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October 30, 2008

Mr. Andrew Fan  
Project Manager  
Technical Support Branch (3LC20)  
Land & Chemicals Division  
United States Environmental Protection Agency, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

Re.: Transmittal of Semi-Annual Groundwater Sampling Lab Reports  
Former Chevron 122208, 5801 Riggs Road, Chillum, Maryland

Dear Mr. Fan:

Enclosed please find a CD containing one electronic copy of the laboratory reports from the semi-annual groundwater sampling event that took place in September, 2008 at the Chillum site. As you requested, the reports contain data for full TCL volatile analysis under EPA Method 8260.

If you have any questions, please contact me at (770) 984-3165.

Sincerely,

*KT W. LMM FOK*

Denise Dixon  
Project Manager

Attachments: CD with Semi-annual Groundwater Sampling Lab Reports

cc: Ms. V. North, DC DOE  
Mr. Herb Meade, MDE



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Mr. Andrew Fan  
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United States Environmental Protection Agency, Region III  
1650 Arch Street  
Philadelphia, PA 19103-2029

RE: Transmittal of Third Quarter 2008 Progress Report  
Former Chevron Facility 122208  
5801 Riggs Road  
Chillum, Maryland

Dear Mr. Fan:

Pursuant to Section VI, Paragraph E of the Administrative Order (U.S. Environmental Protection Agency [EPA] Docket Number RCRA-03-2003-0006th), Chevron is submitting one copy of the referenced document for your review.

If you have any questions, please call me at 770-984-3165.

Sincerely,

A handwritten signature in cursive script that reads "Denise Dixon for".

Denise Dixon  
Project Manager

cc: Ms. V. North, DC DOE  
Mr. Herb Meade, MDE  
R. Scrafford, GF

## **QUARTERLY PROGRESS REPORT**

FORMER CHEVRON FACILITY NO. 122208  
5801 RIGGS ROAD, CHILLUM, MARYLAND  
JULY 2008 THROUGH SEPTEMBER 2008

### **1.0 INTRODUCTION**

Pursuant to the U.S. Environmental Protection Agency (EPA) Administrative Order, Docket Number RCRA-03-2003-006th (AO), Chevron U.S.A. Inc. (Chevron) is conducting work at and adjacent to the former Chevron Service Station (Facility No. 122208) located at 5801 Riggs Road, Chillum, Maryland (the site). In accordance with Section VI, paragraph E. of the AO, Chevron has prepared this Quarterly Progress Report (Report) to describe actions taken by Chevron pursuant to the AO. The reporting period for this report is July 2008 through September 2008.

The remainder of this Report is divided into the following seven sections and four appendices:

- Section 2.0 - Work Conducted During the Reporting Period
- Section 3.0 - Summary of Findings
- Section 4.0 - Permit Compliance
- Section 5.0 - Summary of Deviations from Approved Plans, Problems Encountered, and Corrective Actions Taken
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  - Figures 2-3: Groundwater Potentiometric Surface Maps
- Appendix A - Dual-Phase Extraction System-Groundwater Extraction Data
  - Figure: Process and Instrumentation Diagram
  - Table A-1: Total Fluids Extraction System Data
  - Table A-2: Total Fluids Extraction System Influent Analytical Results
  - Table A-3: Total Fluids Extraction System Effluent Analytical Results
- Appendix B - Dual-Phase Extraction System-Soil Vapor Extraction Data
  - Figure: Process and Instrumentation Diagram
  - Table B-1: Soil Vapor Extraction System Data
  - Table B-2: Soil Vapor Extraction System Influent Analytical Results

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July 2008 through September 2008

## **2.0 WORK CONDUCTED DURING THE REPORTING PERIOD**

This section provides a summary of work conducted at the site during the reporting period.

### **2.1 Site Monitoring Work Conducted**

The EPA-approved Interim Monitoring Sampling Plan calls for monthly gauging of ten monitoring wells, semi-annual gauging of all monitoring wells, semi-annual sampling of 75 monitoring wells, and semi-annual sampling of the four soil vapor wells (Table 1). Monthly groundwater gauging was conducted on July 24, August 25, and September 15, 2008. The September/October 2008 semi-annual sampling event was conducted from September 22 to 25 and September 29 to October 1, 2008.

### **2.2 Interim Measures Conducted**

Several interim measures activities were conducted during the reporting period. These activities are listed below followed by a general description:

- Submission of the Draft Interim Measures Work Plan for Vapor Sampling and Mitigation at Residences; and
- Continued operation and maintenance of the Interim Dual Phase Extraction System (IDPES).

#### **Draft IM Work Plan**

Chevron submitted a revised work plan to EPA on April 14, 2008. EPA provided comments on the draft on June 4, 2008. Chevron submitted another revised work plan on July 10, 2008, which was approved by EPA on July 29, 2008.

#### **Overview of the Interim Dual Phase Extraction System**

The Interim Dual Phase Extraction System (IDPES) consists of total fluids extraction and treatment and soil vapor extraction and treatment. A process and instrumentation diagram (P&ID) for the system is provided in **Appendix A**. Please refer to the P&ID for specific information, such as equipment models and sizes, piping sizes, controls, and other technical information.

#### ***Total Fluids Recovery and Treatment***

Pneumatic total fluids (i.e., groundwater and LPH, if present) pumps are installed in seven Dual Phase Extraction (DPE) wells (RW-1, RW-2, RW-3, MW-7, MW-17, PTW-A

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Former Chevron Facility No. 122208, Chillum, Maryland  
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the atmosphere in accordance with MDE Air Quality General Permit to Construct Identification No. 033-9-1160. Treated water from the air stripper is pumped through two bag filters and then through six GAC vessels arranged in three parallel banks of two. Each bank is composed of two GAC vessels in series. The polished effluent flows through buried pipe to a storm drain inlet located in Riggs Road near the intersection at Eastern Avenue, N.E. in accordance with Maryland General Discharge Permit No. 2008 OGR-8514.

#### ***Soil Vapor Recovery and Treatment***

Soil vapor extraction (SVE) is conducted at eight wells (i.e., the seven DPE wells plus MP-7). An individual piping leg runs from each well to a common 3-inch manifold in the remediation system compound. The manifold leads to a moisture knockout tank and then to the blower. The blower is a rotary lobe, positive displacement blower controlled by a variable frequency drive. Soil vapor is blown from the blower to a catalytic oxidizer for treatment. Treated air is discharged to the atmosphere in accordance with MDE Air Quality General Permit to Construct Identification No. 033-9-1164.

#### **Interim DPE System Monitoring**

The IDPES was visited every week during the reporting period. The following activities were conducted during each site visit:

- Recorded groundwater and air flow rates;
- Measured air influent and effluent concentrations using a photoionization detector;
- Recorded the manifold vacuum for the SVE system; and
- Conducted equipment maintenance tasks as needed including checking the oil level of the SVE blower and air compressor, changing out the bag filters, and skimming off LPH in the oil/water separator, if present.

The groundwater influent (SP-1) was sampled three times and the effluent (SP-3) was sampled nine times for laboratory analysis (Tables A-2 and A-3, Appendix A). Effluent groundwater samples were analyzed by EPA Method 8260 for BTEX, MTBE, tetrachloroethene, trichloroethene, and 1,2-cis-dichloroethene. The permit limits are 100 µg/L for total BTEX and 5 µg/L for benzene. The discharge permit requires reporting of MTBE, tetrachloroethene, trichloroethene, and 1,2-cis-dichloroethene concentrations without establishing limits.

The soil vapor extraction system influent (SP-100) and effluent (SP-200) were sampled

### 3.0 SUMMARY OF FINDINGS

This section provides a summary of findings and results for the interim measures activities described in Section 2.2.

#### **Ongoing Operation of the DPE System**

The hour meters for both the total fluids and SVE portions of the DPE system were logged throughout the quarter. For the period from July 1, 2008 through September 30, 2008, the total fluids extraction portion of the system was operating 86 percent of the time (1,841 hours on and 285 hours off) and the SVE portion was operating 59 percent of the time (1,300 hours on and 897 hours off).

Groundwater extraction system performance data are provided in **Appendix A** including date and time, on/off status, totalizer reading, cumulative gallons of hydrocarbons, operating extraction points, and maintenance information for the reporting period and the previous three quarters (September 30, 2007 through September 30, 2008) (Table A-1). Comments on the reason for system downtime and the type of maintenance performed are also provided in Table A-1. A detailed explanation of the tables is provided on the first page of **Appendix A**. A P&ID is also included in **Appendix A**.

The groundwater extraction portion of the DPE system recovered approximately 1,551,925 gallons of groundwater and 11.7 equivalent gallons of dissolved hydrocarbons during the reporting period. The average system flow rate over the period was 14.1 gallons per minute (gpm) when the system was pumping (not including system down time) and 12.2 gpm for the entire period (including down time). The total volume of groundwater pumped from this site since remediation began in 1989 is approximately 38,176,761 gallons.

The analytical results for groundwater samples collected at sample points SP-1 (system influent) (Appendix A, Table A-2) and SP-3 (treated groundwater that is discharged to the storm drain) (Appendix A, Table A-3) indicated concentrations of benzene and BTEX in the treated groundwater were below the permit limits (5 µg/L benzene and 100 µg/L BTEX) during the reporting period.

Soil vapor extraction system performance data for the reporting period are provided in **Appendix B** including date and time, manifold air flow reading, manifold vacuum reading, influent and effluent screening concentrations measured using a PID, cumulative gallons of hydrocarbons recovered, and other information. A detailed explanation of the tables is provided on the first page of **Appendix B**. A P&ID is included in **Appendix A**. The soil vapor extraction portion of the DPE system

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Former Chevron Facility No. 122208, Chillum, Maryland  
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vapor that is discharged to the atmosphere) (Appendix B, Table B-3) indicates concentrations of benzene and TRPH in the treated soil vapor were well below the permit limits. The permit limits are 0.02 pounds per hour of benzene and 20 pounds per day of volatile organic compounds measured as TRPH.

#### **Hydrocarbon Recovery Summary for Period and Cumulative Total for System**

<b>Period</b>	<b>Liquid-Phase Hydrocarbons (gallons)</b>	<b>Dissolved-Phase Hydrocarbons (eq. gallons)</b>	<b>Vapor-Phase Hydrocarbons (eq. gallons)</b>	<b>Cumulative Total Hydrocarbons (eq. gallons)</b>
07/01/08-09/30/08	0.00	11.7	16.8	28.5
Cumulative Total for System	856.5	714.0	3,678.2	5,248.3

Figure 1 shows the volume of groundwater treated and the corresponding volume of hydrocarbons collected for the entire time the system has been operating on a quarter by quarter basis. The volume of hydrocarbons collected is directly proportional to the volume of groundwater treated.

#### **Groundwater Monitoring**

The analytical data from the September/October 2008 semi-annual sampling event are provided in **Appendix C**. The groundwater elevation data for the current period and the previous year are provided in Table C-1 in **Appendix C**. A detailed explanation of the table is provided on the first page of **Appendix C**.

Groundwater potentiometric surface maps were created using data collected during the semi-annual gauging event conducted on September 15, 2008 (Figures 2 and 3).

#### **Soil Vapor Monitoring**

The soil vapor analytical results for the current period and the previous year are provided in Table D-1 in **Appendix D**. Water was present in the tubing of soil vapor well VW-4 during the September 2008 sampling event, therefore, no sample was collected. Resampling was attempted on September 23, 2008, however the same conditions existed.

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Former Chevron Facility No. 122208, Chillum, Maryland  
July 2008 through September 2008

#### **4.0 PERMIT COMPLIANCE**

Four permits are required for activities performed at the Chillum site. Two air discharge permits have been issued by MDE covering the effluent of the groundwater air stripping equipment and the effluent of the soil vapor extraction equipment. In addition, another permit was issued by MDE for discharge of treated groundwater. Permit requirements and compliance for the above MDE permits are discussed in Sections 2 and 3. An additional permit required for work in Washington, D.C. is issued by the D.C. Department of Transportation (DCDOT) for Above Ground Public Space occupancy to perform activities such as sampling and gauging of monitoring wells.

