 8 | -002 -002 | STODY NUMBER | 26 19 5 | S | KEINI ERVICES Severn | Trent Laboratories, Inc | പ |
| STL4149 (0700). Client Maria Ferhnnlariae Inr | | Project Manager | 4 9 1 | | Date | 117897 | Parce , of | I |
| Address Addres | | Telephone Number | r (Area Code)/Fax Nu | imber 11. 11. 11. 11. 11. 11. 11. 11. 11. 11. | Lab Loc | ation | Analysis | 1 |
| LOOVE DURAS AS SEE 100 State | Zip Code | Site Contact | (cac) / 9552 | 9698-157 | 415 (| AUBUID | | |
| Albuquerque | 87112 | Rob Sengeb | ush | · | | | | |
| Project Number/Name NG0005 20 Mi NE Carlsbad, NM | | Carrier/Waybill Nui te ((fX | mber - \$ 2 5 5 7 | 192-291 | 3 | | 8 6 4 5 C 3 5 K 2 8 7 L 0 0 1 | |
| Contract/Purchase Order/Quote Number CONTRACT / PURCHASE ORDER 1 4590 | 3821617 Comprehens | ive GK Assess. | | | 80 | 078. 37403 | 6 1 0 6 1 1 3 4 T | |
| Sample I.D. Number and Description | Date Time | Sample Type | Container | s No Prese | rvative Co | ondition on Receipt/Comments | | |
| 5 - M.N | 4-9-02 1610 | WATBR | 40 BL VIA | L 4 11 | HCL Z | 10 dfuloz (a) | | |
| KW - 5 | 11:11-20-6-6 | WATER | 250 BL PLAS | STIC 1 CODO | : HRO3 | 6002 | X X | |
| 0-100 mm | 019/20-1-6 | EA 50 R V 6 5 R | 1000aL PLA | STIC 1 HOD | | | | |
| 9 - 35 3 - 12 3 | 4-9-02 11-15 | WATER WATER | 250aL PLA | 3 T C O 1 C O 1 | HN03 | | | ; |
| 9 - XH | 4-9-62 16-15 | WATER | 1000nL PLAS | SPIC 1 None | | | | |
| ···· { # # | | % ATBR | 40 RI VIA | 4 1:1 | HCL | | | 1 |
| | | garer 4 a e r r | 250 BL PLAS | | EN03 | | | |
| DUPLICATE | 4.1-42 1400 | KATER | 40aL VIAI | 111 4 11 | HCL | | | |
| Trip Blank | 4-9-02 1800 | Water | thin Via | | 1761 | | | |
| | | | | | | | | |
| | | 5 | | | | | | |
| d | | | | | | | | |
| Special Instructions 8260B BTEX; | 6010B RCRA Metal | s + Na,Ca,Ng; | IF POSSIBLE, (| CALL LAB DAY SI | IPPED BE | CAUSE NO3 has 48 hr HT | | |
| Possible Hazard Identification X Non-Hazard | 1 Irritant Doison B | Unknown | Sample Disposal | Disposal B | , Lab | Archive For Months | (A fee may be assessed if samples are retained longer than 3 months) | 1 |
| Turn Around Time Required | er | | <u>а</u> ш. | roject Specific Require | ements (Spec | ify) | · · · · · | |
| 1. Reviguished By | | 320/02 | Time 1223 | Received By He | -up | | Date 7.25. v 2 Time | 1 |
| 2. Relinquished By Kelley C, Herelenne | ~ | 1 / / 0 / 0, 2 | Time 2. $q \dot{v} \circ 0$ | Received By | 1 | ſ | Date / 11 / c2 0825 | 1 |
| 3. Relinquished By | - | Date | Time 3. | Received By | | | Date | ł |
| Comments | | | | | рана – 1 1 1 ман – 1 1 ман – 1 | | | 1. |
| DISTRIBUTION: WHITE - Stays with the Sample: CA | ANARY - Returned to Client | t with Report: PINK - | Field Copy | | | | | 1 |

| | | . | | | | | | | 85084 | |
|--|---|---------------------------------|------------------|-------------------|------------------|--------------------------|---------------|--------------------------------|---------------------------------------|--------|