Permit numbers 033-9-1160 Air Quality General Permit for effluent of groundwater air stripping equipment and 033-9-1164 Air Quality General Permit for effluent of soil vapor extraction equipment were issued for the site. Neither of these permits has an expiration date. Sampling and monitoring requirements include periodic effluent monitoring as described in Sections 2 and 3.

Permit number 2008-OGR-8514 General Discharge Permit is effective for treated groundwater discharge for the site. This permit became effective on January 31, 2008 and expires on December 12, 2012. The permit requires weekly effluent sampling, system monitoring, and submission of a quarterly Discharge Monitoring Report.

Permit number PA 41221 for Above Ground Public Space Occupancy was issued to cover traffic control requirements for sampling and gauging. The permit expires on March 05, 2009 and is valid for six month periods. Additional permits for installation of the vapor mitigation systems are in the process of being obtained.



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**5.0 Summary of Deviations from Approved Plans, Problems Encountered, and Corrective Actions Taken**

The system shut down on June 28, 2008, due to a failure of a check valve on the air compressor. The valve failure resulted in the compressor motor running nearly constantly, which produced elevated temperatures in the remediation system control room. Several pieces of equipment were damaged by the excessive heat, including the variable frequency drive (VFD) for the SVE blower. The groundwater extraction portion system was restarted on July 8, 2008, after the air compressor was repaired. The SVE system was restarted on July 29, 2008, after a new VFD was installed. To prevent this from reoccurring, Chevron installed a thermocouple in the control room to shut the system down when the temperature in the control room reaches 120°F.

In addition, the pump for well PTW-B failed and could not be repaired by O&M technicians. It was sent back to the manufacturer, where it was rebuilt and re-installed.



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## **6.0 SUMMARY OF MEETINGS WITH PUBLIC AND GOVERNMENT**

Monthly public meetings were conducted by the District of Columbia Departments of Environment (DC DOE) and Health (DC DOH) on July 3 and September 4, 2008. DC DOH did not hold a public meeting in August. EPA representatives attended the July and September meetings to engage the public regarding the final remedy for the site. A representative from Chevron attended the monthly meetings on July 3, 2008 and September 4, 2008.



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## **7.0 CHANGES IN KEY PERSONNEL DURING THE REPORTING PERIOD**

There were no changes in key Gannett Fleming or Chevron personnel; however Dr. V. Sreenivas, point of contact for DC DOH resigned his position in July 2008. The new point of contact is Victoria North, of the DC DOE.

## **8.0 PROJECTED WORK FOR THE NEXT REPORTING PERIOD**

The following list identifies projected work to be conducted during the next reporting period, which is October through December 2008.

- Monthly monitoring of the IDPES including influent and effluent sampling;
- Weekly sampling of the IDPES effluent to comply with water discharge permits;
- Monthly gauging of select wells near the service station to check for the presence of LPH and to document drawdown caused by the total fluids extraction system;
- Routine operations and maintenance activities for the remediation system;
- Continue semi-annual groundwater sampling event from September 22 to October 2, 2008;
- Sample indoor air in four residences;
- Install vapor mitigation systems in three residences; and
- Continue work on the Corrective Measures Implementation Work Plan.

## TABLES

**Table 1**  
**Summary of Groundwater and Soil Vapor Monitoring Program**  
**Third Quarter 2008 Report**  
**Former Chevron Facility No. 122208, Chillum, Maryland**

Well Identifier	Well Location Category	Petroleum Hydrocarbon Sampling Frequency <sup>2</sup>	Groundwater Gauging Frequency	Comment
GP-27A	Dual-Phase Extraction System	Semi-annual <sup>3</sup>	Monthly	
GP-30A	Dual-Phase Extraction System	Semi-annual	Monthly	
GP-35A	Dual-Phase Extraction System	Semi-annual	Monthly	
GP-38A	Dual-Phase Extraction System	Semi-annual	Monthly	
MP-7	Dual-Phase Extraction System	None	Monthly	Gauge only
MP-20	Dual-Phase Extraction System	None	Semi-annual	Gauge only
MP-30	Dual-Phase Extraction System	None	Semi-annual	Gauge only
MP-40	Dual-Phase Extraction System	None	Semi-annual	Gauge only
MW-5	Dual-Phase Extraction System	Semi-annual	Semi-annual	
MW-7	Dual-Phase Extraction System	Semi-annual	Monthly	Recovery Well
MW-15	Dual-Phase Extraction System	Semi-annual	Semi-annual	
MW-16	Dual-Phase Extraction System	Semi-annual	Monthly	
MW-17	Dual-Phase Extraction System	Semi-annual	Semi-annual	Recovery Well
MW-18	Dual-Phase Extraction System	Semi-annual	Monthly	
MW-22	Dual-Phase Extraction System	Semi-annual	Monthly	
MW-23	Dual-Phase Extraction System	Semi-annual	Semi-annual	
PTW-A	Dual-Phase Extraction System	Semi-annual	Semi-annual	Recovery Well
PTW-B	Dual-Phase Extraction System	Semi-annual	Semi-annual	Recovery Well
RW-1	Dual-Phase Extraction System	Semi-annual	Semi-annual	Recovery Well
RW-2	Dual-Phase Extraction System	Semi-annual	Semi-annual	Recovery Well
RW-3	Dual-Phase Extraction System	Semi-annual	Semi-annual	Recovery Well
GP-2E (45-50)	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-2E (55-60)	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-2F (45-50)	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-2F (50-55)	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-7A (30-35)	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-7A (35-40)	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-24A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-39A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-41A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
GP-44A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-24A	Dissolved Hydrocarbons	Semi-annual	Monthly	
MW-24B	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-25A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-25B	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-26A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-26B	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-27A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-27B	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-33A	Dissolved Hydrocarbons	Semi-annual	Semi-annual	Added at the request of EPA
MW-33B	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-33C	Dissolved Hydrocarbons	Semi-annual	Semi-annual	Added at the request of EPA
MW-33S	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-38	Dissolved Hydrocarbons	Semi-annual	Semi-annual	
MW-39B	Dissolved Hydrocarbons	Semi-annual	Semi-annual	

**Table 1**  
**Summary of Groundwater and Soil Vapor Monitoring Program**  
**Third Quarter 2008 Report**  
**Former Chevron Facility No. 122208, Chillum, Maryland**

Well Identifier	Well Location Category	Petroleum Hydrocarbon Sampling Frequency <sup>2</sup>	Groundwater Gauging Frequency	Comment
GP-7A (20-25)	Sentinel	Semi-annual	Semi-annual	
GP-9A (20-25)	Sentinel	Semi-annual	Semi-annual	
GP-11A (20-25)	Sentinel	Semi-annual	Semi-annual	
MW-6	Sentinel	Semi-annual	Semi-annual	
MW-19	Sentinel	Semi-annual	Semi-annual	
MW-20	Sentinel	Semi-annual	Semi-annual	Upgradient
MW-21	Sentinel	Semi-annual	Semi-annual	
MW-28A	Sentinel	Semi-annual	Semi-annual	
MW-28B	Sentinel	Semi-annual	Semi-annual	
MW-29A	Sentinel	Semi-annual	Semi-annual	
MW-29B	Sentinel	Semi-annual	Semi-annual	
MW-30	Sentinel	Semi-annual	Semi-annual	Upgradient
MW-31B	Sentinel	Semi-annual	Semi-annual	
MW-41A	Sentinel	Semi-annual	Semi-annual	
MW-41B	Sentinel	Semi-annual	Semi-annual	
MW-42	Sentinel	Semi-annual	Semi-annual	Upgradient
MW-43A	Sentinel	Semi-annual	Semi-annual	
MW-48	Sentinel	Semi-annual	Semi-annual	
MW-51	Sentinel	Semi-annual	Semi-annual	
MW-53	Sentinel	Semi-annual	Semi-annual	
MW-54	Sentinel	Semi-annual	Semi-annual	
MW-55	Sentinel	Semi-annual	Semi-annual	
VW-1	Soil Vapor	Semi-annual	Semi-annual	
VW-2	Soil Vapor	Semi-annual	Semi-annual	
VW-3	Soil Vapor	Semi-annual	Semi-annual	
VW-4	Soil Vapor	Semi-annual	Semi-annual	

**Notes:**

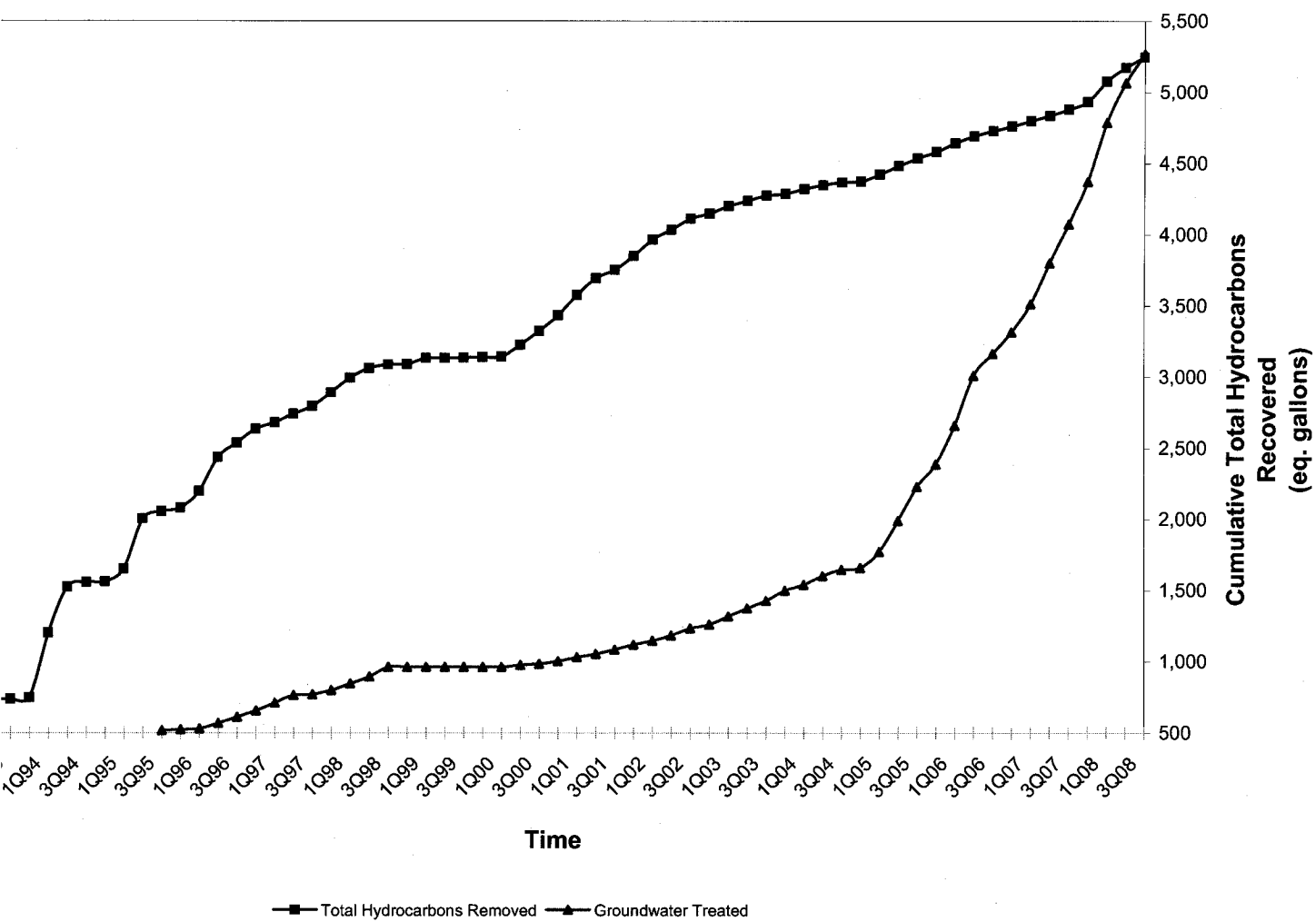
1. All groundwater wells will be gauged before they are sampled.
2. Petroleum Hydrocarbons: Benzene, Toluene, Ethylbenzene, Total Xylenes, and MTBE by EPA Method 8260B, and TPH-GRO by EPA Method 8015B
3. Sampling will be conducted in the spring and fall (low and high groundwater conditions).
4. All wells at the site will be gauged in the spring and fall (low and high groundwater conditions).
5. This table is adapted from the Interim Measures Sampling Plan, dated April, 2006.

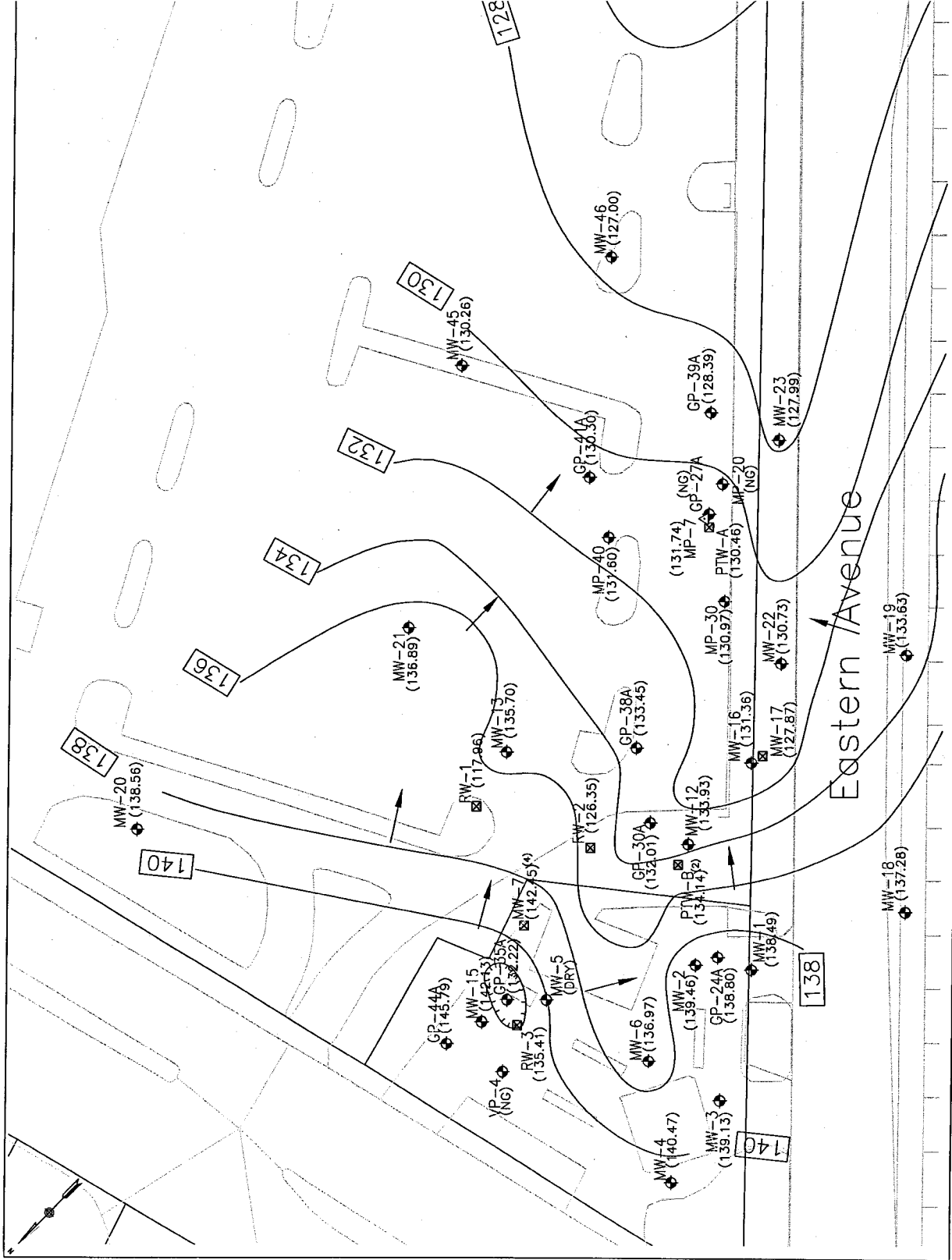
## FIGURES



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**Figure 1**  
**Cumulative Total Hydrocarbons Recovered and Groundwater Treated Since 1990**  
**Third Quarter 2008 Report**  
**Former Chevron Facility 122208, Chillum, Maryland**





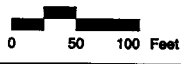
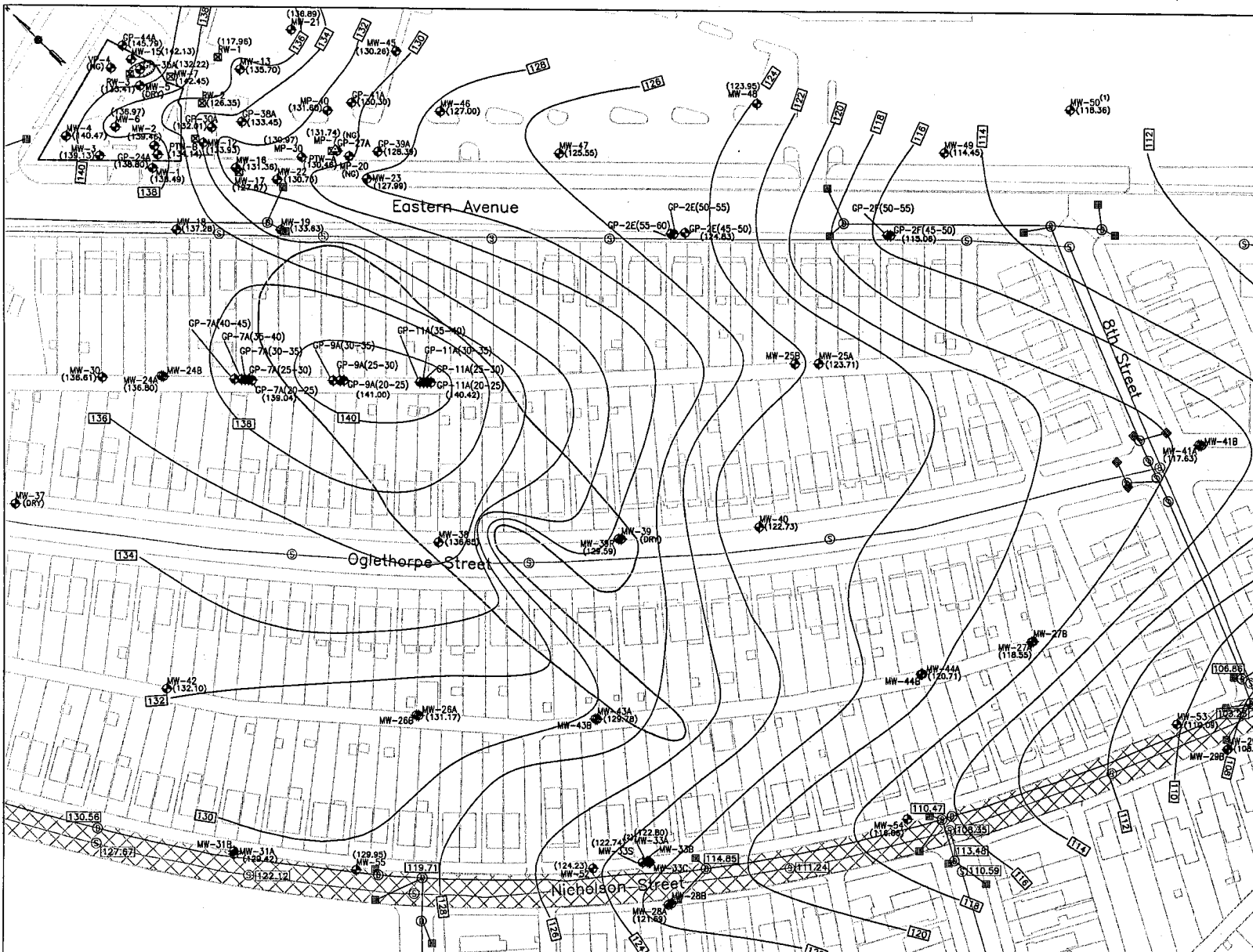
NO.	DESCRIPTION	DATE	BY	REVISIONS