| Chain of Custody Record | \$ 6007420- | CHAIN OF CU 001 | STODY RUNBA | | | FRENT Services | Severn] | Irent Labora | tories. Inc. | |
| STL4149 (0700) | | | | | | | | | | |
| Client | | Project Manager | | | Date | | • | | | |
| Hazim Technologies, Inc. | | Rob Sengeb | ush Code/Fe | . Mirahar | 03, | 21/2002 | | Page | of | |
| AUGRESS (AGAI I Amage BF Sta 146 | | I E BE I J J - | DAAA / FEAE | X INUMPER | | Location Listin | | Anal | sis | |
| | | -167 (CAE) | CAC / ABRO | 000-107 1 | 10 | - 117270 | | 1 u lu fu la la la la la la | | • |
| any and Albuquerque | ate zip code NN 87112 | Rob Sengeb | ush | ¢. | | | | | | |
| Project Number/Name NG0005 20 M1 NE Carlshad HH | Red Constraints and | Carrier Waybill Nur Fr CIV X | nber 2 35 5 | 31912 | (13) · | 30 | | 8 6 4 5 C 8 5 K 2 8 7 L 0 0 | 1 | |
| Contract/Purchase Order/Quote Number | 1500821617 Comprehensi | ve GV Assess | | | | 000ER . 37403 | | 6 1 6 | · · · · · · · · · · · · · · · · · · · | ·. |
| Sample I.D. Number and Description | Date Time | Sample Type | Contai | iners Trics No | Preservative | Condition on Rec | eipt/Comments | | · · · · · · · · · · · · · · · · · · · | |
| | | WATER | 40TL V | TAL 4 | 1.1 RCL | 1/h 212 | <u>क</u> स | | | , 1 |
| <u>[-];</u> | | WATER | 250aLP | LASTIC 1 | Conc BN03 | C1007 | | II | | |
| | 4-2-10 | KA162 | 1000 ml P | LASTIC 1 | None | | | XXXXX | | 1 |
| KK+2 | 19-11-11-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1 | WATER Based | 401L V | IAL 4 | 1:1 HCL | | | | | Ŋ |
| | 4.9-07 13:5 | WATEK Vated | 1 14001 | LASTIC 1 | LODC DAUS | | • | | | |
| HI-3 | 4.9.02 NASC | | A TEODA | TAL AL | 1,1 BCL | | 1 | | | |
| F KII - 3 | 4-9-02 1430 | WATBR | 250AL P | LASTIC 1 | Conc HN03 | | C76 | X X | | 1 |
| B HK-3 | 11-6-01 1430 | KATER | 1000al P | LASTIC 1 | Попе | | s. | XXXX | | 1 |
| | 4-9-02 15:05 | WATER Visor | 40%L V | IAL 4 | 111 HCL | | | A A | | 1 |
| | 4-4-62 1505 | VATED | 1 JAAAL | LASPTC 1 | BODA | > | | | | ī |
| | | VAIN | TRAAT | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| Special Instructions 82608 BT | EX.; 6010B RCRA Metals | + Na,Ca,Kg; | IF POSSIBLE | , CALL LAB D | AY SHIPPED | BECAUSE NO3 h | as 48 hr Af | | | 1 |
| Possible Hazard Identification | | | Sample Disposa | | | | | (A fee may be assess | od if samnles are | 1 |
| 🕅 Non-Hazard 🗌 Flammable 🗍 | Skin Irritant | Unknown | C Return To C | lient Dis | osal By Lab | Archive For | Months | retained longer than 3 | months) | |
| Turp Around Time Required | Other | | | Project Specific | Requirements (St | secity) | | · | | |
| 1 Religuistader | | rdzz/S | Time (225 | 1. Received By | E, H. w. w | | | Date 3-25-0 | 2 Time | 1 |
| 2. Relinquished By | | | Time. | | C | | | | 2 DE> C | 1 |
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| Comments | | | - - - - | | | | | | | , |
| DISTRIBUTION: WHITE - Stays with the Sample | e: CANARY - Returned to Client | with Report: PINK - | Field Copy | í | Arrivan . | | | | | 4 |