REVISION	DATE	BY

**Gannett Fleming**  
BALTIMORE, MARYLAND

THIRD QUARTER 2007 PROGRESS REPORT  
FORMER CHEVRON FACILITY NO. 122208

Groundwater  
Remediation  
September



NO.	DESCRIPTION	DATE	BY

DESIGNED	DKB	DWG	DKB	SCALE	1:100
CHECKED	CC	APPROVED	RWS	APPROVED	

**Gannett Fleming**  
BALTIMORE, MARYLAND

FIRST QUARTER 2008 PROGRESS REPORT  
FORMER CHEVRON FACILITY NO. 122208  
CHILLUM, MARYLAND

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Su  
Septem

## **APPENDIX A**

### **DUAL-PHASE EXTRACTION SYSTEM – TOTAL FLUIDS EXTRACTION DATA**

## APPENDIX A

### DUAL-PHASE EXTRACTION SYSTEM – TOTAL FLUIDS EXTRACTION DATA

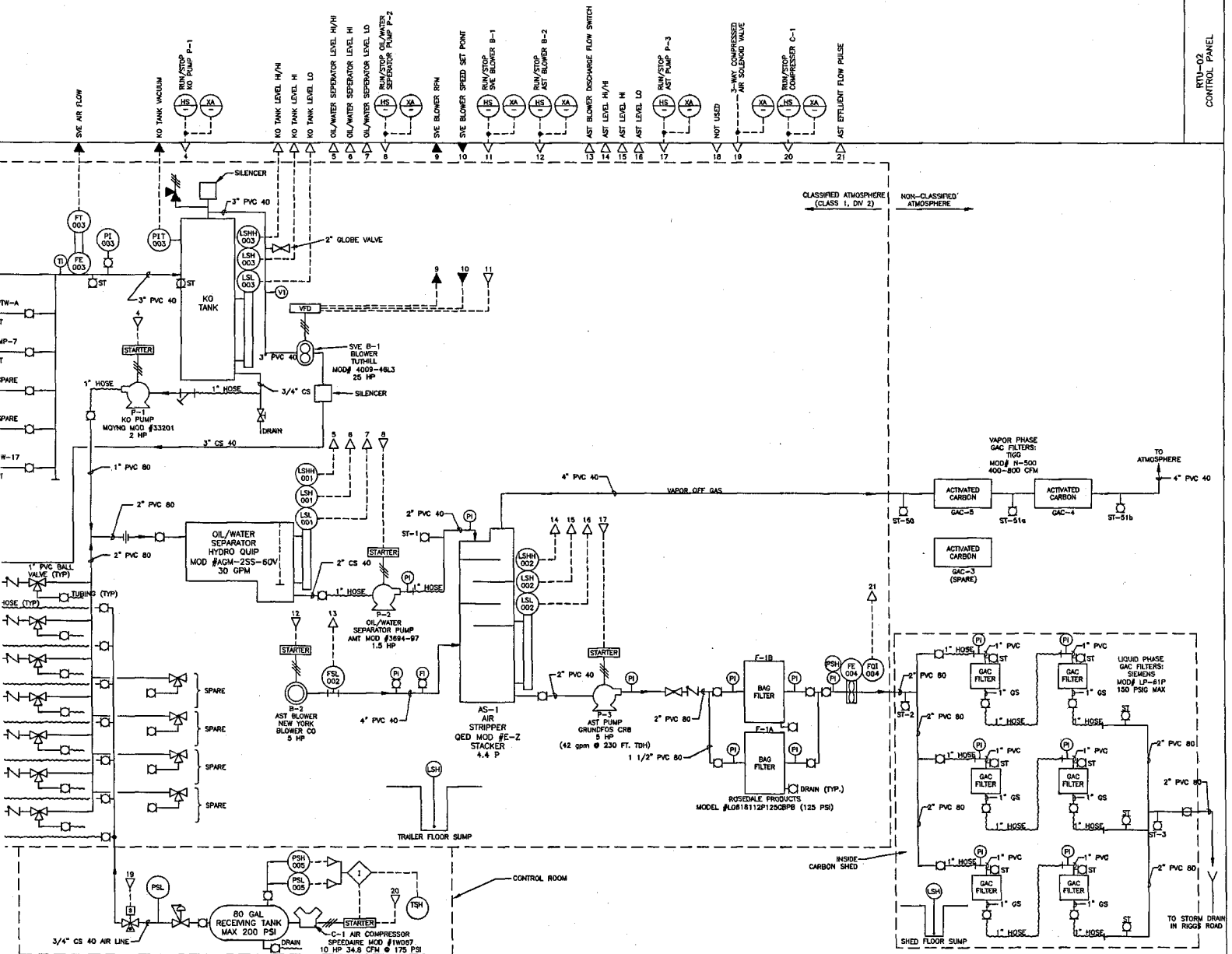
#### DESCRIPTION OF DATA TABLES

Chevron uses a central database to store remediation system data and laboratory analytical data. The tabulated data in Tables A-1, A-2, and A-3 is an exported summary of the total fluids extraction system data from the database. These data were recorded by the field technician during site visits. The analytical data for influent samples collected for laboratory analysis (Table A-2) are used to calculate the mass (and to estimate the volume) of hydrocarbons recovered in the dissolved phase. Effluent sample data are included in Table A-3 for comparison with permit limits.

The data table includes all system data collected since October 1, 2007. Data collected prior to this date are available in previous progress reports.

The following table lists the column headings in the table with a brief description of each. Please refer to the Process and Instrumentation Diagram (next page) for a schematic of equipment and sample ports.

Column Heading	Description
Date / Time	Date and time data were recorded.
System Status	System ON or OFF when technician recorded the data.
Influent BTEX (µg/L)	Sum of benzene, toluene, ethylbenzene, and total xylenes from influent sample port SP-1.
Effluent BTEX (µg/L)	Sum of benzene, toluene, ethylbenzene, and total xylenes from effluent sample port SP-3.
Treatment Efficiency (%)	Equation: (Influent-Effluent) / (Influent).
Totalizer Reading (gallons)	Reading on the totalizing flow meter.
Pumped Period (gallons)	Equation: (current totalizer reading) – (previous totalizer reading).
Pumped Total (gallons)	Cumulative total gallons of groundwater recovered.
Period Average (GPM)	Equation: (Gallons Pumped During Period) / (current Date-Time – previous Date-Time)
Hydrocarbons Recovered Period (gallons) <sup>1</sup>	Equation: [Avg. Influent BTEX (ug/L)] * e <sup>6</sup> * (1/0.2) * (3.785 L/gal) * (1 lb/453.6 g) * (gallons pumped) * (1 gal/6.26 lbs). NOTE: Formula assumes BTEX equals 20% of gasoline.
Hydrocarbons Recovered Cumulative (gallons)	Equation: (Hydrocarbons Recovered During Period) + (Previous Cumulative)
Operating Extraction Points	Wells in operation during the reporting period.



HW PER AS-BUILT CONDITIONS 11/20 DATE BY DESCRIPTION REVISIONS	DESIGNED F.S.K. CHECKED F.S.K.	CADD J.A.W. APPROVED F.S.K.	SCALE AS NOTED APPROVED K.G.	<b>Gannett Fleming</b> BALTIMORE, MARYLAND	CHEVRON PRODUCTS COMPANY ATLANTA, GEORGIA FORMER CHEVRON FACILITY NO. 122208 CHILLUM, MARYLAND	INSTRUMENTATION PROCESS AND INSTRUMENTATION DIAGRAM	JOB No. 44738 DATE 12/20/07	SHEET No. 10 10 of 15
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TABLE A-1: TOTAL FLUIDS EXTRACTION SYSTEM DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208, 5801 RIGGS ROAD CHILLUM, MARYLAND  
 PERIOD: OCTOBER 2007 - SEPTEMBER 2008



NS	-	19,167,860	251,784	29,386,879	19.12	-	646.66	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	19,170,774	2,774	29,389,793	46.23	-	653.99	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	19,481,563	0	29,700,582	0.00	-	653.99	Change Filters
NS	-	19,167,860	0	29,700,582	0.00	-	653.99	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	19,725,526	554,752	30,258,248	130.07	-	653.99	from EOS
NS	-	19,868,377	731	30,401,099	10.44	-	657.80	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	20,004,665	0	30,537,387	0.00	-	657.80	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	20,201,100	195,100	30,733,822	19.18	-	657.80	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	100.0	20,545,000	56,000	31,077,722	13.37	4.65	662.45	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	20,760,400	212,900	31,293,122	19.69	-	662.45	AST-HH Bag Filters
NS	-	20,810,300	49,900	31,343,022	16.36	-	662.45	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	21,371,700	365,900	31,904,422	19.58	-	662.45	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	22,115,600	376,400	32,648,322	19.98	-	671.76	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	22,433,031	205,531	32,965,753	20.09	-	671.76	AST-HH Bag Filters
0	100.0	22,520,200	87,169	33,052,922	20.18	5.73	677.49	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	22,845,800	149,700	33,378,522	20.62	-	677.49	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	100.0	23,138,200	177,870	33,670,922	20.56	4.10	681.60	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	23,468,100	210,700	34,000,822	20.19	-	681.60	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	23,847,978	79,378	34,380,700	19.01	-	681.60	from EOS

TABLE A-1: TOTAL FLUIDS EXTRACTION SYSTEM DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208, 5801 RIGGS ROAD CHILLUM, MARYLAND  
 PERIOD: OCTOBER 2007 - SEPTEMBER 2008



0	100.0	24,109,100	165,800	34,641,822	19.64	5.67	687.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	24,325,000	215,900	34,687,722	20.77	-	687.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	24,325,000	0	34,857,722	0.00	-	687.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	24,725,423	400,425	35,284,606	22.05	-	687.27	from EOP
NS	-	24,751,884	26,459	35,284,606	22.05	-	687.27	AST-HH Bag Filters
0	-	24,751,884	0	35,284,606	0.00	-	687.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	25,017,023	265,139	35,549,745	20.98	-	687.27	AST-HH Bag Filters
NS	-	25,017,023	0	35,549,745	0.00	-	687.27	GAC Change - G&M
0	100.0	25,017,023	0	35,549,745	0.00	5.99	693.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	25,206,500	169,477	35,589,222	18.78	-	693.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	25,367,800	161,300	35,900,522	18.78	-	693.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	25,495,300	127,500	36,028,022	22.41	-	693.27	AST-HH Bag Filters
0	-	25,495,300	0	36,028,022	0.00	-	693.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	25,641,800	146,500	36,174,522	21.92	-	693.27	AST-HH Bag Filters
0	-	25,641,800	0	36,174,522	0.00	-	693.27	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	25,807,900	186,100	36,340,622	21.83	-	693.27	AST-HH Bag Filters
0	100.0	25,807,900	0	36,340,622	0.00	9.02	702.28	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	25,861,400	63,500	36,394,122	21.44	-	702.28	AST-HH Bag Filters
NS	-	25,861,400	0	36,394,122	0.00	-	702.28	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	26,097,600	146,200	36,540,322	21.03	-	702.28	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	26,092,114	84,514	36,624,836	22.60	-	702.28	Air Compressor Failure
NS	-	26,092,114	0	36,624,836	0.00	-	702.28	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	100.0	26,489,000	396,886	37,021,722	10.65	6.96	709.25	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
0	-	26,643,700	54,700	37,285,722	18.16	-	709.25	RW1 RW2 RW3 MW7 MW17 PTWA PTWB
NS	-	26,753,000	109,300	37,285,722	17.56	-	709.25	Remote shutdown- Check PLC
0	-	26,753,000	0	37,285,722	0.00	-	709.25	RW1 RW2 RW3 MW7 MW17 PTWA
0	100.0	26,909,900	156,900	37,442,622	13.80	2.26	711.51	RW1 RW2 RW3 MW7 MW17 PTWA
0	-	27,034,200	186,900	37,589,722	13.69	-	711.51	RW1 RW2 RW3 MW7 MW17 PTWA
NS	-	27,214,800	181,600	37,747,522	14.24	-	711.51	RW1 RW2 RW3 MW7 MW17 PTWA
0	-	27,236,700	21,900	37,769,722	12.12	-	711.51	RW1 RW2 RW3 MW7 MW17 PTWA
0	-	27,316,400	79,700	37,849,122	12.90	-	711.51	RW1 RW2 RW3 MW7 MW17 PTWA
0	100.0	27,515,100	100,000	38,017,722	13.60	2.61	714.02	RW1 RW2 RW3 MW7 MW17 PTWA
0	-	27,644,039	128,939	38,176,761	12.26	-	714.02	RW1 RW2 RW3 MW7 MW17 PTWA

Millions) = (avg. inf. conc.) x (e-6) x (1/0.2) x (3.785 L/gal) x (1 lb/453.6 g) x (gallons pumped) x (1 gal/6.26 lbs).

% of gasoline.



**TABLE A-2: TOTAL FLUIDS EXTRACTION SYSTEM INFLUENT (SP-1) ANALYTICAL RESULTS**  
**THIRD QUARTER 2008 REPORT**  
**FORMER CHEVRON FACILITY 122208 5801 RIGGS RD CHILLUM, MD**  
**PERIOD: OCTOBER 2007 - SEPTEMBER 2008**

10/10/07 12:01						
11/6/07 13:50	250	410	34	290	984	300
1/15/08 11:30	320	550	36	360	1,266	300
3/6/08 11:06	260	450	37	310	1,057	310
5/15/08 16:40	230	520	54	480	1,284	280
7/24/08 14:50	240	390	31	270	931	240
8/19/08 10:25						
9/18/08 10:55	160	240	17	145	562	260

Notes:

(1) ND: Not Detected above reporting limit.

(2) <##: Parameter not detected above the reporting limit.

**TABLE A-3: TOTAL FLUIDS EXTRACTION SYSTEM EFFLUENT (SP-3) ANALYTICAL RESULTS**  
**THIRD QUARTER 2008 REPORT**  
**FORMER CHEVRON FACILITY 122208 5801 RIGGS RD CHILLUM, MD**  
**PERIOD: OCTOBER 2007 - SEPTEMBER 2008**

11/6/07 13:50	<1	<1	<1	<3	0	12
12/3/07 13:10						
1/15/08 11:15	<1	<1	<1	<3	0	18
2/14/08 13:25						
2/20/08 11:15	<1	<1	<1	<3	0	16
2/26/08 12:40						
3/6/08 10:50	<1	<1	<1	<3	0	15
3/10/08 12:50						
3/17/08 18:00	<1	<1	<1	<3	0	13
3/28/08 9:00						
4/3/08 14:40	<1	<1	<1	<3	0	17
4/16/08 16:35	<1	<1	<1	<3	0	16
4/23/08 15:00						
5/1/08 11:15	<1	<1	<1	<3	0	12
5/15/08 10:15						
5/22/08 13:30	<1	<1	<1	<3	0	<1
6/2/08 14:05	<1	<1	<1	<3	0	<1
6/17/08 18:05	<1	<1	<1	<3	0	2.2
6/24/08 14:35						
7/24/08 14:25	<1	<1	<1	<3	0	6.6
8/4/08 12:25						
8/11/08 14:00	<1	<1	<1	<3	0	8.5
8/25/08 11:40	<1	<1	<1	<3	0	6.8
9/8/08 14:25	<1	<1	<1	<3	0	7.1
9/25/08 14:15	<1	<1	<1	<3	0	4.6

Notes:

- (1) ND: Not Detected above reporting limit.
- (2) <##: Parameter not detected above the reporting limit.

## **APPENDIX B**

### **DUAL-PHASE EXTRACTION SYSTEM – SOIL VAPOR EXTRACTION DATA**

**APPENDIX B**  
**DUAL-PHASE EXTRACTION SYSTEM –**  
**SOIL VAPOR EXTRACTION DATA**

**DESCRIPTION OF DATA TABLES**

**Overview**

Chevron uses a central database to store remediation system data and laboratory analytical data. The tabulated data in Tables B-1, B-2 and B-3 is an exported summary of soil vapor extraction (“SVE”) system data from the database. These data were recorded by the field technician during site visits. Analytical data for influent samples collected for laboratory analysis are included in Table B-2 to calculate the mass recovery rates of total petroleum hydrocarbons and benzene. Effluent sample data are included in Table B-3 for comparison with permit limits.

The data tables include all system data collected since October 1, 2007. Data collected prior to this date are available in previous progress reports.

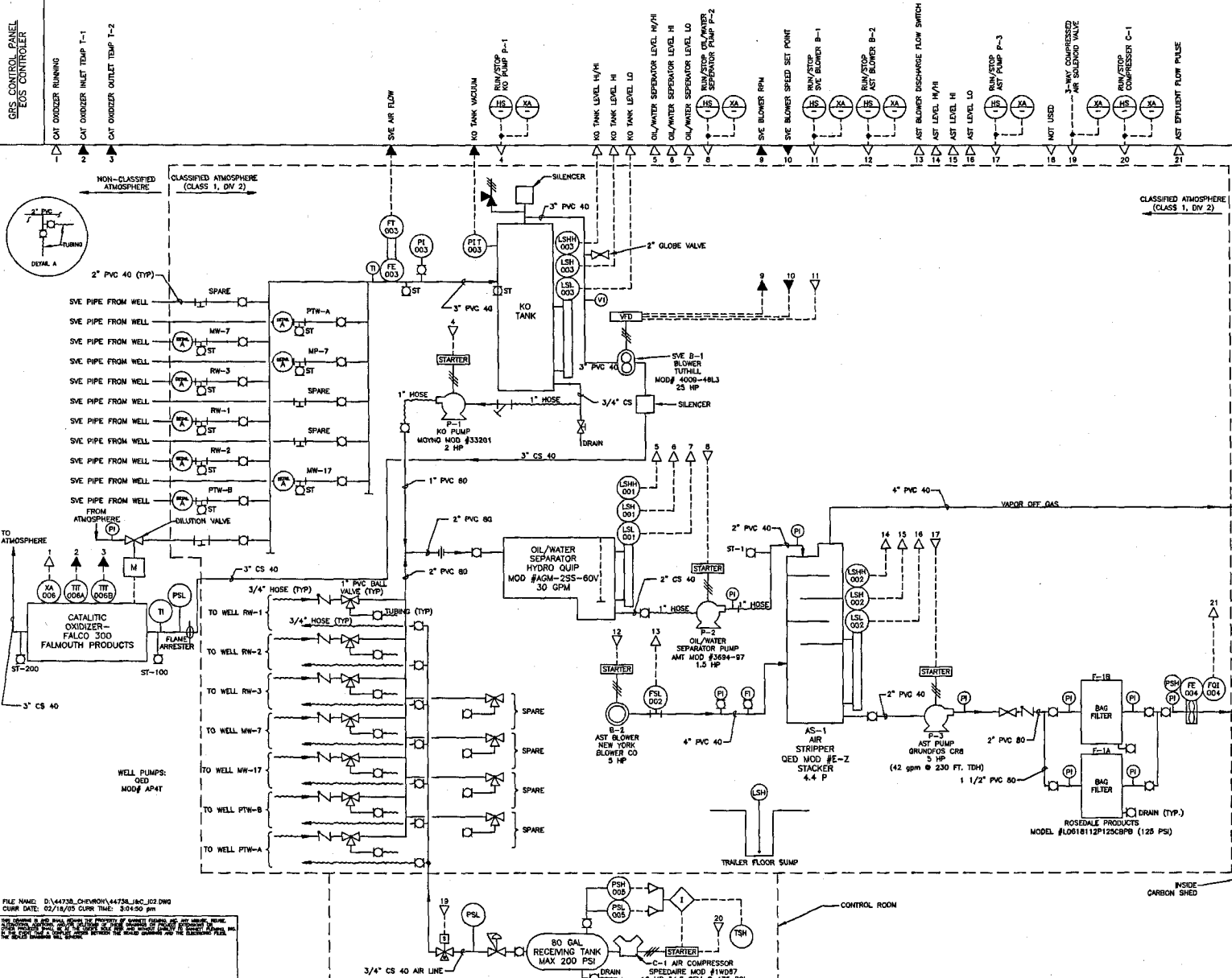
The following table lists the column headings in the table with a brief description of each. Please refer to the Process and Instrumentation Diagram (Appendix A) for a schematic of equipment and sample ports.

<b>Column Heading</b>	<b>Description</b>
Date / Time	Date and time data were recorded.
System Status	System ON or OFF when technician recorded the data.
Hour Meter (hours)	Field measurement of the hour meter.
Manifold Vacuum (in Hg)	Field measurement of vacuum in manifold.
Influent (ppmv)	Field measurement of vapor concentration prior to treatment using a photoionization detector.
Influent (cfm)	Field measurement of total vapor flow in manifold.
Effluent (ppmv)	Field measurement of vapor concentration after treatment using a photoionization detector.
Treatment Efficiency (%)	Equation: (Influent-Effluent) / (Influent).
Hydrocarbons Recovered (lbs/day) <sup>1</sup>	Equation: [(Influent) / (10 <sup>-6</sup> )] * [Manifold Extraction-Flow Rate] * CV1
Hydrocarbons Recovered Period (gal)	Equation: [(Avg. Influent) x (10 <sup>-6</sup> )] * [Avg. Manifold Extraction-Flow Rate]
Hydrocarbons Recovered Cumulative (gal)	Equation: (Avg. Influent BTEX) * (1 L / 0.26 gal) * (lb/454x10 <sup>6</sup> µg) * (current Total Gallons Pumped – previous Total Gallons Pumped on last sampling date) * (gal hydrocarbons / 6.48 lbs hydrocarbons) * (0.2 gal BTEX / gal hydrocarbons).
Operating Extraction Points	Wells in operation during the reporting period.

**Notes**

(1) Assumptions: Hydrocarbon molecular weight is 92 grams/mole; vapor behaves like an ideal gas; Average (Avg.) Influent (ppmv) and flow rate (Manifold

SEWER LOCATION: K-1111 Near A-104/10738 Change



FILE NAME: D:\44738\_CHEVRON\44738\_INJ\_03.DWG  
 CURR DATE: 02/14/95 CURR TIME: 3:04:50 pm  
 THE COMPANY IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.  
 THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF GANNETT FLEMING AND IS NOT TO BE  
 REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL,  
 INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM,  
 WITHOUT THE WRITTEN PERMISSION OF GANNETT FLEMING.

1	RE-DRAWN PER AS-BUILT CONDITIONS	12/20	ATC	DESIGNED	F.S.K.	CAD	J.A.W.	SCALE	AS NOTED
2				CHECKED	F.S.K.	APPROVED	F.S.K.	APPROVED	K.G.
REVISIONS		DATE	BY						



CHEVRON PRODUCTS COMPANY  
 ATLANTA, GEORGIA  
 FORMER CHEVRON FACILITY NO. 122208  
 CHILLUM, MARYLAND

PROCESS A

TABLE B-1: SOIL VAPOR EXTRACTION SYSTEM DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208, 5801 RIGGS RD CHILLUM, MD  
 PERIOD: OCTOBER 2007 - SEPTEMBER 2008



ON/OFF	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
ON	17,639.9	13	70	128	30.0	57.1	3.0	0.1	3,389.6	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
ON	17,913.4	14	48	127	24.0	50.0	2.1	4.5	3,394.2	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
ON	18,248.7	13	92	129	44.0	52.2	4.0	4.1	3,400.2	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
ON	18,388.1	14	95	134	42.0	55.8	4.3	3.8	3,404.0	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
ON	18,891.8	15	145	120	74.0	49.0	5.9	12.1	3,421.4	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
OFF	19,075.0	-	-	-	-	-	-	-	3,421.5	AST-HH																																																																																										
ON	19,075.0	14	120	123	38.0	68.3	5.0	7.5	3,429.0	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
ON	19,552.4	14	210	132	63.0	70.0	9.4	18.2	3,454.4	RW1 RW2 RW3 MW7 MW17 PTWA PTWB																																																																																										
ON	20,177.5	13	240	133	95.0	60.4	10.8	22.3	3,497.4	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	20,438.5	14	212	134	92.0	56.6	9.6	17.4	3,514.8	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	20,774.3	14	170	128	87.0	48.8	7.4	14.5	3,533.7	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	21,543.5	13	186	126	80.0	57.0	7.9	32.3	3,580.1	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	22,561.6	13	157	134	65.0	58.6	7.1	34.9	3,629.3	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
OFF	23,427.2	-	-	-	-	-	-	-	3,661.4	VFD damaged in air compressor failure																																																																																										
ON	23,673.8	15	57	74	22.0	61.4	1.4	1.2	3,671.2	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	23,962.5	16	73	74	31.0	57.5	1.8	1.9	3,674.0	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	24,323.1	16	-	74	-	-	-	-	3,675.6	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										
ON	24,676.3	16	55	74	25.0	54.5	1.4	1.8	3,678.2	RW1 RW2 RW3 MW7 MW17 PTWA PTWB MP7																																																																																										

ered are expressed as toluene (MW = 92 g/mol @ 77F).

vered (lbs/day) = (inf. conc.) x (92 g/mol) x (mol/24.45 L) x (e-6) x (inf. flow) x (28.32 L/ft3) x (1440 min/day) x (1 lb/453.6 g).

vered Period (gallons) = (avg. inf. conc.) x (92 g/mol) x (mol/24.45 L) x (e-6) x (avg. inf. flow) x (28.32 L/ft3) x (runtime in minutes) x (1 lb/453.6 g) x (gal/6.39 lb).

TABLE B-2: SOIL VAPOR EXTRACTION SYSTEM INFLUENT (SP-100) ANALYTICAL RESULTS  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208, 5801 RIGGS RD CHILLUM, MD  
 PERIOD: OCTOBER 2007 - SEPTEMBER 2008



	8.90	1.40	10.00	520	129	0.0025	6.03
							11.37
	16.00	1.90	14.00	1,200	135	0.0051	14.56
				1,000	132	0.0040	11.87
	18.00	2.10	17.00	970	127	0.0047	11.08
							11.37
	5.00	1.00	7.00	1,200	134	Not Calculated	14.46
				630	131	0.0025	7.42
	7.00	1.00	8.00	340	74	0.0008	2.26
							0.59
	5.00	0.60	4.00	650	74	0.0006	4.32

(nc.) x (e-6) x (1 lb/453.6 g) x (flow) x (28.32 L/ft<sup>3</sup>) x (60 min/hr).  
 (e-6) x (1 lb/453.6 g) x (flow) x (28.32 L/ft<sup>3</sup>) x (1440 min/day).  
 (mol/24.45 L), where MW benzene = 78 and MW TPH = 92.

LE B-3: SOIL VAPOR EXTRACTION SYSTEM EFFLUENT (SP-200) ANALYTICAL RESULTS  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208, 5801 RIGGS RD CHILLUM, MD  
 PERIOD: OCTOBER 2007 - SEPTEMBER 2008



				200	128	0.0004	4.60
	2.00	0.10	1.10	220	129	0.0009	2.55
	3.00	0.35	2.00	220	127	0.0012	5.18
	5.90	0.35	2.30	540	135	0.0024	6.55
	5.20	0.35	2.30	520	132	0.0018	6.17
	3.60	0.25	2.00	360	127	0.0018	4.11
	3.00	0.35	2.00	620	132	0.0016	7.36
	2.00	0.40	2.00	740	134	<0.02	8.91
	3.00	0.20	2.00	360	132	0.0019	4.12
6	<0.08	<0.09	<0.09	30	74	<0.02	0.20
				180	74	0.0003	1.20
	2.00	0.30	2.00	360	74	0.0002	2.40

nc.) x (e-6) x (1 lb/453.6 g) x (flow) x (28.32 L/ft<sup>3</sup>) x (60 min/hr).

(e-6) x (1 lb/453.6 g) x (flow) x (28.32 L/ft<sup>3</sup>) x (1440 min/day).

(mol/24.45 L), where MW benzene = 78 and MW TPH = 92.



## **APPENDIX C**

### **GROUNDWATER MONITORING DATA**

## APPENDIX C

### GROUNDWATER MONITORING DATA

#### DESCRIPTION OF DATA TABLE

---

##### Overview

Chevron uses a central database to store groundwater monitoring data including laboratory analytical data. The tabulated data in **Appendix C** (Table C-1) is an exported summary of groundwater elevation data and analytical data for the period beginning on October 1, 2007, and ending on September 30, 2008 (reporting period plus previous four quarters). Groundwater elevation data were measured using an interface probe in wells near the Service Station and a water level indicator at all other locations.

The following table lists the column headings in the table with a brief description of each.

Column Heading	Description
Date	Date data were recorded.
DTL (ft)	Depth to LPH (ft)
DTW (ft)	Depth to groundwater (ft)
LPH Thick. (ft)	Equation: (DTW-DTL)
GW Elev. (ft)	Corrected water table elevation equation: (TOC) - (DTW) + [(0.75)*(LPH Thickness)]
LPH Recovery	Liquid Phase Hydrocarbons Recovery
Benzene (µg/L)	Laboratory reported concentration
Toluene (µg/L)	Laboratory reported concentration
Ethylbenzene (µg/L)	Laboratory reported concentration
Total Xylenes (µg/L)	Laboratory reported concentration
MTBE (µg/L)	Laboratory reported concentration
TPH-GRO (µg/L)	Laboratory reported concentration

Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



10/30/2008

PH nick. (ft)	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH- GRO (µg/L)
			10 (2)		ND		44.0	470.0 (2)	420.0 (200)
	123.25		No Analytical Results						
			8.0 (2)	ND (2)	ND (2)		8.0	390.0 (2)	280.0 (100)
	124.83		No Analytical Results						
			ND (2)	ND (2)	ND (2)		ND	370.0 (2)	320.0 (100)
			No Analytical Results						
	124.81		No Analytical Results						
			ND (1)	ND (1)	ND (1)	ND (2)	NA	240.0 (1)	200.0 (100)
	123.24		No Analytical Results						
			ND (1)	ND (1)	ND (1)	ND (2)	ND	180.0 (1)	150.0 (100)
	124.70		No Analytical Results						
			8.0 (1)	ND (1)	ND (1)		8.0	130.0 (1)	180.0 (100)
			ND (2)				ND	370.0 (2)	280.0 (100)
	113.91		No Analytical Results						
			ND (1)	ND (1)	ND (1)	ND (2)	ND	390.0 (2)	160.0 (100)
	115.06		No Analytical Results						
			ND (1)	ND (1)	ND (1)	NA	ND	270.0 (1)	390.0 (100)
			ND (2)				NA	590.0 (2)	510.0 (100)
	114.10		No Analytical Results						
			ND (2)	ND (2)	ND (2)	ND (2)	15.0	420.0 (2)	340.0 (100)
	115.31		No Analytical Results						
			ND (2)				NA	430.0 (10)	480.0 (200)

Abbreviations:

in parenthesis.  
 reported for presence of LPH.  
 any results were rounded.  
 missing.

DTL: Depth to LPH  
 DTW: Depth to Water  
 LPH: Liquid Phase Hydrocarbons  
 GW Elev: Groundwater Elevation

TOC: Top of Casing  
 ND: Not Detected above reporting limit  
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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



10/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
138.04			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
137.53			No Analytical Results						
138.43			ND (1)	ND (1)	ND (1)	ND (2)	ND	1.3 (1)	ND (100)
139.04			No Analytical Results						
136.87			ND (1)	ND (1)	ND (1)	NA	ND	1.0 (1)	ND (100)
137.42			No Analytical Results						
138.77			No Analytical Results						
136.65			12.0 (1)	ND (1)	ND (1)	2.9 (2)	14.9	11.0 (1)	ND (100)
135.91			No Analytical Results						
135.36			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
136.79			No Analytical Results						
136.62			1.7 (1)	ND (1)	ND (1)	NA	1.7	1.8 (1)	ND (100)
136.50			380.0 (2)	7.0 (2)	92.0 (2)	290.0 (4)	769.0	250.0 (2)	3,800.0 (200)
134.86			No Analytical Results						
135.86			280.0 (2)	6.0 (2)	50.0 (2)	150.0 (4)	486.0	180.0 (2)	2,700.0 (500)
136.40			No Analytical Results						
136.32			380.0 (5)	6.7 (5)	66.0 (5)	NA	452.7	310.0 (5)	2,000.0 (100)
134.98			No Analytical Results						
136.39			No Analytical Results						
139.51			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)

**Abbreviations:**  
 DTL: Depth to LPH  
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Table C-1. GROUNDWATER MONITORING DATA  
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 FORMER CHEVRON FACILITY 122208  
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Depth (ft)	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH- GRO (µg/L)
---	140.83		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	140.89		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
---	136.37		No Analytical Results						
---	138.99		No Analytical Results						
---	136.89		No Analytical Results						
---	139.23		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	139.57		No Analytical Results						
---	140.42		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	140.42		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
---	130.47		No Analytical Results						
---	137.15		No Analytical Results						
---	137.12		No Analytical Results						
---	129.18		No Analytical Results						

**Abbreviations:**

renthesis.  
 ected for presence of LPH.  
 y results were rounded.  
 ding.

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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
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 5801 RIGGS ROAD, CHILLUM, MARYLAND



10/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
137.97									
138.13			ND (1)	ND (1)	10.0 (1)	40.0 (2)	50.0	ND (1)	1,700.0 (100)
138.80									
129.55	0.02								
127.95	0.05								
128.83	0.01								
127.24									
127.23									
130.14									
130.25									
130.98			5,200.0 (100)	16,000.0 (100)	2,500.0 (100)	NA	23,700.0	3,100.0 (100)	110,000.0 (10000)
128.40									
128.27									
128.44									
128.12									
127.96									
128.86			9,100.0 (200)	11,000.0 (200)	920.0 (200)	5,800.0 (400)	26,820.0	49,000.0 (200)	72,000.0 (5000)
129.84									
129.92									
130.33									
132.13									
132.01									

Abbreviations:

in parenthesis.	DTL: Depth to LPH	TOC: Top of Casing
reported for presence of LPH.	DTW: Depth to Water	ND: Not Detected above reporting limit
only results were rounded.	LPH: Liquid Phase Hydrocarbons	NA: Not Analyzed
ing.	GW Elev: Groundwater Elevation	UNK: Unknown

Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
128.91	128.91		14,000.0 (250)	3,000.0 (250)	15.0 (250)	NA	28,000.0	47,000.0 (250)	130,000.0 (5000)
128.02	128.02								No Analytical Results
128.97	128.97								No Analytical Results
128.93	128.93								No Analytical Results
128.99	128.99								No Analytical Results
129.01	129.01								No Analytical Results
127.73	127.73		42.0 (1)	57.0 (1)	13.0 (1)	76.0 (2)	188.0	21.0 (1)	200.0 (100)
128.70	128.70								No Analytical Results
132.67	132.67								No Analytical Results
132.22	132.22								No Analytical Results
129.98	129.98								No Analytical Results
129.99	129.99								No Analytical Results
130.45	130.45								No Analytical Results
131.70	131.70		150.0 (2)	280.0 (2)	10.0 (2)	260.0 (4)	700.0	ND (2)	4,800.0 (500)
132.61	132.61								No Analytical Results
133.46	133.46								No Analytical Results
134.31	134.31								No Analytical Results
134.38	134.38								No Analytical Results
135.66	135.66		3.4 (2)	5.1 (2)	4.0 (2)	NA	12.5	ND (2)	6,000.0 (100)
136.44	136.44								No Analytical Results

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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
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 5801 RIGGS ROAD, CHILLUM, MARYLAND



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PH	GW	LPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	BTEX	MTBE	TPH- GRO
ick.	Elev	Recov.	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
(ft)	(ft)	(gal)							
--	126.42		2,100.0 (20)	620.0 (20)	92.0 (20)	980.0 (40)	3,792.0	5,400.0 (20)	7,000.0 (500)
--	128.39		No Analytical Results						
--	128.70		2,100.0 (25)	540.0 (25)	66.0 (25)	NA	2,706.0	4,800.0 (25)	11,000.0 (2000)
--	128.42		No Analytical Results						
--	128.38		ND (1)	ND (1)	ND (1)	ND (2)	ND	4.1 (1)	ND (100)
--	130.30		No Analytical Results						
--	130.08		1.5 (1)	ND (1)	ND (1)	NA	1.5	5.4 (1)	ND (100)
--	145.48		No Analytical Results						
--	145.49		ND (2)	37.0 (2)	220.0 (2)	1,100.0 (4)	1,357.0	ND (2)	6,000.0 (500)
--	145.79		No Analytical Results						
--	145.85		ND (5)	37.0 (5)	290.0 (5)	NA	327.0	ND (5)	7,500.0 (500)
--	131.60		No Analytical Results						
--	131.07		No Analytical Results						
--	130.58		No Analytical Results						
07	130.62	0.01	No Analytical Results						
80	127.90		No Analytical Results						
--	133.05		No Analytical Results						
--	132.85		No Analytical Results						
01	132.80	-	No Analytical Results						
--	133.56		No Analytical Results						
--	131.74		No Analytical Results						
--	127.49		No Analytical Results						

By Car

Abbreviations:  
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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
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30/2008

TPH Depth (ft)	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH- GRO (µg/L)
---	130.97								No Analytical Results
---	131.60								No Analytical Results
---	138.49								No Analytical Results
---	139.46								No Analytical Results
---	139.13								No Analytical Results
---	140.47								No Analytical Results
Dry									
---	138.87								

in parenthesis.  
 reported for presence of LPH.  
 All results were rounded.  
 Reporting.

Abbreviations:

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Table C-1. GROUNDWATER MONITORING DATA  
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10/30/2008

Depth (ft)	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
--	135.25		3.2 (1)	ND (1)	ND (1)	ND (2)	3.2	ND (1)	ND (100)
--	136.97		No Analytical Results						
--	119.91		No Analytical Results						
--	119.91		No Analytical Results						
--	119.86		No Analytical Results						
--	119.86		No Analytical Results						
--	119.91		No Analytical Results						
--	119.86		700.0 (10)	1,300.0 (10)	94.0 (10)	1,200.0 (20)	3,294.0	420.0 (10)	4,600.0 (500)
--	119.91		No Analytical Results						
--	119.91		No Analytical Results						
--	119.91		No Analytical Results						
--	119.91		No Analytical Results						
--	142.45		No Analytical Results						
--	127.53		No Analytical Results						
--	133.93		No Analytical Results						
--	135.59		No Analytical Results						
--	135.70		No Analytical Results						
--	141.76		No Analytical Results						
--	141.78		8.6 (1)	47.0 (1)	22.0 (1)	65.0 (2)	142.6	ND (1)	900.0 (100)
--	142.13		No Analytical Results						
--	142.07		7.9 (1)	16.0 (1)	23.0 (1)	NA	46.9	ND (1)	710.0 (100)

Abbreviations:

in parenthesis.  
 detected for presence of LPH.  
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 ing.

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 THIRD QUARTER 2008 REPORT  
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10/30/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
130.52			2,400.0 (10)	2,000.0 (10)	50.0 (10)	540.0 (20)	3,240.0	2,000.0 (10)	6,700.0 (1000)
130.61									No Analytical Results
130.61									No Analytical Results
130.67									No Analytical Results
130.74									No Analytical Results
130.70									No Analytical Results
130.68									No Analytical Results
Dry									
130.78									No Analytical Results
132.02									No Analytical Results
131.46									No Analytical Results
131.36									No Analytical Results
131.65			4,700.0 (100)	13,000.0 (100)	1,400.0 (100)	NA	19,100.0	500.0 (100)	38,000.0 (2000)
Dry									
126.32			6,600.0 (50)	13,000.0 (50)	200.0 (50)	8,000.0 (50)	28,900.0	7,000.0 (50)	50,000.0 (5000)
126.27									No Analytical Results
128.05			1,500.0 (25)	3,100.0 (25)	300.0 (25)	2,200.0 (50)	7,110.0	1,400.0 (25)	30,000.0 (5000)
127.87									No Analytical Results
Dry									
137.59			ND (10)	480.0 (10)	150.0 (10)	6,100.0 (20)	7,140.0	ND (10)	24,000.0 (5000)
136.65									No Analytical Results
136.10									No Analytical Results
134.51									No Analytical Results
134.51									No Analytical Results
134.68									No Analytical Results
135.48			ND (10)	12,000.0 (10)	50.0 (10)	7,000.0 (20)	NA	ND (10)	25,000.0 (1000)
138.51									No Analytical Results
138.20									No Analytical Results

Abbreviations:

in parenthesis.  
 detected for presence of LPH.  
 dry results were rounded.  
 ending.

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 THIRD QUARTER 2008 REPORT  
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 5801 RIGGS ROAD, CHILLUM, MARYLAND



0/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
-	137.70		No Analytical Results						
-	137.28		No Analytical Results						
-	137.13		6.1 (20)	670.0 (20)	270.0 (20)	NA	946.1	ND (20)	27,000.0 (10000)
-	132.61		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
-	131.51		No Analytical Results						
-	131.23		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
-	133.63		No Analytical Results						
-	133.80		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
-	137.89		No Analytical Results						
-	137.98		2.0 (1)	ND (1)	ND (1)	ND (2)	2.0	ND (1)	140.0 (100)
-	138.66		No Analytical Results						
-	138.70		No Analytical Results						
-	136.11		No Analytical Results						
-	136.41		8.6 (1)	ND (1)	ND (1)	6.7 (2)	15.3	19.0 (1)	110.0 (100)
-	136.89		No Analytical Results						
-	137.21		10.0 (1)	18.0 (1)	7.1 (1)	NA	35.1	15.0 (1)	430.0 (100)
-	129.78		7,000.0 (100)	18,000.0 (100)	1,800.0 (100)	12,000.0 (200)	38,800.0	1,000.0 (100)	65,000.0 (5000)
-	129.42		No Analytical Results						
-	129.19		No Analytical Results						
-	129.33		No Analytical Results						
-	128.90		No Analytical Results						
-	129.02		No Analytical Results						
-	128.70		4,900.0 (100)	12,000.0 (100)	1,200.0 (100)	8,200.0 (200)	26,300.0	710.0 (100)	46,000.0 (2000)

Abbreviations:

DTL: Depth to LPH	TOC: Top of Casing
DTW: Depth to Water	ND: Not Detected above reporting limit
LPH: Liquid Phase Hydrocarbons	NA: Not Analyzed
GW Elev: Groundwater Elevation	UNK: Unknown

Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
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 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

PH	GW	LPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	BTEX	MTBE	TPH- GRO
ick.	Elev	Recov.	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
(ft)	(ft)	(gal)							
	129.70								
	130.02								
	130.31								
	130.96								
	130.73								
	131.14		1,100.0 (5)	730.0 (5)	95.0 (5)	NA	1,925.0	1,100.0 (5)	4,400.0 (100)
	126.21							10.0 (1)	ND (100)
	127.99							7.7 (1)	ND (100)
	127.70		6.5 (1)	ND (1)	ND (1)	NA	6.5	16.0 (1)	ND (100)
	136.88		10.0 (20)	57,000.0 (20)	2,300.0 (20)	1,000.0 (40)	20,340.0	ND (20)	42,000.0 (5000)
	136.23								
	135.60								
	135.16								
	135.70								
	135.30								
	135.68		97.0 (25)	3,400.0 (25)	750.0 (25)	9,200.0 (50)	17,367.0	ND (25)	75,000.0 (5000)
	137.61								
	137.58								
	137.51								
	137.10								
	136.80								
	136.85		310.0 (20)	6,100.0 (20)	1,200.0 (20)	1,500.0 (40)	800.0	ND (20)	26,000.0 (1000)
	136.85		310.0 (20)	6,100.0 (20)	1,200.0 (20)	1,500.0 (40)	800.0	ND (20)	26,000.0 (1000)

in parenthesis.  
 detected for presence of LPH.  
 any results were rounded.  
 ending.

**Abbreviations:**  
 DTL: Depth to LPH  
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 THIRD QUARTER 2008 REPORT  
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0/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
135.94			No Analytical Results						
135.24			110.0 (20)	1,900.0 (20)	750.0 (20)	7,200.0 (40)	9,960.0	ND (20)	26,000.0 (1000)
136.78			No Analytical Results						
136.69			ND (20)	110.0 (20)	460.0 (20)	NA	570.0	ND (20)	22,000.0 (500)
123.19			ND (1)	ND (1)	ND (1)	ND (2)	ND	5.8 (1)	ND (100)
122.58			No Analytical Results						
122.68			ND (1)	ND (1)	ND (1)	ND (2)	ND	36.0 (1)	ND (100)
123.71			No Analytical Results						
123.87			ND (1)	ND (1)	ND (1)	NA	ND	4.6 (1)	ND (100)
123.31			340.0 (2)	ND (2)	ND (2)	43.0 (4)	383.0	490.0 (2)	1,100.0 (100)
123.26			No Analytical Results						
122.76			180.0 (2)	ND (2)	ND (2)	27.0 (4)	207.0	310.0 (2)	520.0 (100)
123.11			No Analytical Results						
124.01			240.0 (2)	ND (2)	ND (2)	NA	240.0	350.0 (2)	990.0 (100)
130.05			ND (1)	ND (1)	ND (1)	ND (2)	ND	1.7 (1)	ND (100)
131.75			No Analytical Results						
131.25			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
131.17			No Analytical Results						
130.93			ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
127.80			110.0 (1)	ND (1)	ND (1)	5.2 (2)	115.2	230.0 (1)	380.0 (100)
128.88			No Analytical Results						
129.11			94.0 (1)	ND (1)	ND (1)	5.2 (2)	99.2	170.0 (1)	270.0 (100)
125.09			No Analytical Results						

Abbreviations:

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 UNK: Unknown

Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

PH	GW	LPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	BTEX	MTBE	TPH- GRO
nick.	Elev	Recov.	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
(ft)	(ft)	(gal)							
	132.24		ND (1)	ND (1)	ND (1)	NA	ND (1)	200.0 (1)	490.0 (100)
	117.88		ND (1)	ND (1)	ND (1)	ND (2)	ND	44.0 (1)	ND (100)
	117.73		No Analytical Results						
	117.65		ND (1)	ND (1)	ND (1)	ND (2)	ND	52.0 (1)	ND (100)
	118.55		No Analytical Results						
	118.43		ND (1)	ND (1)	ND (1)	NA	ND	23.0 (1)	ND (100)
	116.41		ND (1)	ND (1)	ND (1)	13.0 (2)	ND	310.0 (2)	460.0 (100)
	115.61		No Analytical Results						
	115.55		34.0 (1)	ND (1)	ND (1)	5.2 (2)	ND	240.0 (2)	280.0 (100)
	116.04		No Analytical Results						
	116.45		37.0 (1)	ND (1)	ND (1)	NA	37.0	240.0 (1)	380.0 (100)
	121.16		ND (1)	ND (1)	ND (1)	ND (2)	ND	2.4 (1)	ND (100)
	121.60		No Analytical Results						
	121.51		ND (1)	ND (1)	ND (1)	ND (2)	ND	1.9 (1)	ND (100)
	121.69		No Analytical Results						
	121.54		ND (1)	ND (1)	ND (1)	NA	ND	1.8 (1)	ND (100)
	120.68		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	120.82		No Analytical Results						
	121.17		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	121.18		No Analytical Results						
	121.09		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)

in parenthesis.  
 reported for presence of LPH.  
 any results were rounded.  
 reporting.

**Abbreviations:**  
 DTL: Depth to LPH  
 DTW: Depth to Water  
 LPH: Liquid Phase Hydrocarbons  
 GW Elev: Groundwater Elevation

TOC: Top of Casing  
 ND: Not Detected above reporting limit  
 NA: Not Analyzed  
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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



10/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
107.66			ND (1)	ND (1)	ND (1)	ND (2)	ND	14.0 (1)	ND (100)
108.00			No Analytical Results						
107.89			ND (1)	ND (1)	ND (1)	ND (2)	ND	8.5 (1)	ND (100)
108.04			No Analytical Results						
107.97			ND (1)	ND (1)	ND (1)	NA	ND	9.4 (1)	ND (100)
108.67			ND (1)	ND (1)	ND (1)	ND (2)	ND	76.0 (1)	ND (100)
108.74			No Analytical Results						
108.76			ND (1)	ND (1)	ND (1)	ND (2)	ND	75.0 (1)	ND (100)
108.92			No Analytical Results						
109.00			ND (1)	ND (1)	ND (1)	NA	ND	74.0 (1)	ND (100)
136.83			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
135.09			No Analytical Results						
135.10			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
136.61			No Analytical Results						
136.51			ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
129.62			No Analytical Results						
129.42			No Analytical Results						
131.35			1.3 (1)	ND (1)	ND (1)	ND (2)	1.3	1.2 (1)	ND (100)
130.33			No Analytical Results						
130.28			ND (1)	ND (1)	ND (1)	ND (2)	ND	1.2 (1)	ND (100)
127.67			No Analytical Results						
130.56			ND (1)	ND (1)	ND (1)	NA	ND	1.2 (1)	ND (100)

Abbreviations:

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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

PH	GW	LPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	BTEX	MTBE	TPH- GRO
nick. (ft)	Elev (ft)	Recov. (gal)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
	122.98								No Analytical Results
	122.48		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	122.49		ND (1)	ND (1)	ND (1)	NA	ND	1.1 (1)	ND (100)
	121.76		540.0 (2)	ND (2)	ND (2)	ND (2)	520.0	410.0 (2)	1,600.0 (100)
	121.37								No Analytical Results
	121.29		620.0 (2)	ND (2)	ND (2)	ND (2)	520.0	400.0 (2)	1,000.0 (100)
	122.53								No Analytical Results
	121.40		340.0 (2)	ND (2)	ND (2)	NA	340.0	230.0 (2)	1,000.0 (100)
	121.00		13.0 (1)	ND (1)	ND (1)	ND (2)	13.0	37.0 (1)	ND (100)
	121.24		12.0 (1)	ND (1)	ND (1)	NA	12.0	35.0 (1)	ND (100)
	123.58		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	122.85		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
at Find Well			ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	88.27								No Analytical Results

Abbreviations:

in parenthesis.  
 detected for presence of LPH.  
 any results were rounded.  
 ding.

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 GW Elev: Groundwater Elevation

TOC: Top of Casing  
 ND: Not Detected above reporting limit  
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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



10/2008

Depth (ft)	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
	98.34		No Analytical Results						
	97.85		No Analytical Results						
	98.61		No Analytical Results						
			No Analytical Results						
			No Analytical Results						
	135.55		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	136.23		No Analytical Results						
	136.38		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	136.65		No Analytical Results						
	136.50		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
			No Analytical Results						
			No Analytical Results						
	128.60		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	128.93		No Analytical Results						
	128.95		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
	129.59		No Analytical Results						
	129.17		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
			No Analytical Results						
	122.02		ND (1)	ND (1)	ND (1)	ND (2)	ND	8.6 (1)	ND (100)
	121.66		No Analytical Results						

Abbreviations:

DTL: Depth to LPH	TOC: Top of Casing
DTW: Depth to Water	ND: Not Detected above reporting limit
LPH: Liquid Phase Hydrocarbons	NA: Not Analyzed
GW Elev: Groundwater Elevation	UNK: Unknown

Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

PH	GW	LPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	BTEX	MTBE	TPH- GRO
ick.	Elev	Recov.	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
(ft)	(ft)	(gal)							
---	121.73		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	122.73		No Analytical Results						
---	122.60		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
---	117.55		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	116.81		No Analytical Results						
---	117.00		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	117.63		No Analytical Results						
---	117.65		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	115.94		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	117.99		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	117.99		No Analytical Results						
---	117.45		ND (1)	ND (1)	ND (1)	NA	ND	20.0 (1)	ND (100)
---	131.45		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	131.45		No Analytical Results						
---	132.10		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	132.10		No Analytical Results						
---	132.01		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
---	130.46		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	130.46		No Analytical Results						
---	129.78		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
---	129.78		No Analytical Results						
---	129.78		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)

in parenthesis.  
 detected for presence of LPH.  
 any results were rounded.  
 ending.

Abbreviations:

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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



0/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
-	124.71		2.3 (1)	ND (1)	ND (1)	ND (2)	2.3	17.0 (1)	ND (100)
-	124.79		8.6 (1)	ND (1)	ND (1)	ND (2)	8.6	40.0 (1)	ND (100)
-	125.36		No Analytical Results						
-	124.38		4.3 (1)	ND (1)	ND (1)	NA	4.3	21.0 (1)	ND (100)
-	120.00		ND (1)	ND (1)	ND (1)	ND (2)	ND	42.0 (1)	ND (100)
-	120.15		No Analytical Results						
-	120.11		ND (1)	ND (1)	ND (1)	ND (2)	ND	100.0 (1)	ND (100)
-	120.71		No Analytical Results						
-	120.60		ND (1)	ND (1)	ND (1)	NA	ND	42.0 (1)	ND (100)
-	117.68		ND (1)	ND (1)	ND (1)	ND (2)	ND	110.0 (1)	ND (100)
-	117.70		No Analytical Results						
-	117.74		ND (1)	ND (1)	ND (1)	ND (2)	ND	25.0 (1)	ND (100)
-	118.28		No Analytical Results						
-	118.33		ND (1)	ND (1)	ND (1)	NA	ND	95.0 (1)	120.0 (100)
-	128.36		No Analytical Results						
-	128.39		55.0 (1)	7.0 (1)	1.2 (1)	93.0 (2)	156.2	ND (1)	880.0 (100)
-	130.26		No Analytical Results						
-	131.28		30.0 (1)	ND (1)	ND (1)	NA	30.0	ND (1)	680.0 (100)
-	125.42		No Analytical Results						
-	125.40		ND (1)	ND (1)	ND (1)	ND (2)	ND	16.0 (1)	ND (100)
-	127.00		No Analytical Results						
-	126.97		ND (1)	ND (1)	ND (1)	NA	ND	21.0 (1)	ND (100)

Abbreviations:

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 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
No Analytical Results									
124.17	124.20		360.0 (2)	89.0 (2)	2.9 (2)	85.0 (4)	536.9	ND (2)	1,300.0 (100)
No Analytical Results									
125.55	125.58		230.0 (2)	51.0 (2)	1.3 (2)	NA	282.3	15.0 (2)	1,000.0 (100)
No Analytical Results									
122.69	122.69		ND (1)	ND (1)	ND (1)	ND (2)	ND	9.7 (1)	ND (100)
No Analytical Results									
124.07	124.07		ND (1)	ND (1)	ND (1)	NA	ND	3.5 (1)	ND (100)
No Analytical Results									
113.47	113.47		29.0 (1)	ND (1)	ND (1)	3.3 (2)	32.3	290.0 (1)	250.0 (100)
No Analytical Results									
116.32	116.32		14.0 (2)	ND (2)	ND (2)	NA	14.0	270.0 (2)	350.0 (100)
No Analytical Results									
117.45	117.45		5.1 (1)	ND (1)	ND (1)	ND (2)	5.1	160.0 (1)	140.0 (100)
No Analytical Results									
118.38	118.32		4.4 (1)	ND (1)	ND (1)	NA	4.4	130.0 (1)	240.0 (100)
No Analytical Results									
107.54	107.80		49.0 (1)	ND (1)	ND (1)	ND (2)	49.0	84.0 (1)	280.0 (100)
No Analytical Results									
108.61	108.61		28.0 (1)	ND (1)	ND (1)	NA	28.0	74.0 (1)	270.0 (100)

**Abbreviations:**

in parenthesis.  
 detected for presence of LPH.  
 dry results were rounded.  
 rounding.

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 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



10/2008

Well ID	GW Elev (ft)	LPH Recov. (gal)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)	MTBE (µg/L)	TPH-GRO (µg/L)
-	124.77		No Analytical Results						
-	124.23		No Analytical Results						
-	109.75		61.0 (2)	ND (2)	ND (2)	ND (4)	61.0	270.0 (2)	410.0 (100)
-	109.73		No Analytical Results						
-	109.75		17.0 (1)	ND (1)	ND (1)	ND (2)	17.0	160.0 (1)	140.0 (100)
-	110.09		No Analytical Results						
-	110.17		23.0 (1)	ND (1)	ND (1)	NA	23.0	160.0 (1)	330.0 (100)
-	115.97		ND (1)	ND (1)	ND (1)	ND (2)	ND	4.6 (1)	ND (100)
-	117.00		No Analytical Results						
-	116.81		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
-	116.66		No Analytical Results						
-	116.56		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
-	129.46		3.4 (1)	ND (1)	ND (1)	ND (2)	3.4	1.8 (1)	ND (100)
-	129.93		No Analytical Results						
-	129.78		ND (1)	ND (1)	ND (1)	ND (2)	ND	ND (1)	ND (100)
-	129.95		No Analytical Results						
-	129.71		ND (1)	ND (1)	ND (1)	NA	ND	ND (1)	ND (100)
-	128.17		No Analytical Results						
-	128.18		10.0 (1)	9.0 (1)	ND (1)	16.0 (2)	35.0	26.0 (1)	120.0 (100)
-	130.46		No Analytical Results						

Abbreviations:

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 ng.

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Table C-1. GROUNDWATER MONITORING DATA  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD, CHILLUM, MARYLAND



30/2008

PH	GW	LPH	Benzene	Toluene	Ethyl- benzene	Total Xylenes	BTEX	MTBE	TPH- GRO
nick.	Elev	Recov.	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
(ft)	(ft)	(gal)							
	123.55		150.0 (2)	140.0 (2)	16.0 (2)	110.0 (4)	416.0	440.0 (2)	700.0 (500)
	124.34		No Analytical Results						
	117.56		1,000.0 (10)	1,900.0 (10)	150.0 (10)	1,100.0 (20)	4,150.0	590.0 (10)	5,500.0 (500)
	117.96		No Analytical Results						
	117.71		2,200.0 (20)	2,700.0 (20)	240.0 (20)	1,700.0 (40)	6,840.0	3,700.0 (20)	9,600.0 (1000)
	126.35		No Analytical Results						
	126.02		480.0 (5)	900.0 (5)	63.0 (5)	810.0 (10)	2,253.0	650.0 (5)	2,800.0 (100)
	135.41		No Analytical Results						
	137.80		No Analytical Results						

**Abbreviations:**

parenthesis.  
 ected for presence of LPH.  
 y results were rounded.  
 ding.

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TOC: Top of Casing  
 ND: Not Detected above reporting limit  
 NA: Not Analyzed  
 UNK: Unknown

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TABLE D-1. SOIL VAPOR MONITORING REPORT  
 THIRD QUARTER 2008 REPORT  
 FORMER CHEVRON FACILITY 122208  
 5801 RIGGS ROAD CHILLUM, MARYLAND



- 9/30/2008

Sample ID	Total Hydrocarbon (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Difluoromethane (ppm)	Carbon Monoxide (ppm)	Carbon Dioxide (ppm)	Methane (ppm)
(5.1)	ND (6)	ND (6.9)	ND (6.9)	ND (6.9)	ND (5.8)	NS	8.0	9.0	0.0
(3.9)	ND (4.6)	ND (5.2)	ND (5.2)	ND (5.2)	ND (4.4)	ND (13)	5.4	16.8	0.0
(3.8)	ND (4.5)	ND (5.2)	ND (5.2)	ND (5.2)	ND (4.3)	ND (13)	9.4	7.5	0.0
(3.9)	ND (4.6)	ND (5.4)	ND (5.4)	ND (5.4)	ND (4.4)	ND (13)	5.7	15.3	0.0
(3.9)	ND (4.6)	ND (5.2)	ND (5.2)	ND (5.2)	53.0 (4.4)	1,400 E (13)	11.5	11.5	0.0
(3.9)	ND (4.6)	ND (5.2)	ND (5.2)	ND (5.2)	73.0 (4.4)	14.0 (13)	11.5	11.5	0.0
(7.7)	ND (9.1)	ND (10)	ND (10)	ND (10)	49 (8.7)	ND (26)	12.1	9.5	0.0
(5.2)	ND (6.2)	ND (7.1)	ND (7.1)	ND (7.1)	ND (5.9)	NS	16.5	3.9	0.0
(16)	ND (19)	ND (22)	ND (22)	ND (22)	ND (18)	>240,000 S (56)	19.4	0.9	4.4
(180,000)	ND (210,000)	ND (240,000)	ND (240,000)	ND (240,000)	ND (200,000)	300,000,000 E (590,000)	NS	NS	NS
(3.6)	ND (4.3)	ND (5.0)	ND (5.0)	ND (5.0)	ND (4.1)	940 (12)	10.4	4.2	0.0
(3.7)	27 (4.4)	41 (5.0)	69 (5.0)	65 (5.0)	5.2 (4.2)	540 (12)	13.5	6.8	0.0
(5.1)	ND (6)	ND (6.9)	7.6 (6.9)	ND (6.9)	ND (5.8)	NS	0.2	8.9	21.1
(3.9)	ND (4.6)	ND (5.2)	21.0 (5.2)	ND (5.2)	12.0 (4.4)	17,000 E (13)	15.8	4.3	1.2

arenthesis.  
 ended.  
 eporting limit.  
 led.  
 d in February 2008  
 re not sampled in March 2008 due to water in the well.